

Howe Mire: excavations across the cropmark complex at Inveresk, Musselburgh, East Lothian

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ABSTRACT

Excavations across the complex of cropmarks at Inveresk, Musselburgh, East Lothian (NGR: NT 3540 7165 to NT 3475 7123), revealed a palimpsest of features ranging in date from the late Mesolithic to the Early Historic period. The bulk of the features uncovered were previously known from cropmark evidence and are connected with either the extensive field system associated with the Antonine Fort at Inveresk or the series of Roman marching camps to the south-west of the field system. The excavation has identified a scattering of prehistoric activity, as well as Roman settlement within the field system, together with dating evidence for one of the marching camps and structures reusing dressed Roman stone.

INTRODUCTION

An archaeological watching brief was conducted in advance of the construction of 5km of new sewer pipeline from Wallyford to Portobello (NT 3210 7303 to NT 3579 7184). The construction works were conducted by M J Gleeson Group plc on behalf of Stirling Water. The route of the pipeline ran through a series of cropmarks to the south of Inveresk (illus 1; NMRS numbers NT 37 SE 50, NT 37 SW 186, NT 37 SW 33, NT37 SW 68 and NT 37 SW 182), all of which are scheduled ancient monuments and all works were therefore undertaken in accordance with a Scheduled Monument Consent.

The watching brief ran from September 1998 to March 1999. Outwith the scheduled areas no significant archaeological features were identified. All archaeological features within the scheduled area were fully excavated, recorded and sampled between December 1998 and January 1999. Full copies of all specialist

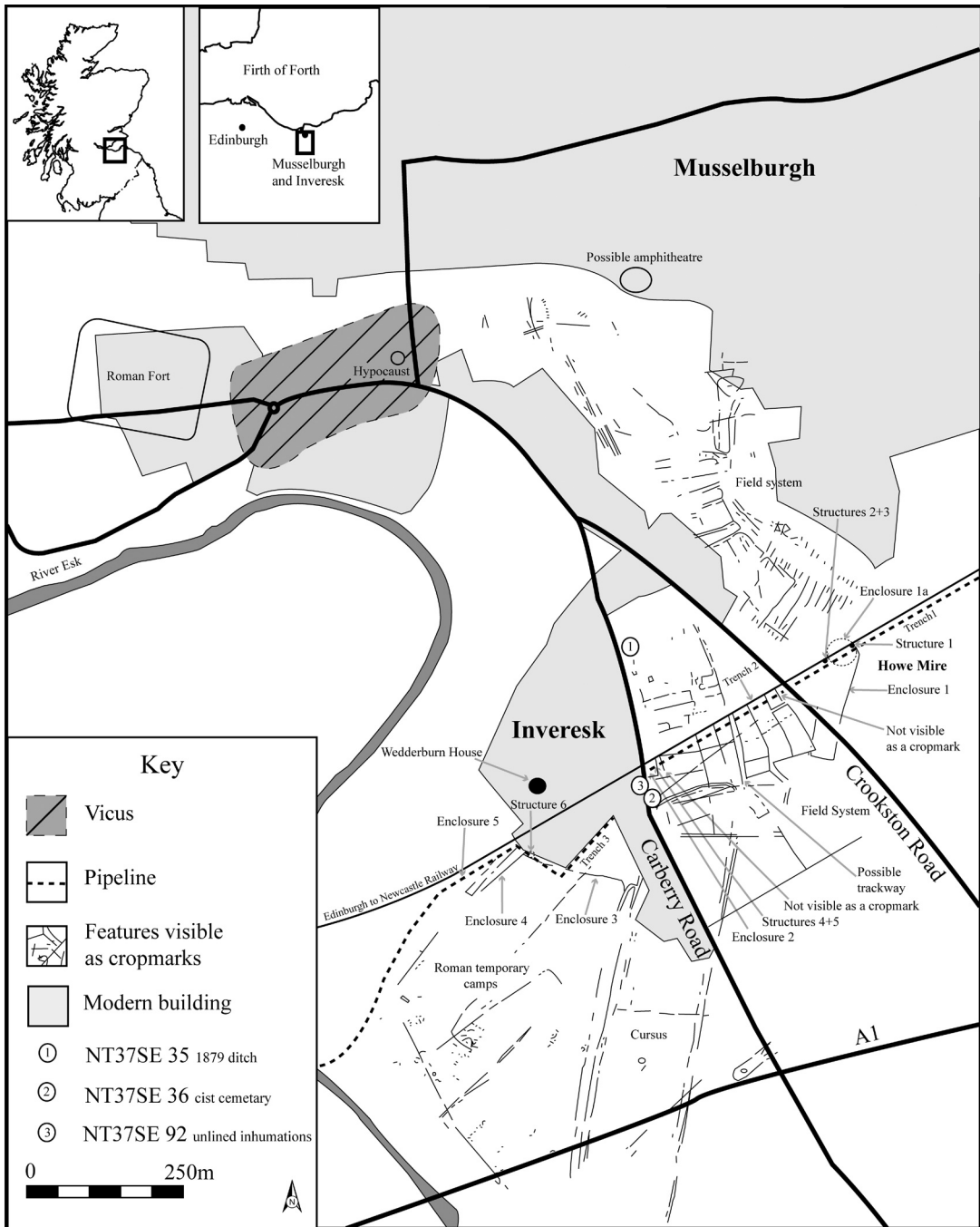
reports have been included in the site archive. A brief summary of these excavations has been previously published (Cook 2002a).

This report deals solely with the excavated area within the scheduled areas which comprised a 6m wide trench approximately 670m long (illus 1) (NT 3540 7165 to NT 3475 7123). The trench was located immediately to the south of the Edinburgh to Dunbar railway line (which at this point is in a cutting) and crossed both Crookston and Carberry Roads, Inveresk, Musselburgh.

The excavation area sat on a raised gravel ridge some 4–5m higher than Howe Mire which is located immediately to south and east of the excavation area. The eastern end of the excavation area sat at around 22m OD and rose slightly immediately to the east of Carberry Road to around 24m OD before gradually dropping to around 20m OD, and into the valley of the River Esk.

The soils belong to the Dreghorn Association and comprise sands and gravels with brown

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ILLUS 1 Site location (Based on the Ordnance Survey map © Crown copyright)

forest soils (Bown & Shipley 1982, 59). The land is described as capable of producing a very wide range of crops and is amongst the most fertile in Scotland.

The excavation area sits within one of the richest archaeological landscapes in Scotland, and a wide variety of features are known from the area (for a recent summary see Bishop 2002a). In general, three broad periods of prehistoric activity are known from the Inveresk area: Neolithic/Early Bronze Age, Later Bronze Age/Iron Age and Roman.

NEOLITHIC AND EARLY BRONZE AGE (4000–1500 BC)

This period is characterized by the large ditch-defined *cursus* immediately to the south of the excavation area (illus 1). This monument comprises an enclosure approximately 900m long and 135m wide associated with ritual activity from the Neolithic and Bronze Age (Hanson 2002a).

LATE BRONZE AGE-IRON AGE (1500 BC–AD 70)

Activity in this period at Inveresk is characterized by unenclosed settlement: five timber roundhouses (in addition to those reported from here) have been excavated around Inveresk (Hanson 2002a; Neighbour 2002). Within Midlothian and East Lothian timber roundhouses have a wide chronological range with examples dating from the mid second millennium BC to the later first millennium AD (Cook 2000; Haslegrave & McCullagh 2000).

ROMAN (AD 70–400)

Roman activity in Scotland comprises at least three major incursions: Flavian (late first century AD), Antonine (mid-second century) and Severan (early third century). There was also a series of ill-defined campaigns throughout the fourth century and presumably several unrecorded raids throughout the whole period

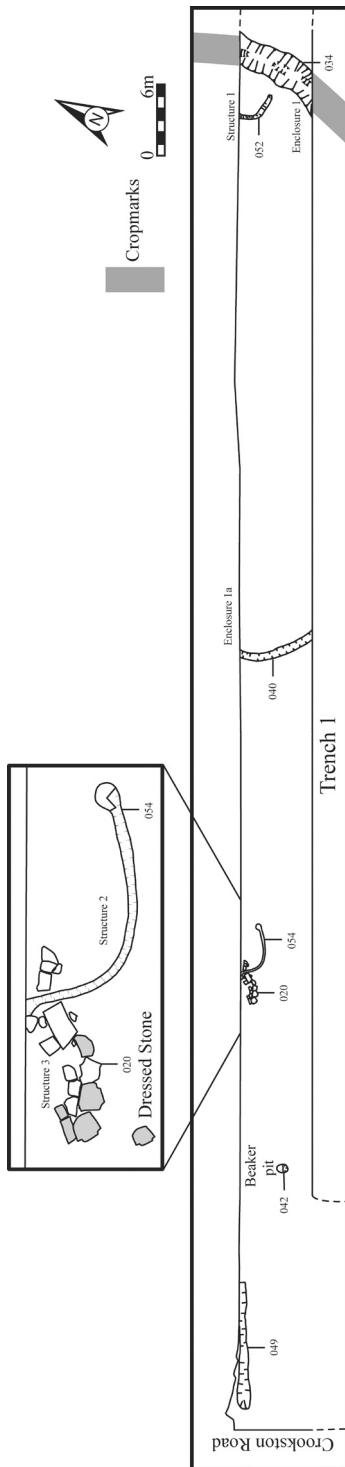
(Hanson 1978). Each of these phases is likely to be associated with temporary camps.

Given the interrupted nature of the Roman phase there are likely to be several phases of native occupation dating to this period between Roman incursions.

Inveresk is dominated by Roman remains which cover the whole of present-day Inveresk and extend to the line of the current A1 road (Bishop 2002a, inside back cover (ibc)). Specifically, the remains comprise the fort and its associated *vicus*, an outlying field system; and a series of temporary camps (Bishop 2002a, provides a review of the evidence to date). The fort is considered to relate to the Antonine invasion of Scotland in the mid-second century AD, founded around AD 140 and abandoned around AD 165 with the reoccupation of Hadrian's Wall (Hanson & Maxwell 1983, 137–51). However, Bishop (2002b, 34–5) has suggested that the foundation of the fort may be later, based on evidence from the *vicus*. Leslie (2002a, 26) has hinted that there may be three phases of occupation at the fort, rather than the two phases identified by earlier workers (Richmond 1980; Hanson 1984).

Vici comprise civilian settlements outwith the fort, inhabited by people servicing or connected with the fort (for a more complete review of the nature of *vici*, see Breeze 2002; Thomas 1988a, 163–4; Sommer 1984). There have been three programmes of exploration at Inveresk *vicus*: Thomas (1988a), Rogers (2002) and Bishop (2002b). Bishop has identified three phases of successive occupation and demolition in the *vicus* each using the same building plot.

To the south and east of the *vicus* is the field system, first identified by St Joseph (1951, 61) as cropmarks. The cropmarks of the field system extend for some 900m north to south (Brown 2002, 7) and are a minimum of 250m wide at their southern end (Bishop 2002a, ibc). The field system comprises a series of rectilinear enclosures (ibid), and elements of the field system have been previously explored by Neighbour (2002) and Leslie (2002b).



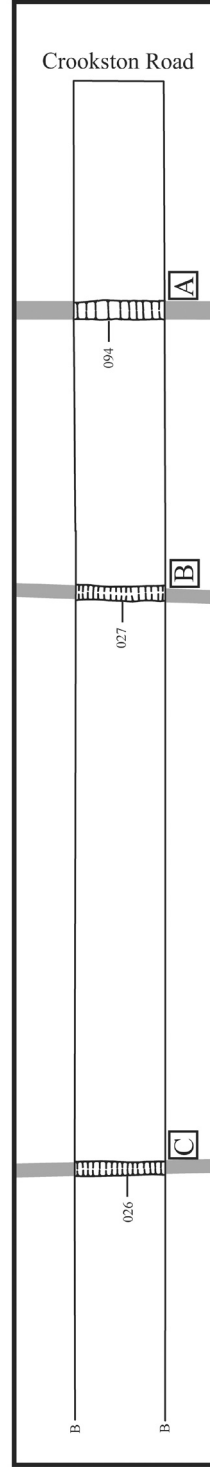
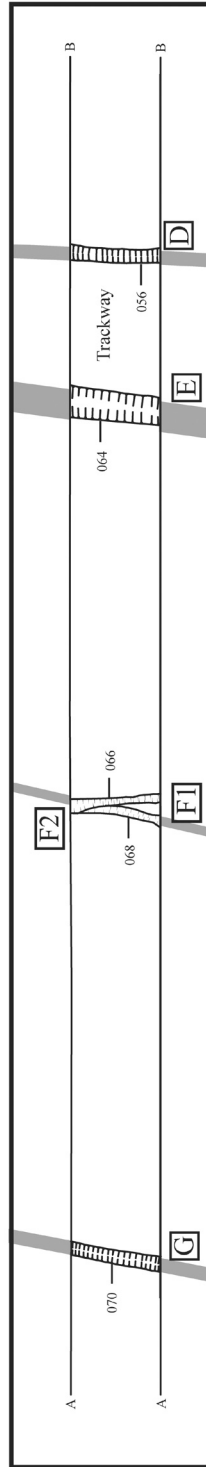
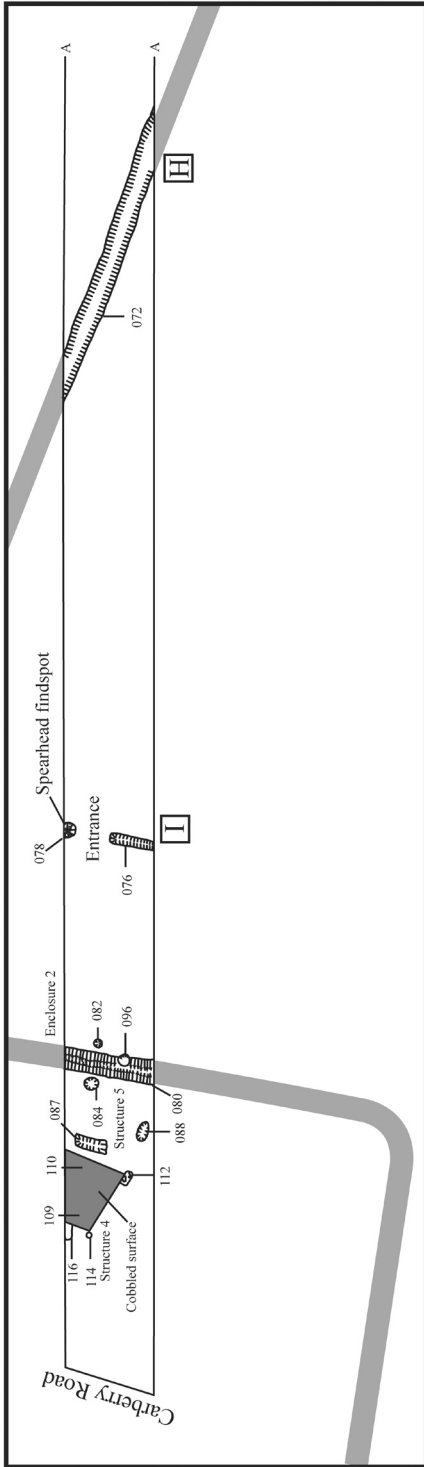
ILLUS 2 Trench 1

To the south-west of the field system is a series of Roman temporary camps used, as their name suggests, for temporary accommodation by the Roman army (see Welfare & Swan 1995 for a fuller discussion of camps). There are at least two temporary camps in this area and a further two enclosures which may also be temporary camps (Bishop 2002a, ibc). Hanson (2002, 53) has suggested that the largest of the camps (Enclosure 4 below) is Antonine in date.

EXCAVATION

Prior to the excavation the known archaeological features within the pipeline cut comprised (from east to west) (illus 1) the following features, which with the exceptions of item iv were identified from cropmarks:

- i Enclosure 1: a rectilinear enclosure, orientated roughly north/south, with a square southern end and measuring approximately 200m long and 45m wide (NMRS NT 37 SE 50);
- ii field system: a series of rectilinear enclosures, orientated roughly north south, with a trackway in the middle (NMRS NT 37 SE 50);
- iii Enclosure 2: a corner of an enclosure of unknown size, although its absence from the cropmarks to the north of the railway suggests it may have been up to 50m wide (NT 37 SE 50). The enclosure appears to be respected by the field system.
- iv two groups of human remains: two disturbed inhumations found at Carberry Bridge (Carter 1990, NT 37 SE 92) and a series of stone cists found in 1865 (NT 37 SE 36), the precise nature of the cists is unknown as the Ordnance survey Name Book was lost.
- v Enclosures 3: a rectilinear enclosure identified from cropmark evidence, of which only the northern side is visible and measures approximately 180m wide (NT 37 SW 186).
- vi Enclosure 4: a Roman temporary camp (NT 37 SW 33), measures at least 47m wide (Bishop 2002a, ibc) and has been suggested



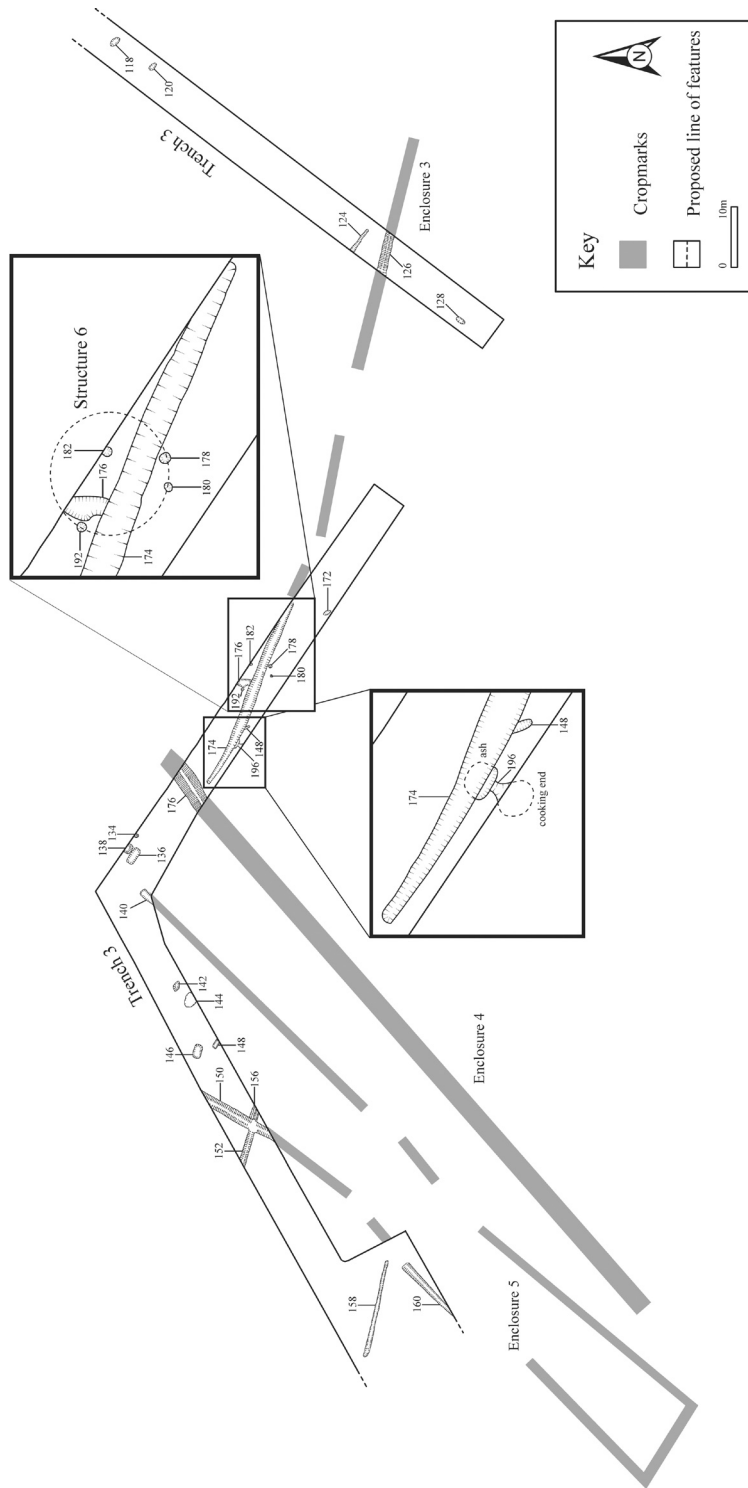
Cropmarks



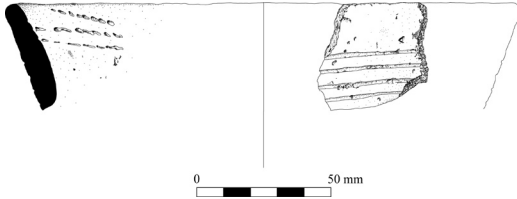
Section drawn in Figure 8



ILLUS 3 Trench 2



ILLUS 4 Trench 3



ILLUS 5 AOC Beaker sherd

to be of Antonine date (Hanson & Maxwell 1983, 65–7 and Hanson 2002a, 53).

- vii Enclosure 5: a segmented rectilinear enclosure, orientated north-east/south-west measuring approximately 10m wide and 50m long (NT 37 SW 68).

The results of the excavation broadly conformed to the expected pattern outlined above. However, it is clear that the interpretation of the cropmark complex is a simplification of a palimpsest of features (illus 2, 3 & 4). For example, several of the ditches excavated and none of the structure was present on the cropmarks.

With the exception of two stone features (Structures 3 and 4) all features survived as sub-surface deposits. The vast majority of feature fills comprised uniform homogenized soil. The topsoil present between Crookston and Carberry Road was considerably deeper than in the other excavation areas, as was also noted by Hanson (2002).

Five broad periods of activity were identified during the excavations Late Mesolithic, Neolithic/Early Bronze Age, Late Bronze Age/Iron Age, and Early Historic (defined here as the second half of the first millennium AD). While the Roman activity is contemporary with the Iron Age, it is presented separately for ease of discussion.

LATE MESOLITHIC (4500–4000 BC)

Context 116 (illus 3) comprised a single sub-oval pit measuring up to 1.30m long, 0.60m wide and up to 0.20m deep. The feature was cut by a cobbled surface (Structure 4), and three dates were obtained from charcoal from its fill, 5510 ± 40 BP (AA-49321), 5340 ± 45 BP (AA-49322) and 5305 ± 40 BP (AA-49323). There were no other ecofacts present, although a metal object was recovered (see below) implying that either the charcoal or the metal was intrusive.

NEOLITHIC AND EARLY BRONZE AGE (4000–1500 BC)

Two groups of features were identified as either Neolithic or Early Bronze Age: Context 42 and Enclosure 5.

Context 42

Context 42 (illus 2) comprised a small sub-circular pit which measured up to 0.75m in diameter and up to 0.75m deep. The pit contained a fragment of Beaker pottery (illus 5) described as part of an AOC Beaker dating to 2600–1800 BC (Ann MacSween, pers comm).

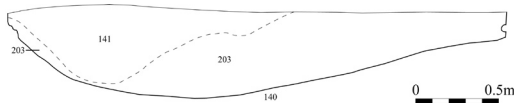
Enclosure 5

Context 140 (illus 4, 6) a ditch with a shallow profile was assumed to represent a terminal of the south-eastern ditch of Enclosure 5. The feature contained a limited assemblage of charcoal from which a date of 3800 ± 35 BP (AA-49319) was obtained. A section of the assumed north-western ditch (Context 150) of Enclosure 5 was also excavated (illus 7). Context 150 cuts an earlier ditch, Context 152, (1.0m wide and up to 0.65m deep) which is almost perpendicular to 150. An assumed further portion of the north western ditch of Enclosure 5 was excavated as Context 160 (1.4m wide and 0.7m deep), this contained two fragments of Roman pottery (see below).

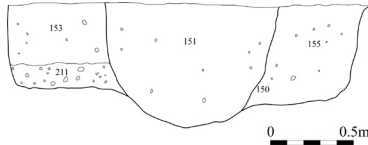
Context 158, a fragment of ditch which runs roughly parallel to Context 152 (0.97m wide and up to 0.15m deep) and roughly perpendicular to Context 150, also contained a fragment of Roman pottery. Within Enclosure 5 were four features that could not be related to any phase of activity on the site and are assumed to relate to Enclosure 5 given their proximity. However, none of the features contained any finds or ecofacts and so further comment is impossible.

LATE BRONZE AGE–IRON AGE (1500 BC–AD 70)

Only one feature has been dated to the Late Bronze Age or Iron Age. Structure 6 (illus 4) comprises a group of four post-holes (Table 1 gives their dimensions) charcoal from the fill of one (Context 192) producing a date of 2850 ± 35 BP (AA-49320). It is probable that Enclosure 3's ditch truncated further post-holes of this structure.



ILLUS 6 Section through Enclosure 5 south-eastern ditch terminal



ILLUS 7 Section through Enclosure 5, north-western ditch

ROMAN (AD 70–400)

There are five sets of Roman period features within the excavation area: the field system; Enclosure 1; Enclosure 2 (which surrounds Structure 4); Enclosure 3; and Enclosure 4.

Field system

The field system, as sectioned by the trench (illus 3) comprises six rectilinear fields defined by ditches and orientated roughly north-west/south-east. In general all the ditches are flat-bottomed and steep sided with single homogenized fills (illus 8). However, their width and depth varies considerably (Table 2).

In general the ditches contained very few artefacts but there was a concentration of pottery (nine sherds) in Ditch H and a spear-head (illus 19) was found in the northern terminal of Ditch I.

At the centre of the field system is a trackway with three fields on either side of it. The width of the fields varies from 18m to 63m. The lengths of the fields are uncertain given the vagaries of the cropmark evidence.

TABLE 1
Dimensions of the post-holes of Structure 6

Context no	Diameter (m)	Depth (m)
178	0.5	0.23
180	0.3	0.15
182	0.1	0.3
192	0.4	0.3

TABLE 2
Dimensions of ditches within field system

Ditch	Depth (m)	Max Width (m)
A (94)	0.35	1.1
B (27)	0.6	1.2
C (26)	0.7	2.2
D (56)	0.41	1
E (64)	0.45	1.65
F (68)	0.5	1.4
F recut (66)	0.49	1
G (70)	0.3	1.1
H (72)	0.5	1.5
I (northern terminal) (78)	0.36	0.66
I (southern terminal) (76)	0.6	1.1

The trackway is around 8m wide and is defined only as a gap between enclosures; there was no sign of any surviving surface.

There was an entrance gap 2.4m wide (illus 3) in the westernmost ditch (Ditch I) of the field system. A Roman spear-head was found in the base of the northern terminal of the entrance.

Only one of the ditches showed chronological depth. In Ditch F, Context 68 is recut by Context 66, but it is not clear within the limited excavation area whether this was a recut of Ditch F or whether they are two completely different ditches.

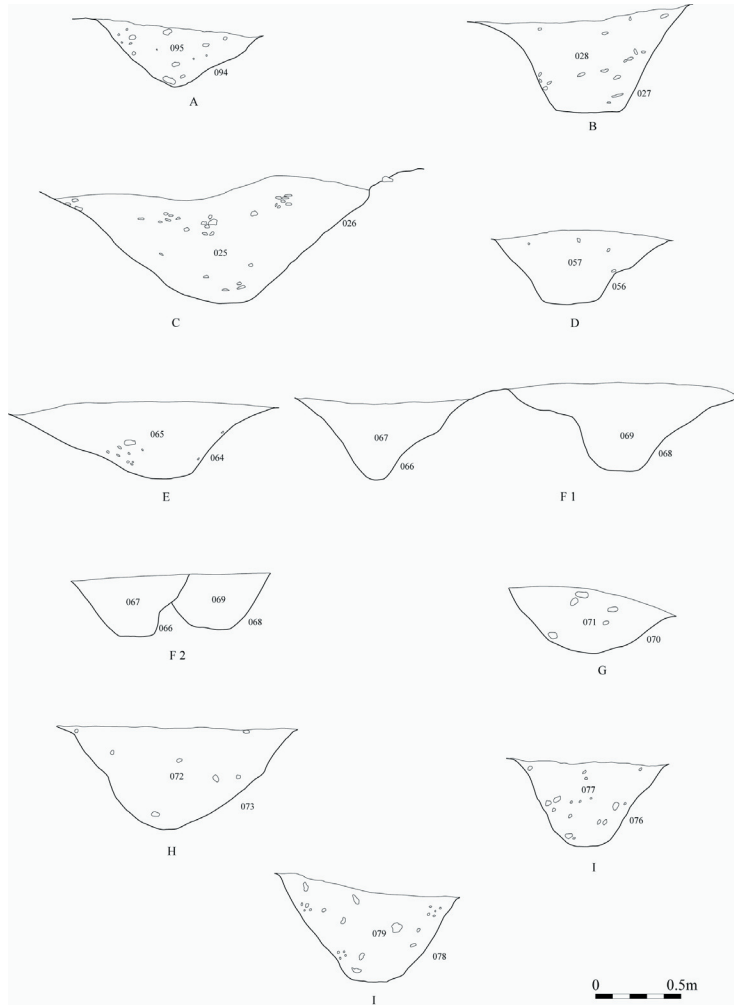
Enclosure 1

The eastern ditch (Context 34) of Enclosure 1 (illus 1, 2) had traces of an 'ankle breaker' at its base (illus 9), and an abraded sherd of samian (illus 16, find 32) was recovered from its fill. Within the excavation area the ditch was curving on plan and there was no trace of the assumed western side to the enclosure within the excavation area.

Enclosure 2

Enclosure 2 lay on the highest point of the excavation area on a slight knoll at 24.5m OD (illus 3). The ditch of Enclosure 2 (illus 10), has an 'ankle breaker' at its base and contained 11 sherds of Roman pottery. A post-hole, Context 96 (illus 11) from Structure 5 (below) cut the ditch of Enclosure 2 (see below).

Within Enclosure 2, although not at its centre, was Structure 4: a rectilinear area of cobbling measuring 4.3m by 4.5m which was covered by a layer of clay 0.1m thick, which contained a sherd of amphora. There was only one post-hole possibly associated with this



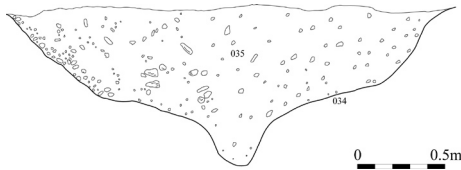
ILLUS 8 Sections through field system ditches

feature, Context 114, which lay at its south-west corner (illus 3), it was 0.40m in diameter, and up to 0.35m deep, with straight sides and a flat base. Immediately to the east of Structure 4 lay a pit (Context 87), 2.0m long, 1.0m wide and up to 0.14m deep. Context 87 contained pottery, nails and a wallhook or masonry fitting. Three dates were obtained from Context 87, 1960 ± 35 BP (AA-49324), 1925 ± 35 BP (AA-49325) and 1915 ± 35 BP (AA-49326).

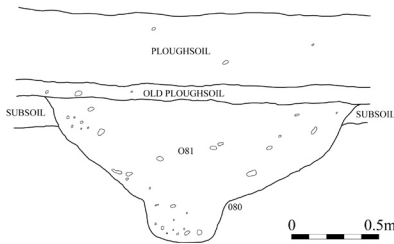
Enclosure 3

The ditch of Enclosure 3 (illus 4, 13) connects with the ditch of Enclosure 4 at the trench edge and their

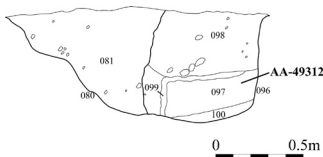
relationship could not be defined as the critical point lay outwith the excavation area. However, there were no traces of a ditch in the excavation area to the north east of Enclosure 4 suggesting that Enclosure 3 does indeed end at the Enclosure 4 ditch. A bipartite stepped pit, Context 196, which was full of charcoal and ash was cut by Enclosure 3 (illus 12). Three dates were obtained from the feature, 1900 ± 35 BP (AA-49317), 1905 ± 35 BP (AA-49318) and 1945 ± 35 BP (AA-49318). Thin-section analysis of the fill of the pit revealed that the burning was not in situ at the point where the sample was taken. In addition the fire was fuelled with twigs and branches of alder, hazel and birch and turf was also burnt either as a fuel or incidentally (Ellis 2002).



ILLUS 9 Enclosure 1 ditch



ILLUS 10 Section through Enclosure 2 ditch



ILLUS 11 Enclosure 2 ditch cut by a post-hole from Structure 5

Enclosure 4

Just over 6m of the Enclosure 4 ditch was present within the excavation area (illus 4) with a 'V' shaped profile, with traces of an 'ankle breaker' at its base (illus 13). The ditch was filled with homogenized gravel rich fills, in which there were no artefacts and there was no sign of any slumped bank material in the fill.

EARLY HISTORIC AD 400–800

Pit 118

Only one feature dated to this period (illus 4) and comprised an isolated sub-oval pit measuring 1.50m long, 0.80m wide and up to 0.14m deep from which a limited assemblage of burnt barley was recovered (Vandorpe 2001) and from which three dates were

obtained 1655±35 BP (AA-49313), 1660±35 BP (AA-49314) and 1620±40 BP (AA-49315). The function and nature of the pit is unclear.

UNDATED

Five groups of excavated features, Structures 1, 2, 3, 5 and Ditch 40 and could not be accurately dated.

Structures 1 & 2

Structures 1 and 2 (illus 2) comprised two small arcs of U-shaped ring groove with no associated internal features. Structure 1 (Context 52) measured approximately 3.40m long, up to 0.40m wide and up to 0.15m deep. Structure 2 measures approximately 5.4m long, 0.35m wide and up to 0.25m deep. A single post-hole was found in the ring-groove of Structure 2, which measured up to 0.35m deep. A single sherd of Roman pottery was recovered from Structure 1 but is considered to be intrusive. Structure 2 was overlain by Structure 3

Context 40

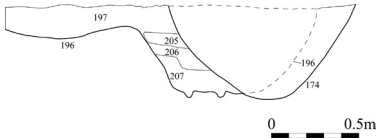
Context 40 was located some 44m to the west of Enclosure 1 and measured up to 1.00m wide and up to 0.75m deep, with a U-shaped profile (illus 14) and single homogenized gravel-rich fill.

Structure 3

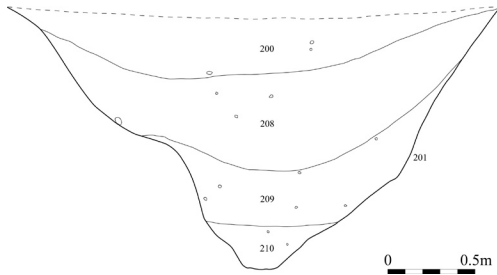
Structure 3 (illus 2) comprised an arc of paving lying on the surface of the subsoil, the projected line of which overlay Structure 2. The paving measured 3.6m long by 1.3m wide and comprised 18 stones, five of which were reused Roman stone and included two armchair voussoirs (see below). Four other dressed stones were recovered from unstratified from the topsoil within the vicinity of this feature, including

TABLE 3
Dimensions of post-holes of Structure 5

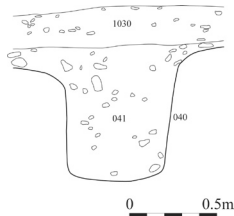
Context no	Length	Width	Depth
82	0.6	0.5	0.55
84	0.9	0.8	0.85
88	0.6	1.04	0.53
96	0.65	0.3	0.6
112	1.1	0.65	0.76



ILLUS 12 Enclosure 3 ditch cutting field oven



ILLUS 13 Section through enclosure 4 ditch



ILLUS 14 Section through enclosure 1a ditch

three armchair voussoirs and a plinth, which are assumed to have derived from Structure 3. The precise function of the paving is unknown.

Structure 5

Structure 5 (illus 3) consists of five post-holes of similar size (Table 3) that formed no discernible pattern within the excavation area. Four fragments of worked stone used as packing stones were recovered from three of the post-holes including a possible fragment of an armchair voussoir. Six sherds of Roman pottery were also recovered from this post-hole. One of the post-holes (Context 96) cut the ditch of Enclosure 2 (illus 11) and a date of 1955 ± 35 BP (AA-49312) was obtained from a piece of cow bone within the post-hole.

RADIOCARBON DATES

The aim of the radiocarbon dating programme was twofold: first, to provide a chronological framework for the site; second, to provide independent dating evidence for the ceramic assemblage.

The dates (all AMS single entity samples) were obtained from the University of Arizona via the Scottish Universities Reactor Centre (SURRC). Where the charcoal recovered from the entire context was under 5g, and therefore of less secure taphonomy, three dates were obtained from the context in question, in keeping with Ashmore's (1999) proposed methodology.

An attempt to gain average dates from those features with three dates was undertaken using the OxCal Program (www.rlaha.ox.ac.uk) presented below. Of the four sets of three dates only one could not be grouped comfortably with any of the site dates 5510 ± 40 BP (AA-49321). This could be explained by the following hypotheses:

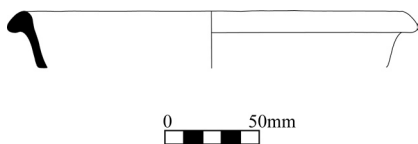
- i the two *Quercus* sp dates (5510 ± 40 BP (AA-49321) and 5340 ± 45 BP (AA-9322)) derived from respectively the inner and outer core of the long lived oak;
- ii the feature became contaminated with older charcoal representing earlier activity in the feature's environs.

It seems likely, given the small size of the pit and of the quantities of charcoal involved, that the latter explanation is the more probable. The OxCal program was also used to demonstrate that the dates from Contexts 97 and 87 are statistically similar.

ROMAN POTTERY

Colin Wallace

This comprised 59 sherds (2.6kg) from Roman-period contexts, with a further 14 unstratified Roman sherds and eight more from post-Roman features. The few datable pieces can be paralleled in other Antonine-period assemblages, rather than earlier or later ones (a greyware dish, late Montans samian, Central Gaulish samian and Lower Rhineland colour-coat), along with the presence of BB1 and BB2 bodysherds. They confirm that the features (Enclosure 1, Enclosure 2, pit 086, Enclosure 5, ditch 158, Field System Ditch B and Ditch H) were open in the Antonine period.



ILLUS 15 Fine grey ware bead-rim bowl (find 14)

There were no firm signs of any first-century pottery to go with the radiocarbon-dated earlier activity in the vicinity of Enclosure 2. South Spanish amphorae, along with South Gaulish amphora, black-burnished wares and various grey wares made up the bulk of the material by count and weight.

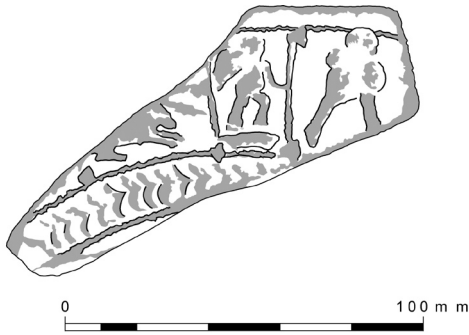
The Project Archive contains a report in which the Roman pottery has been recorded to the *Ceramic Archive Level* set out in the Study Group for Roman Pottery's Guidelines (Darling 1994), in order to assign a reasonable date to the assemblage, to give an indication of potential and to lend itself to useful comparison with other contemporary groups from North Britain. Wares have been linked as far as possible to the published descriptions of the National Roman Fabric Reference Collection (Tomber & Dore 1998). Table 6 here summarizes the quantified pottery data (Roman-period contexts are in bold).

At current estimates, the date-range for the present material would be c AD 142–158/164 (cf Breeze & Dobson 2000, 115, 129). The present material sheds no great light on the very recent discussion (only published in outline and partly based on pottery evidence) of site dating at Inveresk (Bishop 2002b, 4 & 34), where it has been suggested that part at least of the complex (fort, small town and field system) could be later than the conventional Antonine-period dating. It is noticeable that the fine grey ware BB-type dish from Enclosure 1 (illus 15) has an angular beaded rim while those from Severan Carpow are rounded (Dore & Wilkes 1999, 540–1), maintaining at least one rough period-distinction.

The condition of the pottery is relatively good, with an average sherd size of 44.6g for the Roman-period contexts. Few rims were present, hence the low combined Estimated Vessel Equivalent count of 0.20 for the 59 sherds/2630.7g. from Roman-period contexts, but then this is not surprising as a goodly part of the assemblage is made up of South Spanish amphora bodysherds (21 sherds out of 59 [c 36%], but 1741.6g out of 2630.7 [c 66%]). Some coarseware sherds had been burnt after breakage; the late Montans samian bowl from Field System Ditch B (illus 16) was

TABLE 4
Radiocarbon dates

Sample	Context	Feature	Species	Years BP	$\delta^{13}C$	Calibrated 1 sigma	Calibrated 2 sigma
AA-49312	97	Post-hole, Structure 5	Mammal bone	1955 ± 35	-22.2‰	AD 0–85	40 BC – AD 130
AA-49313	119	Pit	<i>Hordeum</i> sp. charred grain	1655 ± 35	-23.3‰	AD 340–430	(81.9) AD 320–470
AA-49314	119	Pit	<i>Hordeum</i> sp. charred grain	1660 ± 35	-22.5‰	AD 340–430	(91.9) AD 350–470
AA-49315	119	Pit	<i>Hordeum</i> sp. charred grain	1620 ± 40	-23.3‰	(41.7) AD 390–470	AD 340–540
AA-49316	207	Oven cut by Enclosure 3	<i>Corylus avellana</i> charcoal	1900 ± 35	-25.1‰	(66.0) AD 50–140	AD 20–220
AA-49317	207	Oven cut by Enclosure 3	<i>Alnus glutinosa</i> charcoal	1905 ± 35	-25.3‰	(65.6) AD 55–135	AD 20–220
AA-49318	207	Oven cut by Enclosure 3	<i>Corylus avellana</i> charcoal	1945 ± 35	-25.9‰	(56.6) AD 20–85	(91.5) AD 0–130
AA-49319	203	Ditch part of Enclosure 5	<i>Quercus</i> sp charcoal	3800 ± 35	-24.8‰	(58.6) 2290–2190 BC	(93.3) 2350–2130 BC
AA-49320	193	Posthole, part of Structure 6	<i>Quercus</i> sp charcoal	2850 ± 35	-25.8‰	1050–920 BC	1130–910 BC
AA-49321	117	Pit cut by Structure 4	<i>Quercus</i> sp charcoal	5510 ± 40	-27.2‰	(39.7) 4370–4320 BC	(80.1) 4460–4320 BC
AA-49322	117	Pit cut by Structure 4	<i>Quercus</i> sp charcoal	5340 ± 45	-27.0‰	(35.6) 4130–4040 BC	(86.8) 4260–4040 BC
AA-49323	117	Pit cut by Structure 4	<i>Quercus</i> sp charcoal	5305 ± 40	-26.6‰	(58.4) 4170–4040 BC	4250–3990 BC
AA-49324	87	Pit in Enclosure 2	Unidentified root charcoal	1960 ± 35	-26.1‰	0–80 AD	50 BC–130 AD
AA-49325	87	Pit in Enclosure 2	Unidentified root charcoal	1925 ± 35	-26.5‰	(60.5) 50–130 AD	(90.8) 0–140 AD
AA-49326	87	Pit in Enclosure 2	<i>Quercus</i> sp. charcoal	1915 ± 35	-25.1‰	(66.4) 55–130 AD	0–220 AD



■ Areas of heavy abrasion

ILLUS 16 Sherd of samian sherd 32

likely to have been a poor piece of work before it went into the ground.

The Roman pottery from post-Roman Structure 5 was in much poorer condition than the material from Roman-period contexts, with an average sherd weight of only 7.4g compared to 44.6g for the latter (even this low score owes much to the amphora sherd from one of the post-holes).

As can be seen from the high representation of South Spanish amphorae in the main quantification table (Table 6), there is nothing in the overall pottery assemblage to challenge the characterization of this site as one of the components of an extensive

military community (cf James 2001, 80–4; Evans 2001, 33). Any functional analysis of the vessels from Roman-period contexts at Howe Mire (Table 7) does not really add to this. While on the one hand, flagons/narrow-necked jars and mortaria were absent, the level of finewares was lower than the fairly high proportion seen at northern forts, *vici* and towns (Evans 1995, 111–12 and table 2) and it might be tempting to consider the evidence of the proportion of jars against dishes and bowls as making the present assemblage stand out somewhat from either forts or towns or basic rural sites (cf Evans 1995, figs 6 & 7), on the other hand the actual number of sherds is very low, reducing the reliability of the evidence in Table 7. The variation in the composition of the pottery assemblages from all the pieces of fieldwork, from 1879 onwards, in the Inveresk ditch-systems is discussed further below, as a better guide to the interpretation of these features in the (present) absence of good-quality quantified data.

Given the size of the present assemblage, it is not worth making any deductions from the balance of wares or forms in the present assemblage in terms of pottery supply and use, but they compare readily with the material published from the 1976–7 excavations within the lower-order settlement or small town at Inveresk (Thomas 1988a). Previous investigations in this particular part of the Inveresk Roman landscape have been largely confined to the ditch excavated in 1879 (Anon 1879, 271–4). Excavations by St Joseph

TABLE 5
Combined radiocarbon dates

<i>Dates Combined</i>	<i>Context</i>	<i>Description</i>	<i>Years BP</i>	<i>Calibrated 1 sigma</i>	<i>Calibrated 2 sigma</i>
AA-49313 AA-49314 AA-49315	118	Pit	1647 ± 21	AD 386–428	(92.8) AD 330–440
AA-49316 AA-49317 AA-49318	207	Oven cut by Enclosure 3	1917 ± 20	(39.1) AD 95–130	(89.6) AD 50–140
AA-49322 AA-49323	117	Pit cut by Structure 4	5312 ± 21	(55.1) 4130–4040 BC	4230–4040 BC
AA-49324 AA-49325 AA-49326	87	Pit in Enclosure 2	1933 ± 20	(43.4) AD 50–85	AD 20–130
AA-49324 AA-49325	87	Pit in Enclosure 2	1938 ± 17	(51.2) AD 50–85	AD 20–130
AA-49326 AA-49312	97	Post-hole, part of Structure 5			

TABLE 6
Quantified Roman pottery data (Roman-period contexts in bold)

<i>Context</i>	<i>Fabric common name & code</i>	<i>Sherd count</i>	<i>Weight (g)</i>	<i>Rim EVEs</i>	<i>Find no</i>
Enclosure 1 (035)	fine grey ware, bead-rim bowl	1	16	0.1	14
Enclosure 2 (081)	South Spanish amphora, BAT AM 1	9	431.6	–	21
Enclosure 2 (081)	sandy grey ware, jar (burnt)	2	12.7	0.05	21
Pit 086 within Enclosure 2 (087)	South Spanish amphora, BAT AM 1	8 + chips	287.4	–	20
Pit 086 within Enclosure 2 (087)	South Gaulish amphora, GAL AM 1	6	198.9	–	20
Pit 086 within Enclosure 2 (087)	sandy grey ware	10	170.6	–	20
Enclosure 5 (161)	South Spanish amphora, BAT AM 1	1	204.7	–	36
Enclosure 5 (161)	SE Dorset BB1, DOR BB1, cooking pot	8	153.7	–	36
Structure 1 (053)	fine buff ware, bowl	1	0.7	–	–
Structure 3 (19)	sandy grey ware	1	8.6	–	3
Structure 3 (19)	Inveresk Ware, bowl	1	8.3	–	3
Structure 4 (110)	South Spanish amphora, BAT AM 1	2	632.4	–	29
Structure 5 (100)	fine micaceous buff ware	1	4.7	–	–
Structure 5 (99)	fine micaceous buff ware	2	8.1	–	–
Structure 5 (98)	sandy grey ware (burnt)	2	7.2	–	25
Structure 5 (98)	South Spanish amphora, BAT AM 1	1	24.3	–	25
Field System Ditch B (028)	Montans samian, MON SA, f37 decorated bowl	1	45.2	–	32
Field System Ditch H (073)	Central Gaulish samian, LEZ SA 2, f31 plain bowl	1	18.1	0.05	24
Field System Ditch H (073)	Lower Rhineland colour-coat, KOL CC, beakers	2	34.9	–	24
Field System Ditch H (073)	South Spanish amphora, BAT AM 1	1	185.5	–	24
Field System Ditch H (073)	oxidised (fine), bowl (Inveresk Ware?)	2	117.1	–	24
Field System Ditch H (073)	SE Dorset, DOR BB1, cooking pot	2	79.7	–	24
Field System Ditch H (073)	SE Dorset, DOR BB1, dish	1	31.6	–	24
Ditch 158 (159)	Black-Burnished 2 (burnt)*	1	9.9	–	85
Unstratified	South Spanish amphora, BAT AM 1, Dressel 20 rim	1	173.6	0.3	16
Unstratified	South Spanish amphora, BAT AM 1	5	147.4	–	16
Unstratified	South Spanish amphora **	2	257.7	–	16
Unstratified	SE Dorset, DOR BB1	1	20	–	16
Unstratified	fine grey ware	2	40.6	–	16
Unstratified	sandy grey ware	1	5.8	–	16
Unstratified	South Spanish amphora, BAT AM 1	1	48	–	23
Unstratified	sandy grey ware	1	51.3	–	31
Totals		81	3436.3	0.5	

* not possible to identify to a particular Essex or Kent source

** a variant amphora fabric (orange body, cream outer margin and surface)

TABLE 7
Functional analysis of the Roman-period pottery

<i>Beakers</i>	<i>Jars</i>	<i>Bowls</i>	<i>Dishes</i>	<i>Amphorae</i>	<i>N =</i>
2	22	6	2	27	59 sherds
3.40%	37.30%	10.10%	3.40%	45.80%	
0	2	2	0	0	4 rims
0%	50%	50%	0%	0%	

in 1963–6 and APG in 1989 sadly remain unpublished in detail, though described as producing samian and coarsewares from the fills of the ditches (Wilson 1964, 155 [dating corrected by Wilson 1967, 176]; Leslie 2002b, 63, 65).

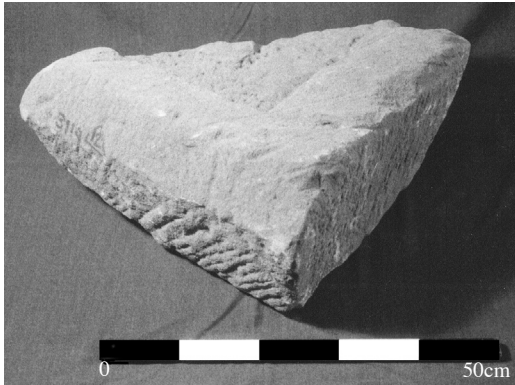
The 1879 pottery (Anon 1879, 268–71), now to be found within the material registered as National Museums of Scotland X.FR125–76 (briefly re-examined for this report as there is no prospect of a serious re-analysis), presented a contrast to the Howe Mire material. There was much Central Gaulish samian (f18/31, 18/31R, 31, 33, 37 and Curle 21), some East Gaulish samian (f37), Lower Rhineland roughcast beaker bodysherds, a large amount of BB1 and BB2 cooking-pots, bowls and dishes, along with fine greyware beakers, BB-copy jars, sandy grey ware everted-rim jars, Colchester buff ware and Northern/Scottish mortaria, Inveresk ware jars and a flagon, buff ware flagons and even a tazza rim and some shell-tempered bodysherds. Associated was a coin of Traian (in NMS X.FR 177). Preservation was much better than among the Howe Mire material; given the early date of the excavation, it is probable that South Spanish amphora bodysherds were found but not kept. The surmise of the original excavator (William Stevenson) that this was a distinct large deposit of pottery in a feature, rather than rubbish dumping or the remains of burials, seems correct.

What of the wider context, now that the basic desirability of reporting more work on non-military sites in North Britain (cf Evans & Willis 1997, 24–5) is beginning to be met? The presence of the iron spear-head in the terminal of field system ditch 078 and the group of nails in the fill of pit 86 (within Enclosure 2) ought to alert us to the possibilities of the study of structured deposition (cf Fulford 2001). This phenomenon is familiar from the continuing tradition of research into the pit-groups from outside Newstead Roman fort (eg Manning 1972, 243–6; Ross & Feachem 1976; the recent work is summarized in

Clarke 2000). In the case of comparable features to the Inveresk field-system, several papers by Adrian Chadwick have reminded us that ditches too need not be seen as essentially passive, static features; see his discussion of specific examples of the possible symbolic aspects of boundaries (see Chadwick 1997; 1999, esp 158–66).

The yield of material from Inveresk is in contrast – so far – to that from work in the area of the other good example of a field system at an Antonine fort in Scotland: Carriden. Minor excavations there in 1991 produced only a few heavily-abraded sherds from the ploughsoil (Dunwell 1996, 605). Elsewhere, excavations in 1999 of a set of ditches north of the Antonine Wall at Auchendavy recovered two small groups of Roman pottery: a kitchenware assemblage dominated by BB1, greywares and South Spanish amphora sherds (Evans, in Hastie 2003, 276–7). Only limited trial excavation was possible in the enclosure system at Rough Castle on the Antonine Wall (Máté 1996), so that it is not yet possible to write a comparative archaeology of the field systems of Antonine Scotland, despite their being a new arrival in the landscape of the second century AD.

However, it is worth returning to a more local perspective in pursuing a view of ditches like Field System Ditch H as more than simply the boundaries of functional spaces. Fieldwork in 2001 on another part of the cropmark complex at Inveresk (11 Inveresk Village Road) yielded a small assemblage largely of greywares and cream-slipped mortaria. In this ‘unbalanced’ group, Central Gaulish samian and South Spanish amphorae were curiously absent and Black-Burnished wares hardly present at all (material from CFA Archaeology Ltd site MOIN, recorded by the present writer). Pottery evidence for function and status is notoriously opaque, but when the widely-different groups from the 1879, 1999/2000 and 2001 excavations are coupled with the metalwork finds from the present project, it suggests strongly that



ILLUS 17 Plinth (scale 0.5m)



ILLUS 18 Armchair voussoir (scale 0.5m)

future publication and excavation programmes at Inveresk should give explanations of a non-prosaic nature (for context formation) due attention. It may also be the case that a contextual perspective will allow future researchers to discuss the known variability (in features and finds) as evidence for the construction and disuse of the Inveresk ditch-systems being the work of many contemporary groups of people, rather than – as currently seems to be assumed – constituting a single ‘planned’ complex. Recovery of greater volumes of material from larger samples of the field system features would aid this, along with analyses of the yield per cubic metre from excavated features.

ARCHITECTURAL STONE

Alexandra Croom

INTRODUCTION

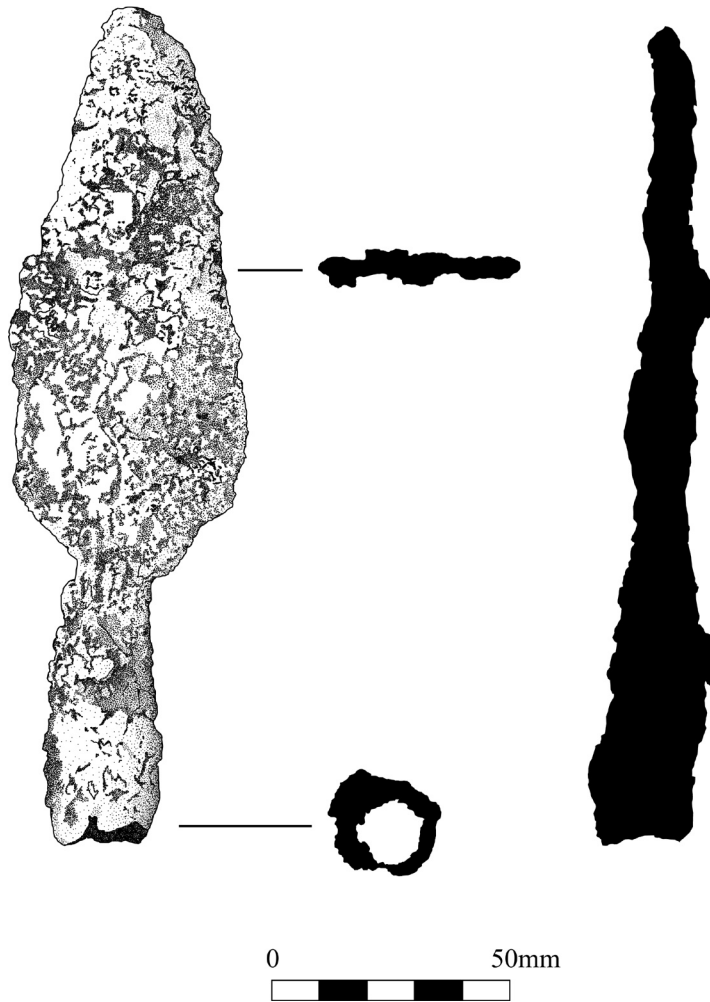
The excavations recovered 11 reused fragments of stone, of which seven were of interest: up to six armchair voussoirs and a plinth (illus 17, 18). The remainder were simply dressed stones which may have been of Roman origin. The plinth and five of the voussoirs were recovered from Structure 3 and its environs, while the sixth possible voussoir fragment was recovered from Structure 5. All the stones were of fine yellow sandstone except for the sixth voussoir which was in a coarser sandstone. A copy of the full specialist report is contained within the site archive.

PLINTH

Plinths were most commonly used as bases for altar stones. Although they often have decorated faces on all four sides, examples sometimes simply have elaboration on one face only, such as the plinth stones from Newstead (*CSIR 1.4*, no 46) and South Shields (Thornborrow 1959, 10, no 3); the chamfered edge on the Inveresk (illus 17) fragment may therefore represent the front of the plinth. The decoration usually takes the form of mouldings of varying sophistication as on examples from Wallsend and Carrawburgh (*RIB 1299*, *CSIR 1.6*, no 92), but simpler chamfered designs similar to this example are also known, including two from the three bases found in situ at South Shields (Thornborrow 1959, 10, 15), and two examples with their original altars from Croy Hill and Bar Hill (Keppie 1998, nos 29, 32).

ARMCHAIR VOUSSOIRS

Armchair voussoirs were used in vaults, such as bath houses, to reduce the weight of the roof and possibly also to provide heating ducts, and are known in both stone and tile (see Macdonald 1937, 385 for a reconstruction). The projections and recesses were used to hold either flat stones or tiles to form hollow ribs (MacDonald 1931, figs 6–8; Brodribb 1987, fig 19). There are fragments of five armchair voussoirs and a probable fragment from a sixth stone. Four of the stones from Structure 3 are of a similar design,



ILLUS 19 Spear-head

although with two different thicknesses (170mm and 115mm) (illus 18); the thinner ones have a slightly less noticeable taper to them. The fifth stone is of a different design without projecting wings, creating a very narrow ledge to support the flat element of the roof. As this stone is incomplete it is impossible to compare its dimensions to the other four stones, but it is probable it came from a separate vault and was indeed found in a separate structure.

The location of the bath-house associated with the fort at Inveresk is unknown, although two buildings with hypocausts have been found in the area (Thomas 1988a, fig 2, nos 2, 5; Thomas 1988b).

METALWORK

Andy Heald

A full copy of this report is available in the site archive. Measurements for the objects are taken from X-rays.

Spear-head (Ditch 1): Leaf-shaped spear-head of Manning Group II (1985a, 165–6) with no mid-rib (illus 19). Slightly open socket with no securing rivets. Although difficult to be sure whether such spears were used for throwing or thrusting the small size of this example suggests that it would have been

for throwing. The bent tip and the damage to one side show that it has been used. Spear-heads are known from many first/second-century AD sites such as Newstead, Roxburghshire (Curle 1911, pl XXXVI) and Strageath, Perthshire (Frere & Wilkes 1989, 140–1, fig 69). An unpublished example was found at Inveresk fort during grave digging (NMS X.FR 811). Overall length 178mm; Socket: length 58mm; maximum width 24mm; Blade: length 120mm; width 47mm. The spear-head has seen use although whether in battle is difficult to tell. Unlike the nails, its recovery from a ditch terminal may represent some form of structured deposition (see above).

Wallhook or masonry fitting (Pit within Enclosure 2): Square-sectioned bar with a spiked tang bent through 90° enabling it to be driven into a vertical surface, such as a wall or door, to act as a structural hook. These objects are common on many Roman sites across Britain and Europe (Manning 1985a, 129). Length 110mm; width 10mm.

Miscellaneous (Pit 116): Cylindrical iron object, possibly a collar. The uneven thickness and butt join show that the object was hammered and not cast. Height 36mm; width 32mm; thickness 7mm.

Nails: Seventy-one nails were recovered from pit 087, of which 41 were intact, and 21 lacked only the tip. The intact nails show three main clusters: most are between 45 and 69mm long with smaller clusters at 80–89mm and 105–29mm.

This range is typical on Roman sites (Manning 1985a, 134; 1985b, 289–92). Manning (1985b, 291) suggests that the main cluster, his Group E, would have been used to attach cladding to frames and would have been used in immense quantities in timber buildings. Although 31 of the nails are bent or twisted in various ways the majority of bends are slight and we cannot tell whether this is from use or removal. However, three nails are more informative, being clenched over through approximately 90°, during the construction of a timber structure. These nails indicate that wood 43mm, 65mm and 88mm thick had been used. Overall, the 71 nails from pit 087 are likely to have been buried as part of demolition debris. Some were clearly removed from a structure, while others were buried along with attached wood. These percentages may not reflect the original range of nails as the larger ones had considerable scrap value and may have been removed for reuse before they were discarded.

The assemblage clearly derives from a structure or building, presumably Structure 4. But what of their

burial in one pit? The recovery of nails in themselves is hardly surprising – they are the single most common metal find from Roman sites (Manning 1985a, 134). However, recently, more symbolic interpretations of nails and pits have been argued in place of purely functional explanations (eg Dungworth 1998). While these new approaches are welcome, large pit deposits on Roman sites are quite normal, indicative only of rubbish disposal. As argued above, this is the most likely explanation for the Inveresk evidence, although presumably both explanations could apply at the same time.

DISCUSSION

LATE MESOLITHIC (4500–4000 BC)

The combined dates from Context 116 indicate that the feature is either early Neolithic or indeed late Mesolithic. The presence of statistically significant earlier charcoal within the feature suggests that there may have been some earlier activity within the vicinity of the pit and this date fits more easily into the late Mesolithic. The metal recovered from the pit may derive from the cutting of the pit by Structure 4, but equally the charcoal may be intrusive; but either way it does indicate activity in the area at this period.

There is a limited spread of Mesolithic activity within East Lothian and Midlothian, for example the flints from under the rampart at Elginhaugh (Hanson 1987), the series of pits at Cramond (Reed 1995), the flint scatters at Torness (Mercer 1975), and most noticeably the recent discovery of a Mesolithic roundhouse at Dunbar, East Lothian, John Gooder (pers comm).

NEOLITHIC AND EARLY BRONZE AGE (4000–1500 BC)

Enclosure 5

The form and date of Enclosure 5 finds parallels in ditch-defined cursus monuments, (Brophy 1999, 119). At only 10m wide this is relatively smaller than most known examples (Brophy

1999). Enclosure 5 is also similar in shape and size to the related class of site, the so called mortuary enclosures (Harding & Barclay 1999, 1), for example Inchtuthil, Perthshire (Barclay & Maxwell 1991) and Littleour, Perthshire (Barclay & Maxwell 1998, 56). The segmented nature of Enclosure 5 is also echoed by Inchtuthil and other Scottish Neolithic linear monuments (Brophy 1999, 122). In the absence of artefacts or ecofacts from the enclosure and its associated features it is not possible to make any further comment on its nature.

However, the presence of Roman pottery in Context 160, assumed to be part of Enclosure 5, does not support the above interpretation, unless the sherds are intrusive. The presence of the two ditches (Contexts 158 and 152) which run perpendicular to the supposed line of Enclosure 5, may suggest an alternative explanation. The size and orientation of these ditches is similar to those of the Roman field system to the east. Neighbour (2002, 41) identified ditches similar to those from the field system at Wedderburn House, just to the north of Enclosure 5.

It is proposed that Enclosure 5 represents a conflation of features, some associated with another element of the Roman field system and some of Early Bronze Age date.

Context 42

Given the paucity of evidence very little can be said with regard to this feature: the Beaker was clearly broken prior to its insertion in the pit. However, whether the feature is simply a rubbish pit from some as yet undiscovered settlement or represents some form of ritual activity is unknown.

LATE BRONZE AGE TO IRON AGE
(1500 BC–AD 70)

Structure 6

The four post-holes of Structure 6 probably represent the remains of a roundhouse, but with only four surviving post-holes this interpretation

must be treated with caution. Assuming it is a roundhouse, the post-ring would have had an internal diameter of 6–7m and would presumably have had an external wall around 1m beyond it. Comparable structures of similar date were excavated at Myrehead, Falkirk (Barclay 1983).

ROMAN (AD 70–400)

Field system

The field system comprised both different sizes of enclosure and different sizes of boundary ditches and there was recutting of at least one of the ditches. This complexity was also identified in the excavations at Lewisvale Park (Leslie 2002b). It seems probable that it was not a static series of enclosures, but will have evolved over time.

The field system appears to subsume Enclosure 2 and this and its irregular character might indicate that it grew and expanded rather than represented a single planned field system. If, for the sake of argument, we assume that the field system had expanded this might imply either increasing agricultural production, perhaps to feed a growing population, or for increased trade. Alternatively, such growth may also be in response to the physical expansion of settlement around the fort and *vicus* over existing fields and the consequent need to bring new land under cultivation to maintain the current quantity of fields. However, this must all remain supposition based on a small sample!

The precise nature of the field system, whether arable or pastoral, is unclear. The presence of ditches and passages through the system may indicate the presence of stock, as a purely arable system does not need these. The individual fields may therefore reflect ownership pattern or management regimes. However, it is possible that certain fields contained crops, and that the ditches kept stock from these fields. Some supporting evidence for an arable function is drawn from the various scraps of pottery within the ditches (for example Ditches B, H,

Ditches 158 and 160), which may derive from rubbish spread as manure, although the material was not heavily abraded.

The apparent concentration of pottery in Ditch H, is puzzling but may be explained by the different orientation of Ditch H to the other ditches, which led to almost three times more of it being exposed and thus excavated than the other ditches.

It has been suggested that some of the elements associated with Enclosures 3 and 5 may represent further elements of the field system. Certainly Neighbour (2002, 41–2) identified similar ditches at Wedderburn House, which is just to the north of Enclosure 5. However, if these features do represent further enclosures of the field system, then there appears to have been a gap between these enclosures and those of the main group to the east of Carberry Road, as no further such ditches were found in the intervening excavation area.

The track in the middle of the field system has been suggested as the possible remains of a continuation of Dere Street to Inveresk (Maxwell 1984, 37–9). Dere Street is on average around 9m wide (Maxwell 1989, 78), while the gap between the two ditches is around 8m, although plough truncation may account for the difference. In addition, if the banks associated with the ditches are primarily connected with the enclosures then they would have lain within the 8m, and would have further restricted the width of the track. The track may in fact have been as small as 5–6m wide, if one allows 1m for two internal banks. There are examples of Roman roads of this size, for example Parkneuk Wood Roman Road, along the Gask Ridge, which was 5.8m wide (Wooliscott & Davies 2002). However, if one also takes into account that Hanson's work to the south (2002a) found no indication of a Roman road, it seems unlikely that the track is the remains of Dere Street. It seems more likely that the route of Dere Street lies under Carberry Road.

The presence of an entrance gap within the field system may simply be a means of gaining

access between fields, although this would imply that Enclosure 2 was within a field, which seems unlikely. It may be that the gate was positioned to allow access from Enclosure 2, although if a military origin is accepted for the enclosure (see below) it would seem unlikely that it would have had its own paddock. If it is accepted that Dere Street did run along Carberry Road, then the gate would have allowed access from the road, although Enclosure 2 would have blocked direct access from the road. This may imply that Enclosure 2 was inserted within the field system rather than the field system growing around an already extant Enclosure 2.

The presence of the spear-head within an entrance ditch terminal is interesting and could represent non-prosaic activity (Chadwick 1999, 158–66). However, the spear-head was recovered from the western end of the field system, which was associated with a greater quantity of Roman artefacts (see above), and its location might merely reflect the proximity of greater Roman activity.

Several known or suspected Roman field systems have been identified in Scotland, for example Rough Castle (Mate 1995), Croy (Hanson 1979), Carriden (Keppie et al 1995), and Castledykes (Maxwell & Wilson 1987, 30), Auchendavy, East Dunbartonshire (Hastie 2002), Strageath, Perth & Kinross (NMRS NN81NE 38). However, the Inveresk system is visible over a larger area and the individual fields are generally larger with sharper corners (Keppie et al 1995). The more regular layout of the fields finds some parallels at English *vici*, for example Newton Kyme (West Yorkshire or Ixworth, Suffolk (Sommer 1984, pls 23, 17).

Enclosure 1

The dating of Enclosure 1 is somewhat tenuous as the presence of an 'ankle breaker' cannot be taken to imply a Roman origin, as they are a basic outcome of cleaning a ditch and have been found on native sites, for example Cnoc a' Caistel, Alness and Hartburn, Northumberland

(Rideout 1987, 68; Jobey 1973, 17). Equally the single sherd of pottery from its fill may be intrusive. However, on the balance of probabilities it seems more likely to be Roman in origin than not.

Given the differing sizes of Context 40 and Context 34, as well as the different orientation of Context 40, it seems unlikely that it represented the north western side of Enclosure 1.

The absence of a north-western side of Enclosure 1 in the excavation area may be explained by four possibilities:

- i the ditch did exist but has been ploughed out;
- ii the ditch does exist but the excavation area ran through an entrance in the enclosure;
- iii the ditch did not exist, and Enclosure 1 represents a conflation of different cropmarks.

The depth of the eastern ditch (1.5m) of Enclosure 1 would appear to rule out option 1. If an entrance did exist it would have to be at least 8m wide, which is large but not unfeasibly so. However, the general absence of the putative north-western ditch in the cropmark evidence favours discounting option 2. It seems probable that option 3 is the most likely, but then what was Context 34?

One possible explanation is that Context 34 represents a boundary ditch and that it may have formed part of the field system, except that it appears very different in character and orientation to the other field system ditches and would have enclosed a much larger area.

First/second-century activity in the vicinity of Enclosure 2

Four statistically similar dates from Context 87 and 97 1960±35 BP (AA-49324), 1925±35 BP (AA-49325), 1915±35 BP (AA-49326) and 1955±35 BP (AA-49312) do not relate to their features (see below), but rather to older material subsequently incorporated into them, although one must treat the dates from Context 87 with

caution as they could derive from already old wood charcoal. However, the combination of four dates from two different features, may indicate that there was first- or early second-century activity in this area prior to the arrival of the Romans. Precisely how much earlier this activity was is unknown but it may be that the construction of Enclosure 2 and Structure 4 destroyed the remains an existing native structure. Such a process has been suggested at other Roman sites, for example Kinneil fortlet (Bailey & Cannel, 1996, 337) or Cardean Fort (Robertson 1973; see also Hanson & Macinnes 1991, 86), although at this site this must remain conjecture.

Enclosure 2 and Structure 4

The radiocarbon date from the piece of bone in a post-hole of Structure 5 which cut the ditch of Enclosure 2, implies that Enclosure 2 was of first century date and therefore presumably Flavian. However, the pottery from both the ditch and the pit within the enclosure are second century and therefore Antonine in date (see above). It therefore seems probable that the bone was already old when deposited in the post-hole, although this would imply the presence of as yet unidentified first-century activity in this area.

The relationship of Enclosure 2 to the field system is unclear. The cropmark evidence suggests that the field system respects Enclosure 2, but the potential blocking of the entrance to the field system by Enclosure 2 would suggest a later date for Enclosure 2.

The precise nature of Enclosure 2 is uncertain: only a limited proportion of Enclosure 2 survives and of this only a small proportion was excavated. It could be square or rectilinear and if Dere Street did run roughly along Carberry Road, it can only have been up to 20m across. It also seems clear that given Structure 4's off-centre location it may not have represented the most important or primary structure within the enclosure.

Given the military nature of the whole Inveresk complex, Enclosure 2 could represent

one of two installations: watch-towers or fortlets (see Wooliscroft 1993 and Hanson 1995, 507–12, for a fuller discussion of watch-towers and Maxwell 1984, 82–3 and Redhead et al 1989, 89–132 for a fuller discussion of fortlets). Structure 4's base of cobbling and clay resembles the base of certain watch towers, such as, Beattock Summit, South Lanarkshire (Maxwell 1976) and Garnhall, North Lanarkshire (Wooliscroft 1994, 1995). However, the absence of substantial post-holes rules this possibility out. Additionally, the close proximity of the enclosure to the fort suggests that it was too close to have served a meaningful additional function.

Is it possible that Enclosure 2 and associated features are not military installations at all but rather some form of domestic activity, along the side of the road? The ditch rich with finds found in 1878 (NMRS NT 37 SE 35) may represent similar activity, although the presence of the pine cone sculpture may indicate a funerary element to the activity (Hunter 2002b; C Wallace, pers comm). It may be that these features represent parts of some variant on roadside settlements common further south (Sommer 1984; Smith 1987; see also Hands 1998 & Leach 2001) or even simply expansion from the *vicus* along the road but possibly including both domestic and funerary elements?

The gap into the field systems may then be connected with this settlement, which may have had its origins in the putative first/second-century activity in the vicinity of Enclosure 2, and may even explain the apparent gap in the field systems to the west of Carberry Road; that is, there were no fields, as it was occupied by elements of no longer extant settlement, although this is clearly speculation. Accepting this suggestion and assuming that the activity was continuous from the 1878 ditch to Enclosure 2, this would imply that the activity (including the road) covered an area measuring around 250m long and up to 150m wide. Perhaps Structure 5 may represent a further phase of activity at the settlement following the abandonment of Enclosure 2's ditch.

What then was Structure 4's function? It is possible that Structure 4 could be seen as the base of a structure with sill beam walls, although such a structure would have been prone to flooding. Another possibility is that Structure 4 represented the foundation base of a mortuary monument within an enclosure, for example the Phase 2 walled cemetery at Watling Street, Southwark (Mackinder 2000, 14–19, 31, fig 23). Such a structure has been proposed for the Inveresk stone pine cone from the 1878 ditch (Hunter 2002b, 76). While there are no burials within Enclosure 2 there have been both undated cists (NMRS NT 37 SE 36) and two unlined inhumations (Carter 1990; NMRS NT 37 SE 92) recovered from the immediate environs of Enclosure 2. Additionally this area has been previously proposed as the location of putative second cemetery at Inveresk with the first being to the north of the fort (Breeze 2002, 3; Gallagher & Clarke 1993). Certainly Enclosure 2's location on the outskirts of the settlement along a road is in keeping with burial practice in Roman Britain (Wacher 2001, 272, Cleary 2000). It may also be possible that some of the stone in Structures 3 and 5, including a plinth base, derives from these putative structures rather than the fort.

The area of excavation was too small to come to a firm conclusion answer, but Enclosure 2 and Structure 4 are probably elements of a cemetery, presumably for soldiers from the fort or important individuals from the wider community. Certainly the slight knoll upon which they were located would have given them a commanding position in the valley.

The material within Context 87 appears to represent both rubbish and demolition material and it seems probable that this relates to Structure 4. Whether this activity represents the abandonment of the site or repair is unclear. Three phases of rebuild have been identified at the *vicus* (Bishop 2002b) and at least two and perhaps three phases have been identified in the fort (Leslie 2002a). The material within Context 87 could relate to any or none of these phases. While the pottery from this feature is Antonine

in date (see above), the combined dates from this feature 1960±35 BP (AA-49324), 1925±35 BP (AA-49325) and 1915±35 BP (AA-49326) (see above) would place the pit in the first or very early second century, which implies that Structure 4 was demolished or renovated prior to AD 140 and the traditional date for the Antonine invasion of Scotland. It seems most probable that the charcoal is older than the pottery and is itself contamination within the pit, especially because that Bishop (2002b) has suggested that the fort at Inveresk may have been founded later than is traditionally assumed. Presumably this contamination could have derived from the same source as that from Structure 5 (see above)

Enclosure 4

Earlier workers have interpreted Enclosure 4 as a temporary marching camp (Hanson 2002a, 53). And certainly the recently-excavated portion of the ditch compares favourably with other excavated sections (*ibid*). The absence of a north-eastern return within the excavation area suggests it is located either under Carberry Road or in the houses immediately to the west of Carberry Road, *contra* Bishop (2002a, *ibc*), which has Enclosure 3 forming the return. This would indicate that the east/west axis of the camp measured 450–500m long, more or less the same size as the north/south axis (Bishop 2002a, *ibc*), implying a square camp rather than the normal oblong shape (Welfare & Swan 1995, 12–13).

Only one feature was identified within Enclosure 4, a bipartite pit, filled with ash and charcoal, interpreted as a field oven. The combined dates recovered from this feature place the feature in the first or early second centuries AD. These features are frequently interpreted as cooking pits, a fire is placed at one end and then the cold ashes are raked into the other end. This would explain the thin-section (Ellis 2002) evidence that the burning within the feature was not *in situ*. Hanson (2002a) identified a number of such features further to

the south of the excavation area. However, it is not clear whether these are Roman or native features. Two such pits with first/second-century dates were identified at a native site at Melville Nurseries, Dalkeith (Raisen & Rees 1995, 40–1) and an example from Kintore, Aberdeenshire (Alexander 2000, 71) produced a date in the fourth to seventh centuries AD. Other examples from native sites include Dalladies, Kincardineshire (Watkins 1980a, 133), Dundee Technology Park (Gibson & Tavener, 1989, 86–7) and Newmills, Perthshire (Watkins 1980b, 182–3). Alexander (2000, 71) has suggested that that oven technology may have been introduced by the Romans and then copied by the local population. The nature and origin of the single example from these excavations is therefore unclear.

Assuming that the oven is related to Enclosure 4, the radiocarbon evidence does not strictly rule out an Antonine date but it makes a Flavian one more likely, thus contradicting Hanson's suggestion (2002a, 53) of an Antonine date for Enclosure 4.

Enclosure 3

As Enclosure 3 cuts the oven it must be early second-century in date, and therefore the enclosure could be Antonine or Severan, but it is not clear if the enclosure is of Roman construction. It appears that Enclosure 3 may have reused part of Enclosure 4 as its western boundary. The siting of a later smaller temporary marching camp within a larger earlier camp is a relatively common feature (Welfare & Swan 1995, 22–3) and appears to have happened at least twice within Enclosure 4 (Hanson 2002a, 55–7). However, where sites are reused the new camp tends to align roughly with the previous camp, which Enclosure 3 does not. Enclosure 3's ditch is considerably shallower than that of Enclosure 4: 1.75m wide and 0.60m deep compared with 3.0m wide and 1.3m deep. However, such small ditches do have parallels, for example the two temporary camps at

Dullatur, where the ditch was 1.8–2m wide and up to 1m deep (Lowe & Maloney 2000).

The western end of the enclosure appears to run parallel with the *cursus*, which appears to be quite a coincidence. Is it possible that Enclosure 3 is not an enclosure at all but a conflation of differing cropmark features? The ‘Enclosure 3’ ditch may make more sense as a further element of the field system, indeed the ditch appears to run roughly parallel to the lines of ditches 158 and 152. The ditch of Enclosure 4 may also have been utilized within the field system.

EARLY HISTORIC (AD 400–800)

Context 118

While the evidence from this feature is limited, it is suggested that it represents a rubbish pit or some form of storage pit from a settlement immediately outwith the excavation area.

UNDATED

Context 40

The precise nature of Context 40 is unclear, its curved shape appears to suggest that it forms an enclosure, although there is no return. Is it possible that Context 40 reused Context 34 to form a small univallate enclosure, Enclosure 1a? As there is no recut within Context 34 this must remain speculation.

Accepting, for the sake of argument, that Enclosure 1a exists, there are several examples of univallate ditched enclosures from East Lothian, two examples include St Germain's, Tranent (Watkins & Alexander 1998) and the primary element of Enclosure 1, Fishers Road East, Port Seton (Haselgrove & McCullagh 2000). Both of these enclosures date to the latter half of the first millennium BC. There appears to be a general abandonment of enclosure towards the end of the first millennium BC in south-east Scotland (Armit 1999). These arguments would appear to rule out a post-Roman date for

Enclosures 1a; however, there are examples of native enclosures associated with Roman pottery in East Lothian, for example West Prestonpans (Cook 2001) and the same is certainly true for southern Scotland in general, for example Woodend Bridge, Dumfriesshire (Banks 2000).

Structures 1 & 2

The field interpretation of Structures 1 and 2 was that they represented the outer walls of timber roundhouses. However, if this was the case the diameter of these circles would have been around 4–5m, which is much smaller than the ring-groove structures recovered from Hanson's excavations some 500m to the south-west (2002a, 59–60). In fact Structures 1 and 2 appear to be more rectilinear than circular.

Rectilinear slot-built structures find parallels in the Northumbrian phases of activity at Castle Park, Dunbar for example Buildings 3 and 4 (Perry 2000, 52–6). Similar structures, also dating to the Early Historic period have also been recovered at Garvald, South Lanarkshire (Cook 1998, 16–18; Cook 2002b) and Kintore, Aberdeenshire (Alexander 2000, 29–30). However, there are also rectilinear slot-built structures from the early Neolithic (Malone 2001, figs 21, 22, 23, 24).

Structure 3

Given that the precise nature of Structure 3 is unknown, further comment beyond that it reuses Roman stone and thus is either late Roman or post-Roman, is difficult. There are numerous native sites within East Lothian utilizing lined scooped areas, for example House 4 at Broxmouth (Hill 1982b, 174–5; see also Hill 1982a, 8–12) dated to the early centuries AD or the roughly contemporary St Germain's structures (Alexander & Watkins 1998, 220–3).

It is interesting to note that Structure 3 or something similar to it would correspond to James Wedderburn's 1783 unspecified description of areas of paving along the whole ridge of the Pinkie Burn (Camden 1806, iv, 48).

Structure 5

The precise nature and form of Structure 5, other than that it consisted of post-holes, is unclear. However, the post-holes could be interpreted as forming a rectilinear structure orientated roughly east-west and around 4.5m wide. The date from the Structure 5 post-hole Context 97 1955±35 BP (AA-49312) is first–second-century in date and is considered to relate to older material subsequently incorporated into the post-hole. The structure is certainly later than the second century enclosure which it cuts, but as it was not possible to elucidate if the ditch was deliberately backfilled or gradually over time, it is unknown if a year or 1,000 years had elapsed.

Reuse of Roman stone

A total of 11 reused Roman stones were recovered from Structures 3 and 5 and their environs. The fragments of armchair voussoirs presumably had been recovered from the base of a collapsed structure (see above) and would therefore have required some considerable effort to recover them and carry them over perhaps as much a kilometre. In the light of this can the use of the stone be considered purely utilitarian?

Several authors have argued that such reused Roman stone may represent a symbolic act linking the builders with Rome (Hingley 1992, 29; Coleman & Hunter 2002, 97). Eaton (2000, 134) suggests that Roman stone was reused in medieval churches to give the impression of longevity. Equally the presence of reused stone in the Structure 5 post-hole implies that any symbolic link (if one existed) need not be openly displayed.

CONCLUSION

In general the excavation area has witnessed dispersed activity. However, one area, the knoll to the east of Carberry Road, has evidence of activity across all the periods concerned: two phases in the late Mesolithic/Early Neolithic;

a phase around the first century and Roman activity in the second century. Interestingly the Inveresk cursus just stops short of this knoll, perhaps implying that it was respecting an existing structure on the knoll. The distribution demonstrates that archaeological truism that settlement clusters on free draining soils, which Inveresk appears to have been an example par excellence.

Although the excavation area lies immediately adjacent to a significant Neolithic cursus, the activity in this phase appears to be both limited and very truncated. This corresponds with evidence from Hanson's excavations within the cursus's interior which only revealed limited contemporary activity (2002a, 60–1). However, this may reflect millennia of agriculture and the small scale of the excavation area.

Only one feature can actually be assigned to the Late Bronze Age: Structure 6, a possible unenclosed roundhouse.

There are at least three Roman phases within the excavation area: the temporary camps and Enclosure 2 has at most two phases. While it is possible that some of the camps could be contemporary with the fort at least one, Enclosure 4, probably predates the Antonine occupation. The excavation has revealed that the field system was more extensive than previously thought and that it may have expanded from a southern core. Some of the fields may have been manured, implying some arable activity, although stock was probably also kept. There were structures on the fringe of the field system, perhaps on the road to the fort, possibly representing domestic or funerary structures.

There are also some indications of native or civilian settlement during this period, for example the tentative indications of pre-Roman activity around Enclosure 2, although this is speculative. If we move further into speculation Enclosure 1a and Structures 3 and 5 may date to this period. This activity includes both enclosed and unenclosed settlement, all of which both predate and post-date the Roman occupation.

The material from this excavation adds detail to this picture: the area around Inveresk was settled prior to the Antonine invasion, and such settlement may have been cleared to facilitate the new regime. It is possible that some form of peaceful coexistence occurred between native and Roman, as has been suggested at Elginhaugh, Dalkeith (Hanson 2002b) or Birnie, Elgin (Hunter 2000, 2002a and 2003) but there is no evidence for contemporary settlement at the site to allow exploration of this issue. Following the Roman abandonment of the fort, native settlement reoccupied the field system, this time utilizing the remains of the fort. This is in contrast to activity at Cramond where it has been suggested that the occupants abandoned the area for defended settlements (Holmes 2003, 156). Whether the natives were simply cleared off their land or whether they moved into the *vicus* and associated structures is unknown but clearly possible (see Breeze 1989, 230, for further discussion of this topic).

The final detectable phase of activity comprises a possible Early Historic rubbish pit Context 118, but again this indicates the reoccupation of former Roman territory by local people. Structures 3 and 5 may also date to this period.

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