

Excavations at Cultburn on the Roman Gask System, Perth & Kinross

D J Woolliscroft* & B Hoffmann†

with contributions by F C Wild, AC Finnegan & E M Barham

ABSTRACT

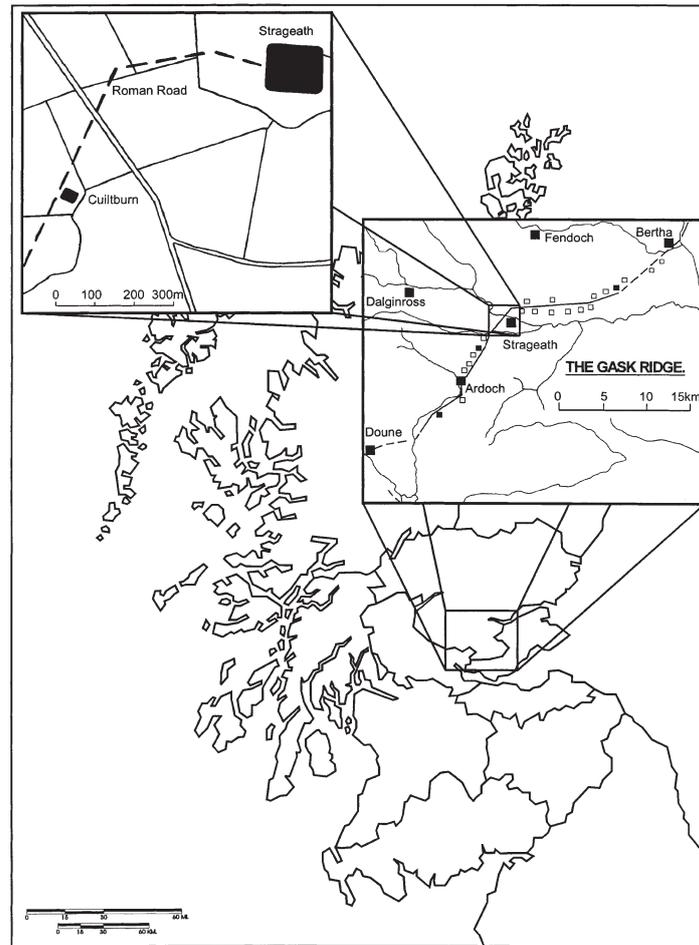
An excavation and geophysical survey were conducted by the Roman Gask Project on a rectangular enclosure, about 20 m square, beside the Roman road, at Cultburn, near the fort of Strageath. The site had been suspected of being a Roman fortlet but, although it yielded only Roman dating material, it did not appear to be military in nature.

THE SITE

Cultburn occupies a small plateau at NN 8924 1766, towards the south side of Strathearn (illus 1) in Perth & Kinross Council area (the former county of Perthshire). It enjoys a relatively sheltered position on the 45 m contour, with higher ground to its south, but it still commands extensive views in all directions except the SW. To its east the ground slopes down to a small stream about 20 m away and to its immediate west the Roman road from Ardoch to the Tay has been traced from the air as a scorch mark. The land is now heavily ploughed and shows no surface indications, but RCAHMS air photographs (eg PT/4692 (illus 2)) revealed an apparently rectangular ditched enclosure, with straight sides and sharply rounded corners, c 10 m to the east of, and parallel to, the Roman road. This enclosure lies almost exactly half a Roman mile via the road (720 m as opposed to 570 m as the crow flies) SW of the Roman fort of Strageath and it initially attracted the writers' attention as a possible fourth Gask series fortlet to add to the three already known at Glenbank, Kaims Castle and Midgate. On closer examination, however, its corners seemed rather too abrupt, and the site as a whole appeared rather too small for such an identification. Its eastern end is obscured on the air photographs by what appeared to be signs of land slippage, thus rendering an accurate E–W measurement impossible. But its apparent N–S length of c 25 m (over the ditch) makes it little more than half the size of Kaims Castle and Midgate, which measure 49 m (Christison 1901, 18–21) and c 45 m (Woolliscroft 1993, 302–7) respectively over their ditches. Glenbank is not directly comparable as it has a double ditch, but Cultburn is even slightly smaller than all three fortlets' lengths of c 27 m when measured over their ramparts. Moreover, none of the available air photographs showed any sign of an entrance break in the ditch and, although this could have been on the missing eastern side, the Gask

* Dept of Art History & Archaeology, University of Manchester, Manchester M13 9PL

† Dept of Classics, University College Dublin, Eire

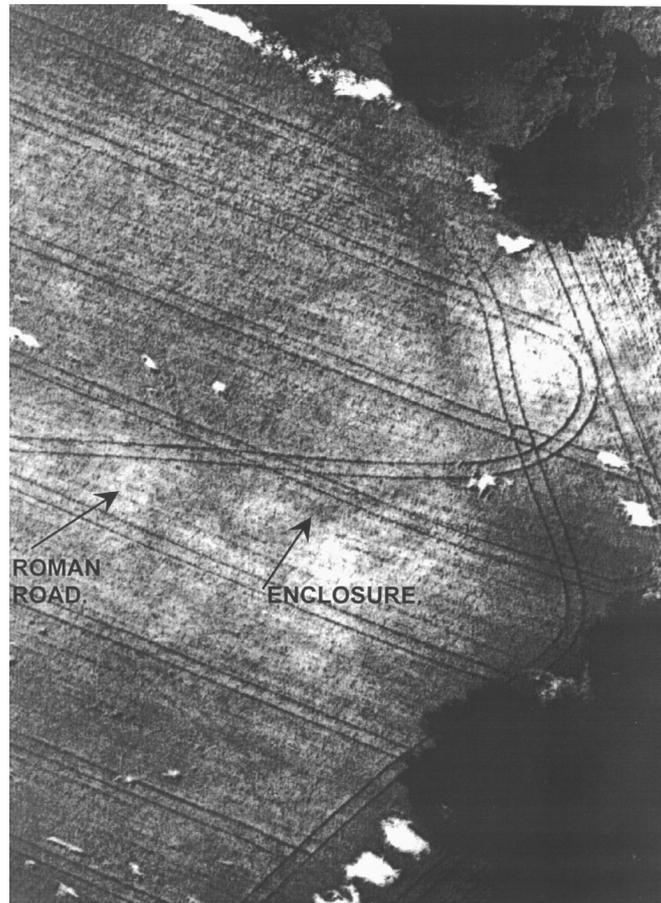


ILLUS 1 Location map

system's proven military installations all have their entrances facing the Roman road. Nevertheless, the enclosure's close association with the road did still suggest a Roman (or possibly post-Roman) date and the site appeared worthy of additional study.

THE RESISTIVITY SURVEY

In an attempt to examine the site's obscured eastern side, a resistivity survey was conducted in September 1995. The site's response was impaired by drought conditions, which had dried the soil to a considerable depth, but the results still provided useful data. The ditch appeared on the north, south and western sides as a c 2 m wide band of low resistance and the impression gained from the air, of sharply angled corners, was confirmed. Once again, there was no sign of an entrance break in any of the ditches and there was still no sign of an eastern ditch, although a broad area of low resistance across the site's entire eastern end might be another indication of land slippage. It thus remained impossible to measure the site's E-W length, although its N-S axis was confirmed at c 25 m. The rest of the site appeared to form three sides of a near perfect



ILLUS 2 Aerial photograph of the site (*Crown Copyright: Royal Commission on the Ancient and Historical Monuments of Scotland*)

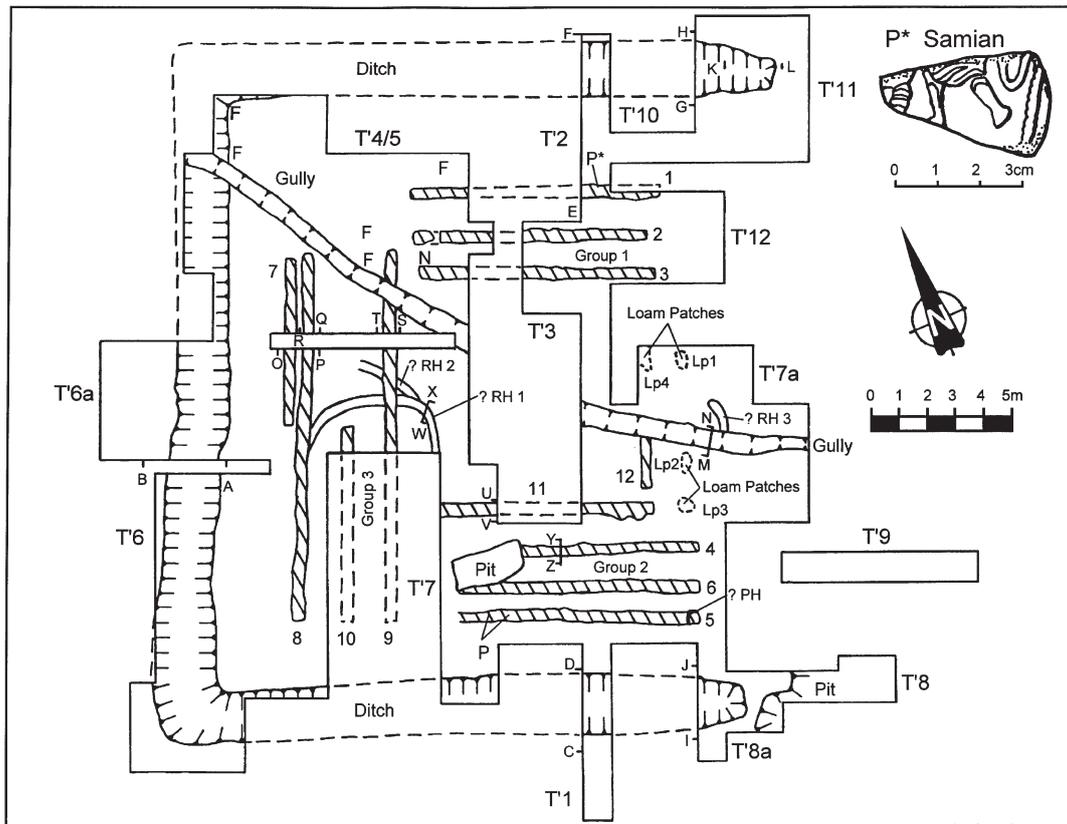
rectangle. No internal detail was visible and, although the area west of the enclosure showed a higher average resistance, no clear signs of the Roman road were detectable, which would suggest that its surface had been ploughed away.

THE EXCAVATIONS

The site was examined in two phases. The first consisted of a small test excavation conducted at the same time as the resistivity survey (T'1, T'2 & T'3 (illus 3)), which was designed to section the ditch and to see if any internal structures had survived the plough. As this succeeded in revealing reasonably well-preserved features, more extensive work was undertaken in 1997.

THE DITCH

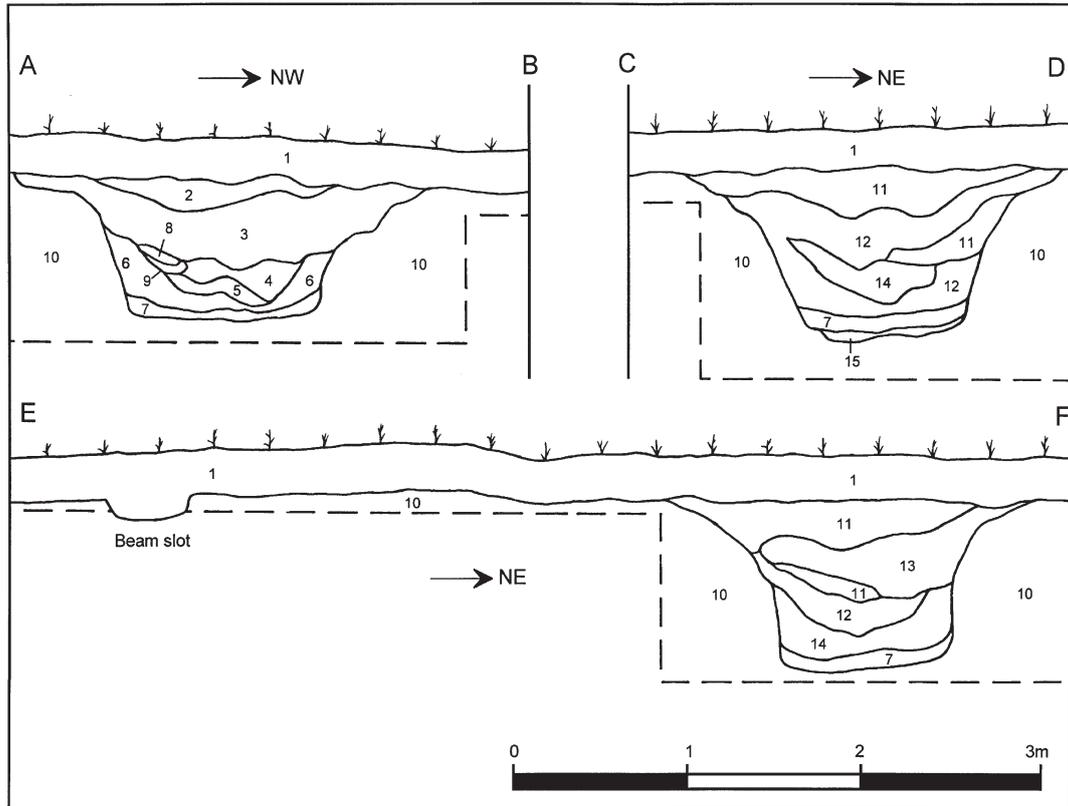
The ditch was sectioned in five places and proved in each case to have a very steep sided, flat-bottomed profile (illus 4 & 5), quite unlike the usual Roman military V-shape, although it was of similar width and



ILLUS 3 Site plan. Lp = loam patch (?post stance); RH = ?round house. Finds spots: F = flint fragment; N = nail; P = Roman pottery. Inset: Samian sherd P*

depth to an average Gask series fortlet or tower ditch. In addition, a substantial part of the ditch circuit was revealed in plan.

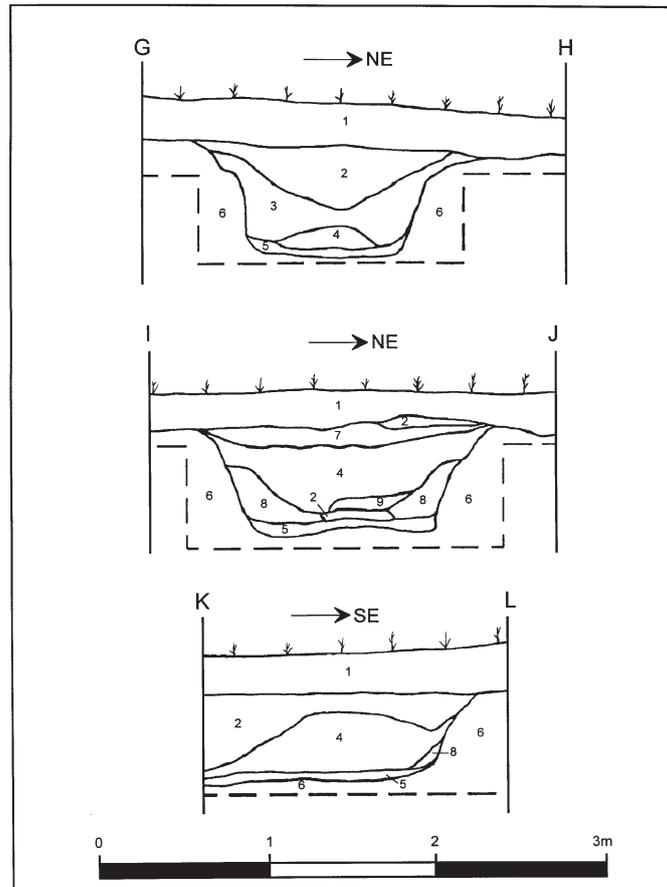
As already mentioned, both the resistivity survey and air photography failed to locate an eastern ditch but, as one was still assumed to exist, two trenches were dug (illus 3, T⁸ & T⁹) to search for it. Neither found any sign of such a ditch, however, despite the extension of trench 9 to a point 8 m east of the south ditch's easternmost resistivity response, which made it appear that the eastern end of the site had lain open. This was later confirmed when two further trenches (T^{8a} & T¹¹) located terminal butt ends to both the north and south ditches. These lay neatly in line, so that the two ditches were almost exactly the same length, and both ceased fairly abruptly at straight terminals, with only a little prior narrowing or shallowing (illus 5, sect K-L). Both butt ends were deliberately dug features not, as had been speculated, the result of the ditches being truncated by later land slippage and both had a slight inward facing dimple on their centre lines, making them very slightly convex in appearance. The SW corner and the inner face of the NW corner were also exposed and both proved to be even more abrupt and square in plan than had been anticipated. The ditch thus formed an open rectangle with sides of 24.4 m (N-S) by 21.5 m (E-W) externally (20.7 m by 19.2 m internally) and with corners of almost exactly 90 degrees. It had been anticipated that there might be an entrance break in the western ditch, facing the Roman road but, although the entire length of this ditch was exposed in plan, no such break was revealed, either here or elsewhere, and no sign of any timber bridge or walkway survived. The site would thus appear to have faced east, rather than west as had been assumed and, unless some form of light plank bridge once existed, whose shallow remains might have been easily



ILLUS 4 Ditch sections. Key to layers: 1 turf & topsoil; 2 grey/brown silty loam; 3. brown/grey silty loam; 4 grey/green silty loam; 5 orange sandy clay with turf fragments; 6 orange/brown sandy clay; 7 yellow/brown silty clay; 8 brown/grey silty clay; 9 grey/brown silty clay; 10 natural red/orange boulder clay; 11 red/brown loamy clay; 12 red/brown clay with pea gravel; 13 red/brown clay with loam; 14 brown loam with stones; grey silt

ploughed away, it would seem to have had no direct access to the known Roman road. However, we were informed by the farmer that a second stony band is encountered during ploughing a little to the east of the site, and it may be that the line of the road was adjusted at some point during its life-span; but, as there is no other evidence for such a change of line, the question is probably best left open.

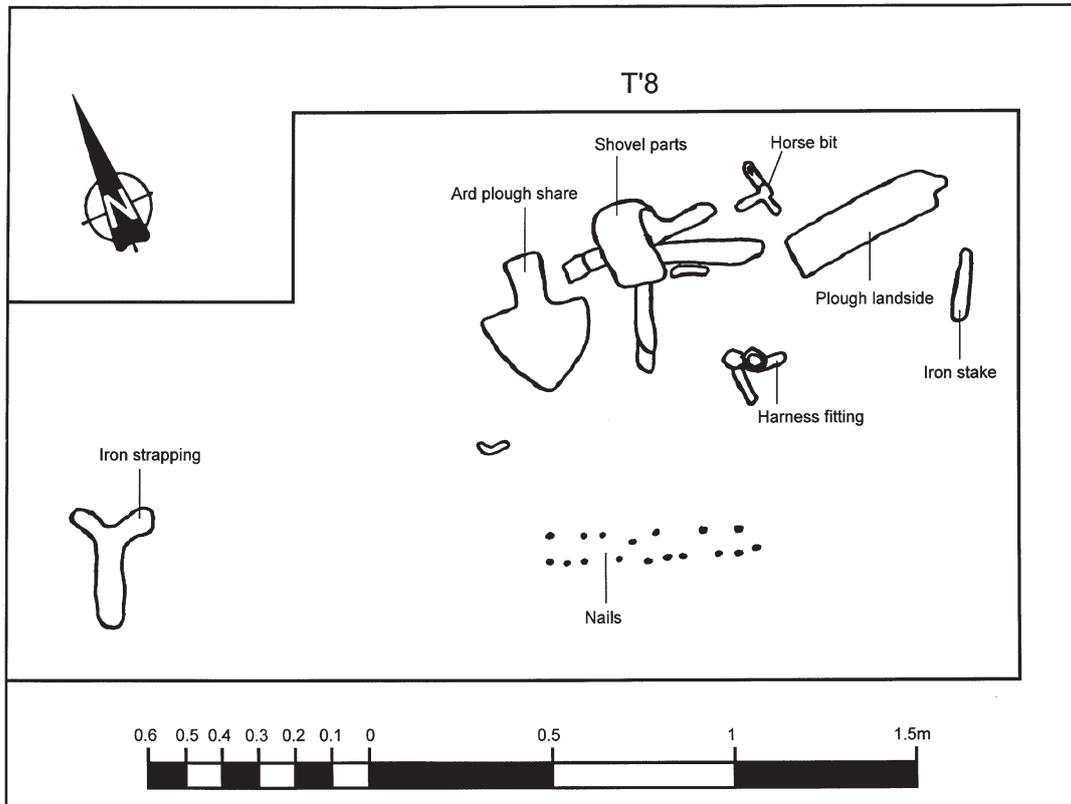
The ditch ranged in depth from 0.96 m to 0.76 m (illus 4, C–D & A–B) away from the butt ends, shallowing to 0.51 m (illus 5, K–L) in their immediate vicinity, and its width ranged from an average of 2.27 m (illus 4, C–D), to 1.7 m (illus 5, G–H) closer to the butt ends. In each excavated section, the lower levels proved to be damp but, although Dr S Ramsay of the University of Glasgow very kindly took samples for environmental analysis, there was no survival of pollen or other organic materials. Interestingly, however, this water retention may have been deliberate. In every section except one (illus 4, A–B) the ditch had been dug through water resistant glacial clay until it reached down to the top of a stratum of porous green sandstone, and soil scientist Mr J C C Romans (formerly of the Macaulay Land Use Research Institute) on a site visit suggested that this may have been done for drainage purposes, to allow the ditch to act as a linear sink hole, rather than (or as well as) with any eye to defence. Once the sections had been cleaned, however, it became apparent that all of the ditch bottoms had been coated with a thin (c 0.05 m) layer of a glutinous yellow/brown clay (illus 4, Layer 7 and illus 5, Layer 5) which did not appear to be native to the site. This clay must have been applied almost immediately after the ditch was dug, as only one of the excavated sections (illus 4, C–D, Layer 15) showed even the faintest trace of a silt layer between it and



ILLUS 5 Ditch sections. Key to layers: 1 turf & topsoil; 2 dark brown silty loam; 3 red/brown loam; 4 loam with stones; 5 yellow/brown silty clay; 6 natural orange/red boulder clay; 7 sandy brown loam; 8 degraded red sandstone; 9 pea gravel with stones

the ditch bottom, and it may have been intended as waterproofing. Unfortunately damage to the excavation's surveying equipment prevented the level of the ditch bottom being checked, but by eye the ditch bottom in all five sections appeared to be dug to approximately the same level, and the ditch may have been designed from the start to hold water.

The upper fill layers gave the impression that the ditch had either been kept scrupulously clean in use or that it had been open for only a relatively short time, for there was little above the yellow clay line that was obviously the result of natural silting. Section A-B (illus 4) produced a number of thin layers (4, 5, 6, 8 & 9) which appeared to represent weathering products of the topsoil and boulder clay subsoil, and section I-J (illus 5, Layer 2) contained a thin layer of silty loam but otherwise almost all of the upper fill layers were of clean loam or clayey deposits which seem best understood as man-made backfill (be it deliberate, or accidental filling due to agricultural activity). The only possible exceptions are layers 2 and 3 in section A-B (illus 4) and layer 2 in both of the NE butt end sections (illus 5, G-H & K-L) which did appear to have at least some silt content, but these cases might be explained by the sorting action of water percolating through the backfill after its deposition.



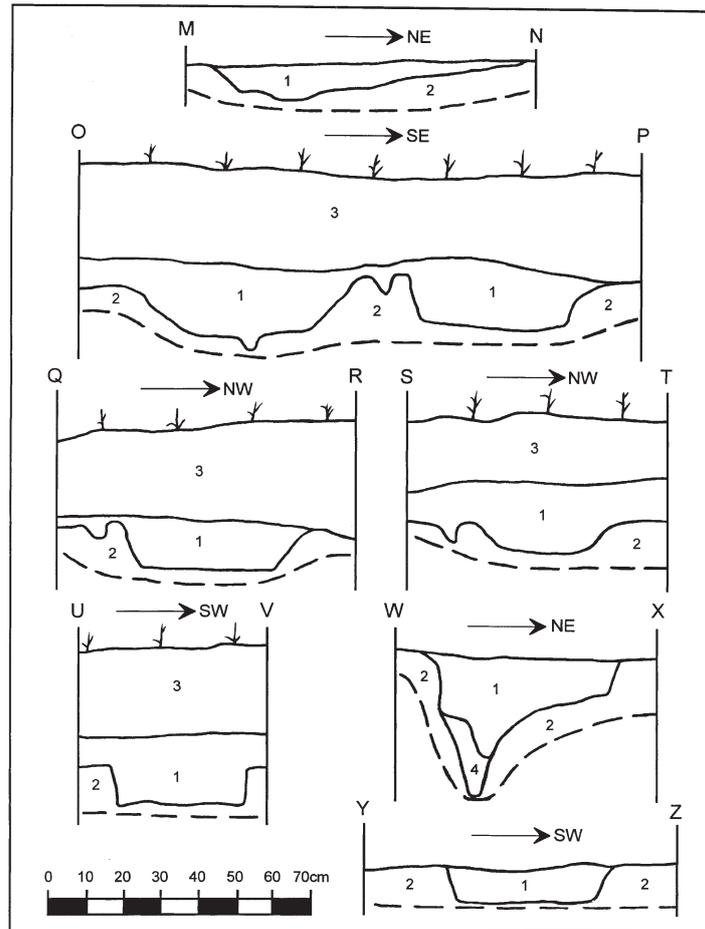
ILLUS 6 Trench (T) 8 Metal objects as found

No traces of palisades or other defensive structures were found, either inside or outside the ditch and no finds were located in this area except for a single sherd of Medieval green glaze pottery which was recovered from the interface between the ploughsoil and the top of the ditch fill in the SW corner.

THE PIT

Although no trace of an eastern ditch could be located, trench 8 did reveal part of a substantial pit c 0.5 m to the east of the SE ditch butt end (illus 3). On excavation this proved to contain a substantial stone dump, set in a clay and loam matrix which might have been a mixture of the spoil formed when the pit was originally dug. A few of the stones, which ranged up to head size, showed signs of wear and it is possible that they derived from the Roman road after its clearance from the field. Beneath this fill was a refuse deposit, set in a silty clay matrix, containing an 18th- or early 19th-century glass bottle and a number of iron objects (illus 6) of an agricultural nature, all of which were in remarkably good, if corroded condition. These were donated to the Scottish Agricultural Museum, after consultation with the land owner, and a report by E M Barham is included below.

No stratigraphic relationship between the pit and the main site ditch had survived the plough, despite their close proximity, so that it was not possible to determine the chronological sequence. The western end of the pit, like the ditch butt ends, had a very slightly convex face, but although of similar depth, the pit did not have the laid clay bottoming of the ditch. Time did not allow the full extent of the pit to be ascertained, but it did not reach as far as trench 9, which lay 2.5 m to the north.



ILLUS 7 Feature sections. Key to layers: 1 dark brown loam; 2 natural orange/red boulder clay; 3 turf & topsoil; 4 brown sandy loam

THE INTERIOR

No trace of a rampart was found inside the ditch and, although no original surface levels had survived anywhere in the interior, there were also no deposits in the ditch fills which suggested slighted, or ploughed-out rampart material. The entire internal area had suffered severe damage from ploughing and former tree roots, but this had not been enough to destroy a number of features which were discovered cut into the natural boulder clay.

The beam slot structures

The most prominent feature of the interior was a series of 12 long narrow slots (illus 3), all of which were roughly rectangular in section (illus 7), with neat square ends and relatively straight sides. They averaged 0.44 m wide and 0.15 m deep, and all contained an identical brown loam fill with occasional charcoal flecks. These seem best interpreted as beam slots and, although their bases were uneven in places, this was almost certainly the result of damage caused by the lifting of modern root crops, which had affected the entire site.

The possibility was raised that they might instead represent the remains of 'lazy bed' cultivation. This possibility was, however, emphatically dismissed by both the farmer and Mr W Findlay of the Scottish Agricultural Museum, Ingleston, on the grounds that the slots were cut too deeply into the subsoil and wrongly spaced, and that they were too neat, both in themselves and in their apparent layout in groups (see below). The writers would also still much prefer the original interpretation as sleeper trenches on the additional grounds that the enclosure ditch seems far too substantial to be the surrounding for what would have amounted to a vegetable garden, especially as so much of the enclosure's interior space remained unused. The features certainly appear to be very different to other, more definite, signs of lazy bedding elsewhere in the immediate vicinity (Barclay 1989, 60) and there were signs that at least some of the slots (notably 2, 3, 4 & 12) had later been dug into in a manner which was far more suggestive of timber beams being levered out than of vegetables being lifted.

The slots were occasionally closely accompanied by much smaller (c 50 mm wide and deep) indentations which ran parallel to them for short lengths (illus 7, sections O-P, Q-R & S-T). These were, for the most part, V-shaped in section but did not appear to be plough scars. They did, however, seem unsuited to holding even the smallest of timbers, and as they were also a little too far from the main slots to represent demolition features, such as spade marks, their presence could not be satisfactorily explained.

The slots formed three rectangular groupings which, if the features themselves have been correctly interpreted, would presumably represent three sleeper-beam founded buildings. The first lay in the NE part of the site and incorporated slots 1, 2 and 3 (illus 3). It lay parallel to and 3.17 m inside the north ditch and would have been 8.94 m long by 3.26 m wide. The three beam slots ran down the group's long axis and were reasonably parallel and evenly spaced, although the central slot (slot 2) was slightly (0.2 m) closer to slot 3 than to slot 1. There were no cross-slots, or posts cut through the bottom of the slots and the group showed no sign of associated structures, such as end or flanking posts, that might have marked entrance structures, verandas and the like.

The second group consisted of slots 4, 5 and 6 and lay 9.24 m to the south of group 1, 1.74 m inside the southern ditch. Its long axis again ran E-W, more or less parallel to both the ditch and to group 1, but this group extended 1.59 m further to the east, ending only 1.66 m short of the SE ditch butt end. It was slightly narrower than the first group, at 2.88 m, and narrowed still more towards the west to 2.65 m but, although it was at least 8.56 m long, its full length could not be ascertained, as the slots had been badly disturbed in the west by both ploughing and a later pit (see below). Once again, the central slot (slot 6) was slightly south of centre, being 0.23 m closer to slot 4 than to slot 5. There were few signs of associated structures, except for a shallow circular hole (0.23 m wide and 0.11 m deep) with stones around it, at the eastern end of slot 5, which may have been the remains of a stone-chocked post-hole.

As has already been stated, it had been assumed when the excavation began that the site faced west, towards the Roman road, and therefore a search was made for a third, N-S running, slot group in the eastern, supposedly rearward, part of the enclosure, which might have left the site with three buildings grouped around an open courtyard facing onto the road. In fact, no such structure existed, but a N-S running group was uncovered at the opposite, western, end of the site, offering a further hint that the entire site faced east. This western group lay at an almost exact right angle (91 degrees) to the northern and southern groups and overlapped their ends. It was, however, markedly off-centre within the ditches, at 5.45 m from the northern ditch and only 2.28 m from the southern, which left it overlapping almost the whole of group 2, but only about the southern third of group 1. It was rather larger than the other two groups, at 12.88 m long and up to 3.97 m wide, and also differed somewhat in the layout of its slots. The most notable difference was that the feature consisted of four slots (7, 8, 9 & 10) rather than three, not all of which ran its entire length. Slot 8 certainly did and slot 9 may also have done so, although time did not allow the excavation of its southern end. The westernmost slot (slot 7), however, was only 5.9 m long and began 0.16 m to the south of slots 8 and 9. The southern 6.98 m of the group feature was thus rather narrower, although at 3.61 m it was still slightly wider than the other two groups. Exactly in line with the southern end of slot 7, so that the feature was never more or less than three slots wide, slot 10 began (exactly half way between slots 8 and 9) and may have extended for the group's full remaining length, although again time did not allow the excavation of its southern end. This meant that, although the group ran approximately parallel

to the western ditch, its separation increased from 1.97 m to 2.73 m in the south, a tendency exacerbated by a slight westward kink in the west ditch's southern half. Again no associated structures were found, but it is noticeable that slot 7 is unusually close to slot 8, at 0.3 m, whereas the average slot spacing was in the order of 0.75 m. This caused speculation that it might represent the foundation for a step into a building founded on the remaining three slots, although its size, and the access problems caused by the absence of a crossing for the western ditch, make this seem unlikely.

Finally, although no slot group was found on the eastern side of the site, a rather different set of features was located. This consisted of two additional, rather narrower slots lying just north of slot group 2. The first of these, the 0.35 m wide slot 11, ran E–W, roughly parallel to slot 4 and at a distance only slightly greater (1.06 m as opposed to 0.9 m) than the spacing between slots 4 and 6. The slot did not, however, appear to be part of group 2 because, in addition to its lighter gauge, it ended 1.59 m further to the west than slot 4. It also continued for at least 0.6 m further west than the point to which any of the group 2 slots could be traced until, by the time it left the excavated area at the western end of trench 7, it was only 1.5 m from the projected line of slot 9 of group 3. Time did not allow the trench to be extended so that the possibility of a junction, or phasing between these two could be investigated and so, although the slot certainly did not project as far west as trench 6, its end point must otherwise remain unknown. Slot 11 showed particularly clear signs of having been dug into at some point and *illus 3* shows two particularly obvious cuts towards its SE corner.

To the north of slot 11 ran the much shorter and still narrower (0.3 m) slot 12. This feature ran N–S at a precise right angle to slot 11 and started exactly in line with its eastern end, albeit with a short (0.47 m) gap between the two. It was impossible to obtain an exact length for this slot as its northern end had been destroyed by a later gully (see below), but it must have been somewhere between the 1.85 m that still survived and the 2.55 m to the gully's northern lip.

The central part of the eastern side of the site also yielded four more features which may be associated with slots 11 and 12. These were four oval, vertically-sided, flat-bottomed, loam patches (Lp) cut into the natural boulder clay, c 0.45 m in diameter and only around 60 mm deep. These patches were so slight that they might normally have been taken to be slight hollows in the subsoil, perhaps points at which stones had been ploughed out, except that the entire site is remarkably stone free and the four taken together form a coherent pattern. For example, the first three (*illus 3*, Lp 1, 2 & 3) form a perfect straight line, 5.6 m long, which is itself almost exactly in line with the eastern ends of the group 2 slots. Moreover, Lp 3, the southernmost of the alignment, is exactly in line (at a distance of 0.91 m) with the eastern end of slot 11. Finally, the remaining patch, Lp 4, is exactly in line with the northern end of slot 12, to form an alignment which is itself more or less in line with the eastern ends of the group 1 slots. Lp 4 also lies at an exact right angle to a line drawn through Lps 3 to 1 and is the same distance E–W (again 0.91 m) from Lp 1 as Lp 2 is N–S from Lp 4. Indeed the only irregular spacing amongst the four was the gap between Lps 1 and 2, which is exactly three times this 0.91 m distance at 2.73 m. It is possible that one more of these features may have been destroyed by the same gully that removed the northern end of slot 12, but nothing could be found in the less damaged area between Lp 1 and the gully's northern lip. The identification of these features is not entirely certain, but it is possible that they could represent shallow post stances set directly onto the firm clay subsoil. This entire area has been so badly plough-damaged that they may originally have been at least 0.1 m deeper than they now survive, which would probably have been sufficient to locate non-, or low-load-bearing posts.

Sample lengths of all 12 slots were emptied of fill to provide sections and to study their morphology, but no post-holes or other features could be found penetrating them. Nor could any impressions of joints be seen in their sides or bottoms, all of which would suggest that, if these were beam slots, they contained only single substantial timbers. Nor was anything found to suggest that the beam groups had been modified, re-built or added to in any way. The site proved remarkably barren of small finds, apart from a very few pieces of modern pottery from the ploughsoil, but the slot fills did yield three stratified sherds of pottery. The first was a single fragment of mid-Flavian decorated Samian ware (see report by F C Wild below) impacted into the flat bottom of slot 1 (P* in *illus 3*); the other two were joining pieces of the same coarse-ware vessel and were found close together in the fill of slot 5 (P in *illus 3*). Dr V G Swan very kindly

examined the latter and reports that, although they are definitely Roman, they cannot be dated more closely. All traces of the original ground level and occupation deposits had been destroyed, but, there was a light scatter of gravel and small stones in and immediately around the beam groups, which might represent the tenuous remains of a ploughed-out metal surface.

Earlier and later features

In addition to the slot structures, two other phases of activity were revealed. The first was represented by three curved groove-like features, each c 0.4 m deep and 0.5 m wide. In each case the grooves had asymmetrical V sections (illus 7, section W–X) in which the inner face of the curve was near vertical, while the outer face sloped more gently in a convex curve with an average angle of c 45 degrees. Their fill was a brown loam similar to that found in the slots, but with no charcoal. The largest of these grooves, RH1 (illus 3), was sub-circular in form and arced through almost 180 degrees to give a projected diameter of c 4.5 m. The feature was cut by slots 8 and 9, which were thus clearly secondary. RH1 itself, however, cut an almost identical groove, RH2, which would suggest that there had been at least two structural periods on the site before the construction of the slot groups. The third groove feature, RH3, lay 13 m to the east of RH1, still just within the site's ditch system but, as no stratigraphic link could be established between it and either the slot groups or the other grooves, its place in the sequence remains uncertain. The excavated lengths of RH2 and 3 were relatively short, at 2.42 m and 1.20 m respectively, but their rates of curve were similar to that of RH1, so that if projected they would have formed sub-circles of much the same diameter. It might be doubted, therefore, whether their full original extent was uncovered. Certainly, such deeply-cut features cannot have been ploughed out, but it was surprisingly difficult to see the tops of any of the features in this central part of the site as the tree root damage was at its worst here. Unfortunately, the grooves were only discovered towards the end of the excavation when time did not allow for the cutting of sections on their projected lines and the matter must therefore remain open.

No dateable material was found stratified within any of the groove features, but a thin scatter of small flint chips was found a little to the north of RH1 and 2, in the NW quadrant of the interior of the enclosure (find spots marked 'F' in illus 3), but as these appear to be Mesolithic in date (see report by A C Finnegan below), they seem unlikely to be connected.

In addition to the grooves, two obviously later features were uncovered. The first, as already mentioned, was a shallow, saucer-sectioned gully (illus 3 and illus 7, M–N), c 0.77 m wide and 0.1 m deep, which ran diagonally across the northern half of the site from SE to NW. The feature cut through RH3 and slots 9 and 12 as well as through the tree root damage, and is thus the latest feature so far mentioned. It also post-dated the filling of the enclosure ditch, whose upper fill it cut just south of the NW corner, thus providing the only stratigraphic link with the interior to have survived the plough. The gully was initially interpreted as a drainage feature, but it eventually proved to run through slot 12, the site's highest point, which meant that it ran first up hill and then down again. As it left the eastern end of trench 7a it was, however, lined up with the northern post of a modern field gate, c 20 m further to the east, which was located slightly south of centre on the eastern side of the field. As the other gates on the farm are all located in field corners, this might suggest that the feature represents an old field boundary, although not within the memory of the present farmer, and the 18th century estate map, mentioned below, although showing a radically different field system in the vicinity, also shows no boundary at that point.

The final internal feature was a roughly rectangular and square-sectioned pit, 2.42 m long and 1.06 m wide (illus 3). The pit cut slots 4 and 6 and contained the entire skeleton of a less than fully grown bovine. The state of the bones suggested that they had been in the ground for less than a century and so the burial probably represents a relatively modern farm casualty but, again, it was not deposited within the memory of the present farmer.

THE FINDS

THE SAMIAN WARE

F C Wild

The fragment (see inset P* in illus 3) is Form 37, South Gaulish, showing panel decoration with gladiators (Oswald 1936–7, 1016 & 1017) and part of a corner tendril. The gladiators are probably those that occur on a bowl of form 37 in the London Museum with the mould-signature of Memor. An identical panel, with gladiators and a corner tendril, is present in the Pompeii Hoard (Atkinson 1914, 59) attributed to the style of Mommo, whose work shows links with that of Memor. As well as occurring in the Pompeii Hoard of AD 79, pieces in the style of these potters are present at Agricolan foundations in Scotland, such as Inchtuthil and Cardean. In this context, a Flavian date seems certain.

THE FLINTS

A C Finnegan

Find 1: From ploughsoil. Core rejuvenation flake. Displays evidence for direct percussion and a regular knapping sequence.

Find 5: From ploughsoil. Primary irregular conical flake. No striking platform evident. Human activity not conclusive.

Find 19: From ploughsoil. Flint retouch flake.

Find 22: From ditch backfill. Secondary regular flint flake probably produced by direct percussion. It is broken which, with the other fragments, suggests plough damage.

Find 26: Secondary irregular flint flake. Possible debitage.

It is likely that there would be a greater concentration of lithics if the search was extended beyond the confines of the enclosure, since finds 1, 19 and 22 are debitage and suggest some degree of (probably Mesolithic) knapping in the area. The damage seen on these few flints is to be expected on a site so heavily ploughed.

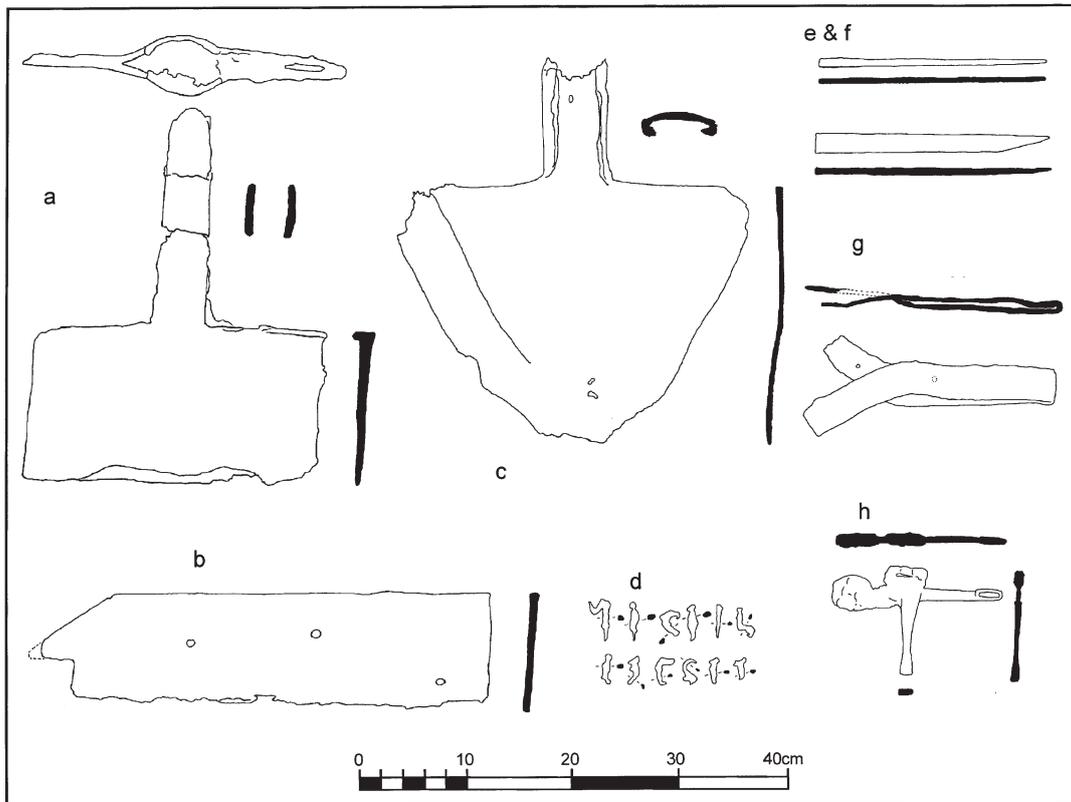
THE IRON AGRICULTURAL IMPLEMENTS FROM TRENCH 8

E M Barham

It was established through X-radiography of the objects by the Conservation and Analytical Research Department of the National Museums of Scotland that substantial quantities of metal remained within the corrosion products and that their shape was still clear beneath the corrosion. The objects were therefore air-abraded to remove their thick layers of mud, earth and corrosion products. They proved to comprise (illus 8) an 'ard' ploughshare, a swing plough landside, a spade head, two rows of nails from a probable wooden object no longer extant, some unidentified iron strapping with rivet holes, a piece from a pony bit and two short stakes. It was concluded from the associated finds in the context, and the nature of the agricultural finds, that the majority dated from between the 17th and 19th centuries.

The removal of the mud and corrosion products revealed a number of features on the surface of the objects which assisted with their interpretation. The plough was of an appropriate shape for an 'ard' plough which threw up soil to either side of the roughly symmetrical share. The presence of an ard share is unusual, as they were generally intended for shallow tillage, and are characteristic of semi-arid zones in the Mediterranean and Middle East where only a light, frequent stirring of the relatively dry soil is needed (White 1967). It was therefore surmised (Findlay, pers comm) that it could have been imported and was possibly earlier than the other pieces. A ridge along one edge of the share suggested that it had been mended along one side by attaching a new strip of metal to replace a previously blunted edge.

The spade head had a flange on one side of the handle socket on which the foot would be supported during use, which had been fitted to tabs of metal which were part of the blade. It was suggested (Findlay,



ILLUS 8 Trench 8 iron finds (after conservation). a spade; b plough landside; c ard plough share; d nails; e & f two short stakes; g iron strapping with rivet holes; h horse bit

pers comm) that there may have been a similar flange on the opposite side of the shaft, now missing. The object was a common squared spade shape, and could only be dated to the 18th or 19th century.

The landside had three large rivet holes to attach it to the back of a plough, probably a 'swing plough' used in Britain in the 17th to 19th centuries; an early plough with no wheel support. The landside would have been attached to the wooden plough structure supporting the curved mouldboard on the other side, that turned the sods. Thus the landside prevented the structural wood from being worn away (Vince 1982).

The function of the nailed object, the stakes and the strapping were unclear, but air abrasion showed that the strapping was folded over on itself, and the strip had originally followed a shallow curve. The small size of the bit fitting suggested that it was likely to have been used on a pony.

After cleaning, the objects were treated by a conservator at the NMS to inhibit further corrosion. The chloride salts introduced into the metal through burial were removed as far as possible using an alkaline sulphite desalination treatment (Pearson 1987). The objects were then coated with a layer of corrosion inhibitor and packed, physically supported in archive quality materials within a sealed, desiccated environment. They will subsequently be stored at the Scottish Agricultural Museum.

CONCLUSIONS

Despite near total excavation, many aspects of the site remain something of a mystery for, although a similar ditch system is known from a first century sanctuary at Limoges in France

(Maniquet 1999, 11), this lacks Cuiltburn's internal features and the writers have yet to find even a reasonably close parallel. The earliest phase of activity, the groove structures, would appear to be consistent with an interpretation as round houses. Their asymmetrical V profiles would be well suited to a role as construction slots for relatively light, post- or stake-founded structures, as the timbers could have been stood against their vertical side and then fixed into position by backfilling. The fact that none of the features could be followed around a complete circle might argue against such an identification but, given the difficult conditions, it is probably not conclusive. Certainly similar features are common elsewhere on prehistoric and particularly Iron Age sites and two almost identical grooves were found recently underlying the Roman Gask series tower of Mains of Huntingtower (Woolliscroft, forthcoming).

The slot structures are still more problematic, as is their relationship with the ditch. It does appear probable that these two belong together, since the slots would seem to have been laid out in such close conformity with the line of the ditch; however, in the absence of corroborative stratigraphy, this cannot be proven, for it is noteworthy that all of the earlier grooves also fit within the ditch circuit, as do any full circles projected from the lines of RH1 and 3. A circle projected from RH2 would probably just have clipped the western ditch but, as no such circle was traced it remains possible that the ditch belonged initially with the 'round houses' and that the slots were then laid out to fit inside an existing enclosure. All that can be said in such circumstances is that if this was the case, the slots must have followed the groove features fairly quickly, since the ditch does not appear to have been open for very long, unless of course the ditch had already been backfilled by the time the slots were dug, their apparent relationship being merely coincidental.

As for the slots themselves, they do seem best interpreted as beam slots, in which case the three groups would have acted as foundations for three rectangular structures arranged around a central courtyard, 8.5 m (E-W) by 7.7 m (N-S) in size. These would presumably have taken the form of three timber buildings: one long one, running N-S in the west, with two shorter ones running E-W and possibly acting as wings. The possibility was, however, mooted on site that the structures might instead have been stack-stands or similar agricultural platforms, constructed much like their modern equivalents, which are frequently founded on railway sleepers. The only piece of, albeit tenuous, evidence which might settle this issue comes from the two extra slots and the pattern of loam patches in the east, for Slot 12 and the possible post stances look as if they might have been intended as a fourth side to complete the overall group of structures. We have already seen that there is a marked regularity in their layout, and the possibility exists that they might have formed some sort of porticoed timber facade. This would certainly be consistent with the lack of load-bearing capacity inherent in the shallow stances (if this interpretation of the loam patches is correct), and the long triple spacing in the centre, between loam patches (Lp) 1 and 2 might well have been a deliberate entrance break; however, such a structure would clearly be much more suited as the frontage for a group of buildings than for a collection of stack stands. This would leave only slot 11 to explain, but the neat 90 degree junction between it and slot 12, albeit with a gap, would suggest that the two were closely related. The slot might then represent the foundation for a walkway or veranda outside the building founded on slot group 2. This can only be speculation, however, and as careful searching failed to locate a similar slot outside group 1, the inner area may not have been entirely symmetrical. Only a relatively small part of the central courtyard was excavated, but nothing, for example any sign of a well, was found to suggest that it ever been anything other than an open space.

As already stated, the fact that the slots appear to have been dug into (? for the removal of the beams) and the ditch backfilled while still relatively clear of silt, would suggest that the site

was deliberately demolished after only a relatively brief occupation. The fate of the demolition material is, however, unknown, thanks again to the destruction of the original surface, but it is interesting to note that there were no traces of fire anywhere on the site, even in the ditch-bottoms where such material should have been protected, the only exception being a few small flecks of charcoal in the slot fills.

The date and function of this phase of activity must again remain in doubt and, as the writers are not aware of any close parallels from which inferences may be drawn, we are wholly reliant on the meagre evidence of the site itself. The presence of Samian and other Roman pottery, and the site's rectangular layout and close relationship with the Roman road might be suggestive, and would certainly seem to rule out a pre-Roman date. Indeed, for many years, the entire Gask tower and fortlet system has been dated on no stronger evidence (Robertson 1974; Hanson & Friell 1995), albeit these were more obviously Roman site types. However, although no finds from any other period were found associated with the slot structures, the contexts in which the site's few sherds were found make their testimony rather less than conclusive. The Samian, for example, was found right at the bottom of slot 1, impacted into the natural boulder clay in a manner which suggests that it had actually underlain the beam. It seems probable, therefore, that the sherd was either already present on the site when the structure was built, perhaps deriving from the round houses (which might thus be the true Roman period features) or that its parent vessel was broken while the site was under construction. Whichever is the case, it was probably incorporated accidentally, as a single sherd seems rather a poor votive deposit. The two coarseware fragments derive from the fill of slot 5, which was almost indistinguishable from the modern ploughsoil; these sherds could therefore also have been incorporated accidentally, this time when the site was demolished. The only counter-argument would be that no Roman pottery was discovered unstratified in the topsoil, despite the fact that this was all removed by hand, which means that the site would appear to lack the reservoir of material that would have been necessary if residual pottery was to have been incorporated into later buildings. Even so, it is still possible to envisage a post-Roman date, presumably at a time in which the road was still usable, and it is not particularly difficult to think of post-Roman contexts into which the site might be fitted. For example, it has been suggested to the writers by Mr G B Bailey that the internal structures might be reminiscent of the sheep houses for which there was something of a vogue in Scotland in the early to mid 19th century (Callander 1978). However, this particular identification seems unlikely since, so far as is known, these structures were usually of stone and did not sit within enclosure ditches. It could, of course, be argued that the ditch might have been specifically dug to confine animals, but again this appears unlikely, partly because of its open-ended design and partly because of its symmetry, for one might have expected a ditch with this purpose to have had a shallower sloping inner face so that any corralled animal entering it could escape back into the interior, rather than being trapped in the ditch itself. Nevertheless, an 18th- or 19th-century date does bring up two further issues. The first is the fact that Stobie's 1783 map of Perthshire shows a now vanished farm called Cuilt of Strageath very close to the site and just to the west of the, still firmly marked, Roman road. This farm had disappeared by the time of the first Ordnance Survey maps, but a remarkably accurate estate map drawn shortly after the post-1745 annexations (Scottish Record Office RHP 3412) shows what might be the steading around 65 m to the SW, against the modern field boundary; if a number of features visible on RCAHMS air photograph PT/8611 reflect its remains, it may in fact have been closer still at around 30–40 m away. The two sites might thus be connected. The second issue is the relationship between the bulk of the site and the trench 8 plough pit, which seems itself to be 18th or early 19th century in date (see finds report). The pit and the enclosure ditch just fail to intersect, which means that there is no

stratigraphy to connect them, but this begs the obvious question of whether or not this was coincidental. For the pit might have been actively respecting a ditch that was still in use, especially when we recall that its western end has the same slightly convex face as the ditch butt ends. It is also, to digress for a moment, something of a mystery why anyone would have dumped so much metalwork in this pit at a time when iron was still an expensive resource and when a number of local farmers have informed us that, even within living memory, there was more than one smithy within easy walking distance where the metal could have been recycled.

There do, however, seem to be two powerful counter-arguments to any suggestion of a relatively recent date for the slot structures, for not only were there very few post-Roman but pre-20th-century finds in the plough soil, and none in stratified contexts, but the beam-slots had also been badly disturbed by the action of tree roots and, to judge from the available map evidence, the site has been under cultivation, and so clear of woodland, for at least 250 years. In fact, it seems likely that only the discovery of a close (and better dated) parallel site will be able to answer these chronological questions. The writers believed that such a site had been found, in the form of a very similar air photo target, about 1 km to the west at Dornock, on the north bank of the Earn. Excavations in 1998 (Hoffmann & Davies, forthcoming) found that the resemblance was superficial, however, and this second enclosure was dated firmly to the Victorian era.

Finally, even if Cuilburn does prove to date to the Roman period, the fact that it lies on a frontier line does not necessarily mean that it is military in nature, or even that it is a Roman site in the strictest sense of the word, since civilian or native activity might also be possible, perhaps with some connection to the nearby fort at Strageath. The apparent precision and near perfect symmetry with which the site was laid out and the evidence for systematic demolition may all point to the military, especially as beam slot construction is a typical Roman military building technique. The enclosure's relatively short life span would make most sense in the context of the Flavian occupation of the area, which would also provide the best fit with the Samian pottery sherd. But, as has already been said, the site does not conform to any known Roman installation design. It is possible that the presence of bedrock fairly close to the surface may have affected the ditch diggers, but this seems unlikely to have been enough to cause the army to abandon its usual V-shaped section, especially since the near 1 m depth actually dug is about average for the smaller military sites (towers and fortlets) in the Gask area. Besides, Roman towers are known with entirely rock cut ditches (often cut through much harder stone), which still at least attempt the usual profile (eg Woolliscroft & Swain 1991, fig 5). Flat-bottomed ditches are known from a few Roman military sites, for example the Antonine Wall fort of Mumrills (Steer 1961, 90ff, fig 3) and in a more extreme form from the Hadrian's Wall Vallum, but they are far more common around civilian and non-military official structures. This is especially telling when we consider the fact that the Cuilburn enclosure ditch seems to have been the site's only means of defence, since no rampart or palisade was located. It might be argued that all trace of a simple earth rampart could have been completely ploughed away, although given the state of survival of the beam-slots, the much deeper post holes from a palisade should have been detectable. However, no turf deposits had been dug or ploughed into the ditch and there is in any case little room for anything but the very slightest of ramparts between any of the three slot groups and the ditch; this is particularly so as at least some space would have been needed for a berm, given turf construction and the very steep sided profile of the ditch. It is true that the stake holes for a light fence might easily have been missed, but even this would represent only minimal protection when we consider that at least some of the Roman watchtowers in this area felt the need (unusually) for internal ramparts; for the moment, therefore, it is probably safest to regard the site as having no internal defences.

Sadly, this is about as far as the current evidence will allow us to go. The beam slot period seems not to be prehistoric and although it could still be Medieval or later, its life story, meticulous layout and finds make it seem rather more likely to be Roman. If so, we might have a contribution to the vanishingly small amount of evidence for Roman civilian activity this far north, or possibly an official structure or a most unusual military site. One thing is certain, however, for whatever its date and whether or not it formed part of the Gask Frontier, Cuilburn does seem to provide us with a wholly new site type.

No subsequent structures were uncovered that cannot be dated with relative confidence to the modern era. Indeed, almost no sign of any later non-agricultural use was uncovered, except for the plentiful evidence, from mature tree root damage, that the area had been densely wooded at some point prior to the start of modern cultivation. The ploughsoil was also unusually free of artificial material, even modern glass and pottery, and the only non-modern post-Roman artefacts of any kind found were two sherds of late-Medieval green glazed pottery: one, as already mentioned, from the top of the ditch fill at the SW corner of the enclosure, and a second which was found on the surface outside the excavated area at the modern field boundary, c 20 m south of the site ditch.

ACKNOWLEDGEMENTS

The work was carried out by volunteers and students of the Universities of Manchester, Edinburgh, Glasgow, Minnesota, Lund, Sheffield, Cambridge and Durham, under the direction of the first author, with the kind permission of the farmer, Mr J Guthrie. The writers would like to thank the Roman Research Trust for their generous funding, Dr S Ramsay for examining samples from the site for environmental evidence, Mr J C C Romans for his advice on the site's soils, Mr W Findlay of the Scottish Agricultural Museum, Ingleston for his advice on the iron finds, Mrs V Wills for locating old estate records and Dr V G Swan for her comments on the Roman coarse-ware. The Roman Gask Project is sponsored by the Perth and Kinross Heritage Trust.

REFERENCES

- Atkinson, D 1914 'A Hoard of Samian Ware From Pompeii', *J Roman Studies*, 4 (1914), 27–64.
- Barclay, G J 1989 'The cultivation remains beneath the North Mains, Strathallan, barrow', *Proc Soc Antiq Scot*, 119 (1989), 59–61.
- Callander, R C 1978 'Sheep Houses in Midlothian County', *Vernacular Building*, 12 (1978), 3–13.
- Christison, D J 1901 'Excavations undertaken by the Society of Antiquaries of Scotland of earthworks adjoining the "Roman Road" between Ardoch and Dupplin Perthshire', *Proc Soc Antiq Scot*, 35 (1900–1), 16–43.
- Hanson, W S & Friell, J G P 1995 'Westerton: a Roman Watchtower on the Gask Frontier', *Proc Soc Antiq Scot*, 125 (1995), 499–520.
- Hoffmann, B & Davies, M H forthcoming 'Dornock'.
- Maniquet, C 1999 'Limoges: Un Sanctuaire Antique Redécouvert', *Archéologia*, 335 (1999), 10–12.
- Oswald, F 1936–7 *Index of Figure-Types on Terra Sigillata*. Liverpool.
- Pearson, C 1987 *Conservation of Marine Archaeological Objects*. London.
- Robertson, A S 1974 'Roman "Signal Stations" on the Gask Ridge', *Trans Perthshire Soc Natur Sci*, (Special Issue), 14–29.
- Steer, K A 1961 'Excavations at Mumrills Roman Fort, 1958–60', *Proc Soc Antiq Scot*, 94 (1960–1), 86–132.

Vince, J 1982 *Old Farms an illustrated guide*. London.

White, K D 1967 *Agricultural Implements of the Roman World*. Cambridge.

Woolliscroft, D J 1993 'Signalling and the design of the Gask Ridge System', *Proc Soc Antiq Scot*, 123 (1993), 291–314.

Woolliscroft, D J forthcoming 'The Gask System tower at Mains of Huntingtower, Perthshire'.

Woolliscroft, D J & Swain, S A M 1991 'The Roman "Signal" Tower at Johnson's Plain Cumbria', *Trans Cumberland Westmorland Antiq Archaeol Soc*, 91 (1991), 19–30.