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Ambleside Roman Fort, Cumbria

Trevor Pearson

SURVEY REPORT

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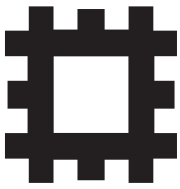

AMBLESIDE ROMAN FORT, CUMBRIA

Archaeological Investigation Report Series AI/2/1998

NMR No: NY 30 SE 5
NGR: NY 3725 0340
SAM No: CUMBRIA 7

Surveyed January 1998
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INTRODUCTION

In January 1998 the York office of the RCHME undertook a 1:1000 scale earthwork survey of Borrans Field, Ambleside. The survey was requested and partly funded by English Heritage (Historic Properties North) to assist in the management and display of the remains within the guardianship area of the Roman fort situated in Borrans Field (NMR No. NY 30 SE 5). Because earthworks are evident outside the Guardianship area, the survey area was designed to include up to the northern boundary of Borrans Field, where part of an associated settlement or *vicus* (NMR No. NY 30 SE 17) is located, and part of Borrans Park to the east. The area of the fort and civil settlement is scheduled (English Heritage National Scheduled Monument (RSM) No. 13567). Borrans Field is owned by the National Trust, and Borrans Park is in the ownership of South Lakeland District Council. Aerial photographs in the NMR collections were also inspected at the same time as the earthwork survey but they did not reveal any archaeological features that were not already visible on the ground.

The fort covers an area of 1.7ha and was extensively excavated between 1913 and 1920 (Haverfield and Collingwood 1914; Collingwood 1915; 1916 and 1921). The excavated remains of the fort's two granaries *(horrea)*, headquarters building *(principia)*, commandant's house *(praetorium*) and south gate are open to view behind a post and wire fence and a second fence encloses the remains of the east gate. The fort is thought to have been occupied by a garrison of 500 infantry (a *cohors quingenaria*) between the first and fourth centuries AD (Gentry 1976, 57 and Potter 1979, 357). Modern scholarship identifies the fort with the name *GALAVA* which appears in the 10th iter of the Antonine Itinerary (Rivet and Smith 1979, 365). The name is thought to mean ‘vigorous stream’ which is apt given the riverine setting of the site. The civil settlement has not been excavated to the same extent as the fort but the remains of buildings, roads and areas of waterlogged organic remains have been unearthed to the north and east of the fort. In addition, the cropmark of a possible Roman camp was observed to the north of the fort in 1955 centred on NY 3722 0365 (NMR No. NY 30 SE 55), (Blake 1955). Ambleside fort and the adjacent area is therefore of prime importance in understanding the Roman period in the Lake District.

GEOLOGY, TOPOGRAPHY AND LAND-USE

The fort is situated at NY 3725 0340, on the north shore of Lake Windermere (Fig 1). It is an area of mountainous scenery, with the rugged peaks formed by the Ordovician Borrowdale Volcanic Group to the north of the site giving way to gentler hills of Silurian sedimentary rocks to the south (Taylor 1971, Fig. 4). The site enjoys an open aspect to the south down Lake Windermere and to the north along the valley bottom of the River Rothay. The high ground west of the site is punctuated by the valley of the River Brathay but to the east there is unbroken hillside, a shoulder of which dominates the east side of the fort.

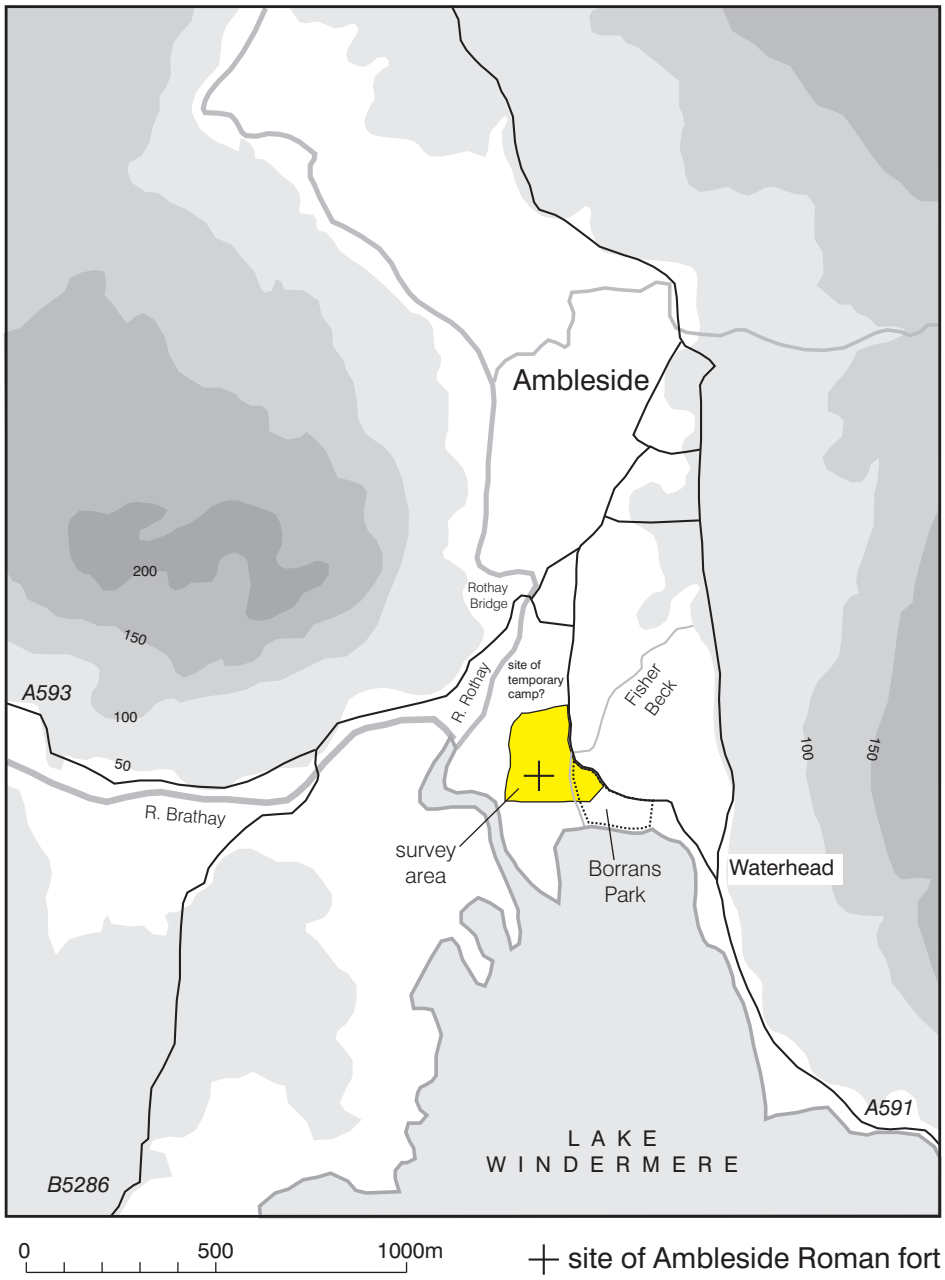

Figure 1
Site location
(contours in metres)

Although barely two metres above the current level of the lake, the fort nevertheless occupies a commanding position on a sand and gravel platform 150m east of the confluence of the Rivers Rothay and Brathay and 250m north of the point where the River Brathay enters Lake Windermere. To the south of the fort the ground falls away to marsh bordering the lake edge and to the west are further areas of marsh on the margins of the River Brathay and along a relict channel of the River Rothay. The closest the River Rothay approaches the site today is 150m from the north-west corner of the fort but an earlier course brought it much closer as the marsh-filled channel at the foot of the west rampart testifies.

Borrans Field rises gently to the north of the fort and the ground is dominated by a single rock outcrop up to 5m high with other smaller outcrops scattered to its north and east. The shoulder of high ground to the east of the fort comes to within 100m of the east rampart and, declining in height, makes a prominent north-south ridge in Borrans Park. A stream called the Fisher Beck traverses the low lying ground between this ridge and the east side of the fort, flowing into Lake Windermere along an underground culvert.

Borrans Field is on the west side of Borrans Road which links the small settlement of Waterhead, lying to the south-east, with the town of Ambleside one kilometre to the north. The field is bounded by drystone walls 1m-1.6m high on all sides except on the south where the fragmentary remains of a demolished wall mark the boundary. Borrans Field is under grass and publically accessible. Apart from the fenced off excavated areas the rest of the field is used as grazing. A two-storey stone barn in the north-east corner of the field is the only building on the site and is dated by a small plaque on its east side to 1831. Borrans Park is laid out with tarmac paths and lawns and is maintained by the local council as a public amenity.

HISTORY OF RESEARCH

The earliest description of Ambleside Roman fort is that of Camden in the late 16th century (reproduced in Nicolson and Burn 1777, 4). The site is described as "the carcas (as it were) of an ancient city, with large ruins of walls; and without the walls, the rubbish of old buildings in many places". The fort is described as being oblong with a ditch and rampart and several paved ways are mentioned leading to it. The impresssion gained from Camden's account is that the fort and civilian settlement were then in a good state of preservation. Indeed, the visibility of surface remains probably accounts for the origin of the name Borrans Field since Borrans "sometimes refers to heaps or scatters of stones at archaeological sites" (Field 1993, 214).

Around the year 1690 Thomas Machell, the rector of Kirby Thore in Westmorland recorded a fragmentary inscription on a stone which had come from the fort. It was built into the fabric of a "field house" called Bowsrigg-Hoghouse about a mile away, testifying to the fact that the site was undergoing piecemeal destruction for building stone (Collingwood and Wright 1965, 254). The inscription is now lost. Doubtless because of this stone robbing, visitors to the site in the 18th and 19th centuries remarked on the paucity of the visible remains (Garlick 1975, 29). Stone was also taken from the site "to provide the housewives of Ambleside with scouring sand in the days before proprietary brands of cleaning powder and soap pads" (Rollinson 1967, 36-7).

The Fort

The fort has been more extensively explored than the civil settlement, with the earliest recorded excavation taking place a few years prior to 1846 (Anon 1846, 395). The excavator, Mr Beck, uncovered a Roman inscription whilst digging in the vicinity of the south-east corner tower. The inscription was subsequently lost but is thought to be the same as that discovered in October 1962 during building work at Wanlass Howe, 200m to the east of the fort (Burkett 1965, 86-7). It commemorates the death of a records clerk, Flavius Romanus, "killed in the fort by the enemy". Subsequent excavators in the area of the south-east corner tower attributed the poor quality of the remains to the activities of Mr Beck (Haverfield and Collingwood 1914, 7). Between 1859-61 the Ambleside area was surveyed by the Ordnance Survey who depict the rectangular outline of the Roman fort in a conventional manner on the 1:2500 scale map published about 1862 (Ordnance Survey c1862).

The purchase of Borrans Field by the National Trust in 1913 was the impetus for R.G. Collingwood to begin a major campaign of excavations which lasted for four seasons (1913, 1914, 1915 and 1920). He made the unexpected discovery that there had been two successive forts on the site (Fig 2) and that the visible remains largely belong to the second fort (Haverfield and Collingwood 1914 and Collingwood 1915, 1916 and 1921).

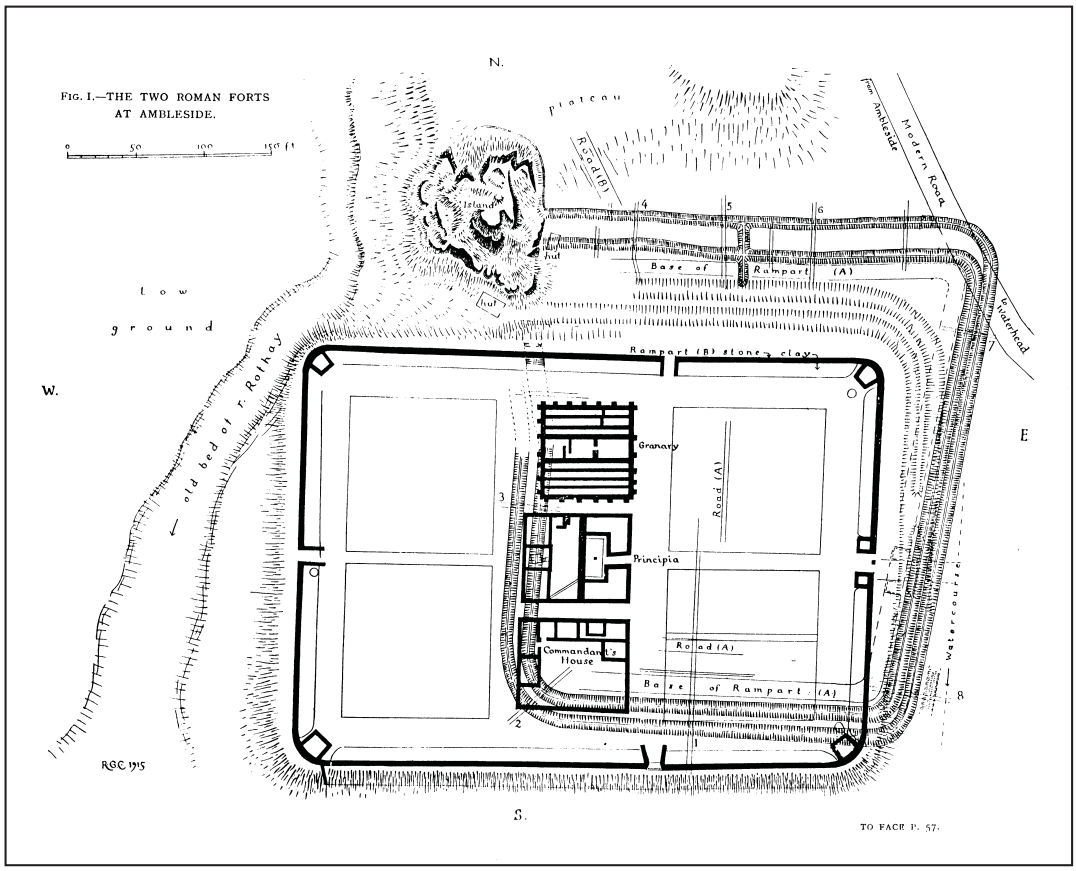

Figure 2 Collingwood's plan of the site (Collingwood 1916, fig 1)

The first fort lay beneath the east half of the second. The only traces which Collingwood found of it above ground were a short section of the north ditch and signs of subsidence in the *principia* and *praetorium* where the west and south ditches passed underneath (Collingwood 1916, 57 and 61-2). The paucity of surface traces was compensated for by the widespread remains of burnt structures belonging to the first fort which came to light sealed below deposits of clay and gravel laid down prior to the construction of its replacement (Collingwood 1916, 60). In an attempt to define the limits of the first fort, Collingwood dug a series of eight trenches to try and follow the line of the ditch (Collingwood 1916, 65-84). The plan of the fort which emerged turned out to be somewhat unusual in that its sides were different lengths and it incorporated a rock outcrop at its north-west corner. The defences consisted of a pair of ditches separated by a central baulk which varied in width from less than a metre on the east to 5m on the north. To provide additional strength as well as dry foundations, the fort was sited on a natural ridge of sand and gravel.

The first fort was replaced by one laid out on more regular lines following the typical playing-card plan of a Roman fort. The only irregularity in the plan of the second fort is that no ditches were cut on the south and west sides which Collingwood presumed was because of the security offered by Lake Windermere and the River Rothay (Haverfield and Collingwood 1914, 436). Collingwood excavated all four gates and corner towers belonging to the second fort and trenched along the line of the wall (Collingwood 1915, 4-17). He cut sections

across the north and east ditches (Haverfield and Collingwood 1914, 438-41) and inside the defences dug trenches within the *praetentura* and *retentura* (Collingwood 1915, 31 and 1916, 59-60) and excavated the central range of buildings. Of these, he fully exposed the *principia* and *horrea* and partially unearthed the *praetorium.*

Collingwood uncovered a great deal of information about the layout of the second fort. The fort faced east with the east gate being the *porta praetoria.* This was identified as the main gate because it possessed a double entrance when the others were only single. The east half of the fort straddled the same natural ridge as had its predecessor, but this was raised in height and extended to the west by the dumping of material to provide a dry, level base for the whole of the second fort (Collingwood 1916, 86-7). There were two ditches on the north and east sides separated by a central baulk totalling 15 foot across (4.5m) whilst on the south side, where there was apparently no ditch, Collingwood unearthed a 20 foot (6m) wide deposit of cobbles and water-worn gravel on the outer face of the rampart which he thought was intended to protect the fort from wave damage from the lake (Collingwood 1915, 8). Also on the south side of the fort Collingwood mapped the remains of what he took to be a Roman quay on the lake edge. (Haverfield and Collingwood 1914, 448-52). It consisted of a roughly constructed stone wall one course high and 270 feet (82m) long.

Inside the fort, he found that the central range of buildings had been constructed of stone but other buildings, such as the barrack blocks, were built of timber (Collingwood 1915, 31). The remains showed signs of plough damage and Collingwood was informed that the site had been ploughed about 40 years previously (Haverfield and Collingwood 1914, 436).

Collingwood's published account of the two forts has largely been accepted without question by subsequent commentators on the site. For example, the entry on the fort which appeared in the RCHME Westmorland Inventory published in 1936 is entirely based on Collingwood's description and reproduces his published plan (RCHME 1936, 1-3). In an introduction to the volume, R.E.M. Wheeler commented on the unconventional use of a rocky knoll by the first fort, attributing it to "a piece of bold adaptiveness" tacitly accepting Collingwood's conclusion that the outcrop was incorporated in the defences (RCHME 1936, xlv).

The only aspect of Collingwood's account which has come in for major revision is his dating of the first fort to Agricola's campaign of 79 AD. It is now generally accepted that Agricola's forces did not penetrate into the heart of the Lake District and that the fort at Ambleside was probably first established during the closing years of the first century (Potter 1979, 356-358). However modern scholarship still differs as to the circumstances of the fort's foundation. Higham groups Ambleside with Hardknott, Troutbeck, Caermote and Watercrook as forts designed to fence in a hostile population inhabiting the lakeland massif (Higham 1986, 174).

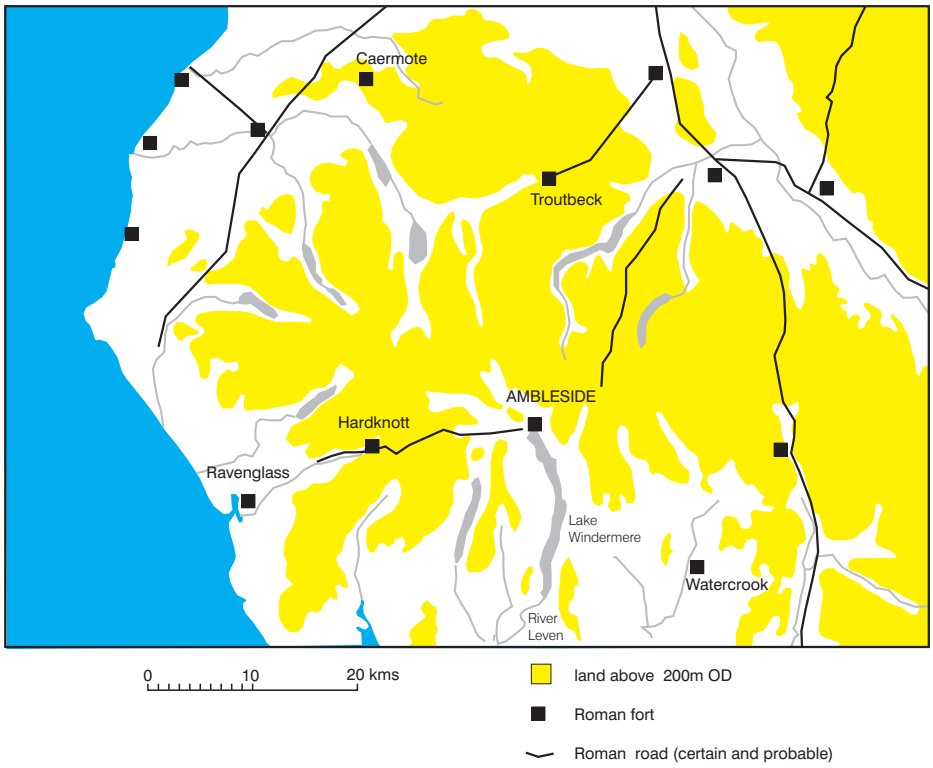

Figure 3
Roman sites and possible routes in the vicinity of Ambleside

Alternatively, Breeze favours Collingwood's suggestion that Ambleside and Hardknott were established to secure an east-west route to the coast at Ravenglass (Fig 3) (Breeze 1988, 14).

The site itself has remained largely untouched since the end of Collingwood's excavation campaign in 1920, with the emphasis of work shifting towards the mapping and consolidation of the remains. In 1976, the survey company Plowman, Craven and Associates undertook a photogrammetric survey of the fort at 1:200 scale followed in 1984 by a ground survey at 1:100 scale which depicts the earthworks of the fort as contours at 0.25m intervals. This was followed in 1989 by a magnetometer survey of Borrans Field by the Ancient Monuments Laboratory which was limited in its success because of the igneous and metamorphic geology of the site (Linford, pers. comm.). The same year, work started to re-excavate the granary block as part of a programme of consolidation (Frere 1990, 320 and 1991, 235). Recently the National Trust removed Collingwood's spoil heaps under archaeological supervision and backfilled the remains of the north-east corner tower which had been open since the 1913-20 excavation (Maxwell, pers. comm.).

The Civil Settlement *(vicus)*

Roman remains came to light during the excavation of a trench for a sewer pipe along Borrans Road in 1900 (Cowper 1902). The work was observed by H.S. Cowper who reported the discovery of Roman remains from a point opposite the north-east corner of the fort stretching northwards for a distance of 700 feet (213m). Nearest to the fort there was a jumble of unworked stone that Cowper

hesitated to call a pavement, but 500 feet (151m) further north the timberwork of a 'corduroy' road came to light. Cowper speculated that the road may have started outside the east gate of the fort and then made for a crossing point of the River Rothay near to the present day Rothay Bridge, some 400m to the north.

Since 1900 further traces of Roman occupation have come to light on the east side of Borrans Road during building work and more discoveries have been made in and around the road itself whilst digging service trenches and widening the carriageway. These discoveries enabled R. Leech to publish a plan in 1993 showing the known extent of the civil settlement (Leech 1993, 52). Occupation spread along the valley bottom for 300m north of the fort apparently ending at an east-west ditch. Low ground along the River Rothay probably marked the west limit of occupation and the east side kept to the floor of the valley, sweeping around the shoulder of high ground near the north-east corner of the fort. On the east side of the fort it extended for a distance of 120m spreading over the relatively level but narrow shelf of ground between the hillside to the north and Lake Windermere to the south.

The northern and eastern sides of Borrans Field and the west end of Borrans Park are therefore within the area of the Roman civil settlement. There are no published records of any Roman remains coming to light in Borrans Park but structures have been revealed by excavation in Borrans Field. Collingwood excavated 25 to 30 trial holes in the rising ground to the north of the fort in 1920 where he found a short stretch of Roman road heading north-westwards flanked by structures on its east side (Collingwood 1921, 13-4). He also explored a limited area outside the east gate in 1913 (Haverfield and Collingwood 1914, 448) finding paving which the RCHME Westmorland Inventory suggests might have been a parade ground (1936, 3). More recently, waterlogged Roman deposits consisting of a succession of timber and metalled trackways with an associated building came to light in the north-east corner of Borrans Field in 1992-93 during the replacement of sewers and an electricity cable running to the barn (Mann and Dunwell, 1995). At the same time a sewer trench down Borrans Road uncovered the stone foundations of a Roman building close to the north-east corner of the fort.

THE EARTHWORKS: DESCRIPTION AND ANALYSIS (Figs 4 and 5)

(The letters in brackets refer to annotation on Fig 5)

Natural Features

Natural features within the survey area were identified and recorded in order to isolate them from the archaeological record and to explore how the natural topography has influenced the siting of the fort.

The fort occupies a slight plateau of raised ground up to 1.5m high. How much of this plateau is natural and how much of it is the build-up of occupation debris inside the fort or dumped material is impossible to distinguish on the ground. We have to rely on Collingwood's excavation account for the information that the east half of the plateau is a natural ridge of sand and gravel which was later extended to the west by dumping clay and gravel prior to the construction of the second fort (Collingwood 1916, 86-7). The sand and gravel ridge could be glacial in origin since mounds of glacial till, called drumlins, occur higher up the valley towards Ambleside (Charlesworth 1966), or it could have been deposited by stream action since the last glaciation.

On the west side the fort extends as far as an area of marshy ground infilling the old bed of the River Rothay (a). The relict channel, which at times of high rainfall still contains standing water, is defined by two discontinuous banks up to 0.5m high. The west side of the channel partially falls within the meadow to the west of Borrans Field. The fort would have derived some strength from the proximity of this feature, whether it was filled with marsh as we see it today or with the waters of the River Rothay.

North of the fort, in the north-west corner of the field, the east side of the channel runs around the west side of a rock outcrop. Earlier in time the stream probably flowed around the east side of this outcrop because a short stretch of a second channel is visible to the east of the first (b). The east bank of the earlier channel is formed by a prominent natural slope up to 2m high incorporating further small outcrops of rock, one of which has been quarried. The traces of quarrying appear quite fresh and are therefore probably not Roman in date. The two channels merge north of the outcrop and the east bank of the relict stream continues as a prominent scarp well to the north of the survey area heading towards Rothay Bridge. To the south of the fort its course becomes lost in the marsh on the north bank of Lake Windermere.

There is a broad, south facing natural scarp up to 1.0m high in Borrans Park (c). The feature stretches from the boundary wall between the park and Borrans Field

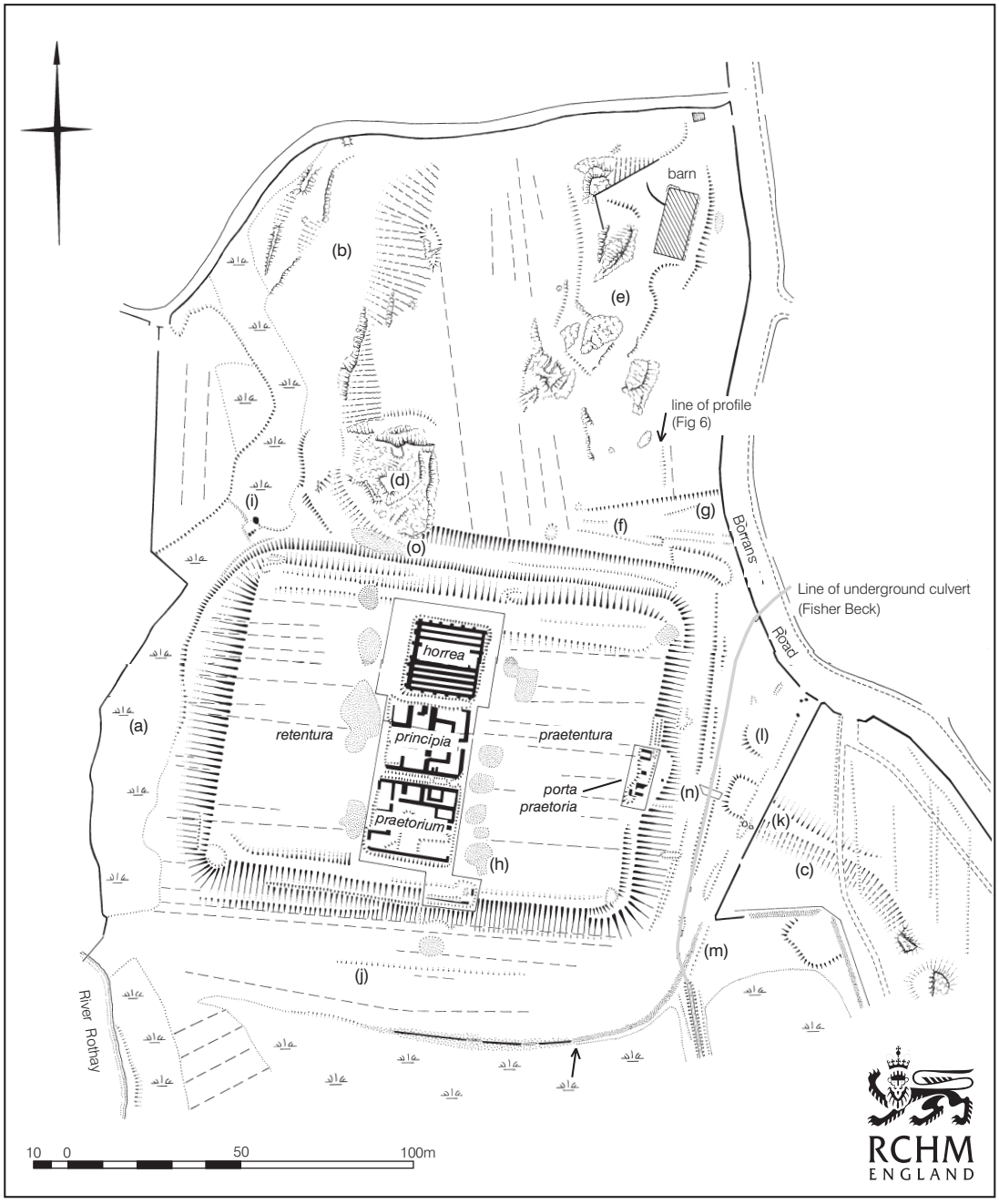

Figure 5
Annotated earthwork plan

south-eastwards towards the edge of the lake, and exposed along its length are several outcrops. It could represent an old lake shoreline or it might be the north bank of a relict river channel heading north-west under the site of the fort. Possibly it was used by the River Rothay until the outfall was blocked by the natural gravel bank underlying the fort. It is suggested below (page 14) that there are traces of a Roman *agger* on the summit of this natural ridge (k).

On the north side of the fort the space available for settlement and agriculture is limited by the existence of several areas of rock outcrops. The most prominent of these outcrops is situated at the north-west corner of the fort (d). It rises to a height approximately 5m above the surroundings in a series of vertically-bedded rock

faces with grass-covered shelves in between on which trees have taken root. On the north side of the outcrop the rock faces show signs of considerable smoothing and rounding from the passage of ice during glacial times. Collingwood maintained that this outcrop was incorporated in the defences of the first fort but, as he himself noted, there is no evidence that the outcrop has been modified to increase its defensive strength or that it was protected by outworks such as a ditch (Collingwood 1916, 62).

Further rock outcrops form a north-south ridge towards the north-east corner of Borrans Field (e). None of these are as high as the outcrop at the north-west angle of the fort (d) although individual faces display the same vertical bedding with some rounding and smoothing caused by glacial activity. There is no evidence that any of the outcrops on the ridge have been quarried or otherwise modified except where the west wall of the barn at the north end of the ridge has been terraced into the slope.

One major question concerning the natural topography of the site still remains to be answered, namely where was the shoreline of Lake Windermere at the time the fort was occupied? The base of the south side of the fort is barely 2m above the present level of the lake and the water is known to rise as far as the south edge of the fort platform at times of heavy rainfall. There is no field evidence of where the shoreline might have been in the Roman period but Collingwood found evidence suggesting the lake and fort were closer neighbours at that time than they are today. He discovered the outside of the south rampart was protected from water erosion by the deposition of a 20 foot (6m) wide spread of cobbles and waterworn gravel.

The First Fort

The first fort as defined by Collingwood has left few visible traces. There is no sign of the line of subsidence in the exposed walls of the *principia* and *praetorium* which Collingwood found was caused by the underlying south and west ditches of the first fort. On the east the ditch has totally disappeared but on the north there survives an east-west depression with a slight rise on the south side which Collingwood took to be the ditch and rampart of the first fort (f) (Collingwood 1916, Fig 2).

This ditch has been eroded by ploughing and there is now no complete profile across the feature available. The inner edge survives as a north facing scarp 0.4m high and beyond it is a short stretch of flat-topped bank 0.3m wide and 0.2m high. The bank is broadly parallel to the north facing scarp and could be the remains of a central bank dividing the ditch in two. A south-facing scarp (0.2m high) to the west of the bank marks the north edge of the ditch giving it a projected maximum width of about 7m.

Further to the north is a prominent south-facing scarp up to 0.5m high which runs from the boundary of the field westwards at an oblique angle to the fort ditch (g). A second south-facing scarp 0.2m high runs parallel and to the south of the first scarp, which if the two are part of the same feature, gives it an overall width of at least 5m. Although the field evidence is obscure, the feature looks likes the edge of a ditch that has been cut by the north ditch of the first fort (f) therefore making the former earlier in date.

The Second Fort

The second fort on the site is visible as a roughly rectangular platform bounded by a scarp 1.25m-1.5m high enclosing an area 120m east-west and 80m north-south with ditches on the exterior of the north and east sides (Fig 6). The fort is crossed by a series of straight east-west furrows - indicative of modern ploughing - which bears out Collingwood's statement that the site had been ploughed some 40 years before he started excavating. This, combined with the fact that most of the buildings inside the fort were of timber, probably explains why the inside of the fort is devoid of earthworks. The only prominent features are the scars left by Collingwood's spoil heaps. These are visible as areas of broken ground dispersed around the east and west sides of the excavated range of buildings. The one remaining spoil heap survives to a height of 0.75m on the north side of the south gate (h).

The prominent scarp defining the edge of the fort is probably made up from the levelled remains of the wall and rampart. A counterscarp, 0.3m high, on the north and south sides 10-20m back from the outer edge of the platform indicates how far rampart and wall debris has spread into the interior. This spreading of material has probably been caused by ploughing and to a lesser extent by stone robbers and archaeologists, including Collingwood. For example, at the south-west angle of the fort a furrow disappears at the outer edge of the bank suggesting material from the excavation of the corner tower in 1914 has been pushed down the slope. Another spread of excavated spoil is visible as a low bank 0.3m high outside the south gate.

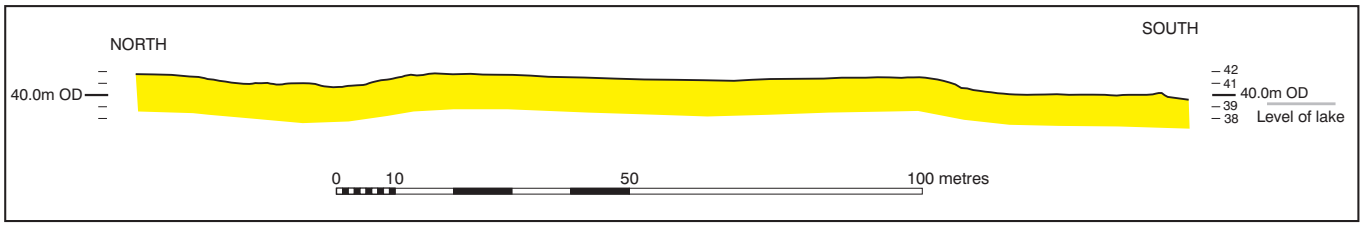

Figure 6 North-south profile across the site of the second fort (horizontal scale 1:1000; vertical scale 1:500)

The approximate position of the four corner towers and the site of the north gate can be determined from the traces of Collingwood's backfilled trenches. The presence of infilled excavations probably accounts for the places where the line of the fort wall can be made out as a slight ledge or depression. On the east side of the fort, the edge of the platform is interrupted by the fenced enclosure containing the excavated remains of the east gate, and immediately north of the gate a prominent ridge 0.3m high marks the line of the buried wall for a distance of 7m. This stretch of wall was presumably excavated by Collingwood and only partially backfilled. A slight ledge 2m wide visible at the top of the platform towards and around the south-east corner of the fort could mark a continuation of the wall on the south side of the fort. The site of the south-east corner tower is marked by a 0.3m deep 'D' shaped depression left after Collingwood's excavation.

On the south side of the fort, there are two slight ledges in the outer face of the platform between the south gate and the south-west corner. The lower one is probably a broad plough furrow but the upper is 1.0m wide and on the line of the wall. The site of the south-west corner tower is visible as a slight crescent-shaped depression 0.3m deep and on its north side is a slight break of slope which is on the approximate line of the wall. There are no traces of the west gate but the outline of the north-west corner tower is defined by a slight rise 0.1m high associated enclosing an area of rougher vegetation. The location of this tower is somewhat obscured by an area of shallow quarrying on its east side where material has probably been dug to make a nearby causeway across the marshy bed of the old river channel (i).

On the north side of the fort the line of the wall is indicated by a slight break of slope towards the top of the platform near the north-west tower and a fairly level strip of ground at the foot of the bank is probably a remnant of a berm. The site of the north gate is marked by a 'U' shaped depression 0.3m deep which is all that remains of Collingwood's backfilled excavation trench whilst the site of the north-east tower was only recently backfilled and shows as a depression 0.1m deep filled with rough grass.

The ditches survive as earthworks around the north and east sides of the fort but there is no firm evidence of a ditch on the south and west. On the south side of the fort the only feature which might indicate the line of an infilled ditch is a slight, north facing, scarp 0.2m high running parallel with the outer face of the bank for a distance of 50m (j). However, there are plough furrows in this area which are also on the same alignment as the feature and it may be nothing more significant than a line of deeper ploughing. However the fact that the plough has dug in more could itself indicate the existence of softer ditch fills below the surface.

There are no features on the west side of the fort to indicate the existence of an infilled ditch. Collingwood's suggestion that the former channel of the River Rothay replaced the need for a ditch is probably the most likely explanation. On the

north side of the fort the ditch consists of a flat-bottomed depression up to a metre deep and 12m wide with traces of a slight north-facing scarp running part of the way along the bottom. The existence of this ridge at the base of the ditch suggests the profile was originally 'W' shaped, which is borne out by the two trenches Collingwood dug across it where he recorded two ditches separated by a central baulk.

The west end of the ditch runs into the old bed of the River Rothay on the south side of the prominent rock outcrop (d). At this junction the south side of the ditch alone is man-made, the north side follows the natural slope around the base of the outcrop, although it may have been cut back in order to steepen it. Also on the north, the strip of ground separating the two ditch systems of the earlier and later forts is slightly raised and rounded in profile and it rises to the east to become a flat-topped bank 0.4m high. The east end is rounded in plan and curves southwards and it may be a counterscarp bank on the outside of the second fort's ditch system.

Very little of the ditch system survives on the east side of the fort which may be because silt washed into the area by the Fisher Beck has obscured most of the remains. A discontinuous bank up to 5m wide and 0.3m high runs parallel with the edge of the fort. It is in the same relative position to the line of the fort wall as the possible counterscarp bank on the north side and therefore it could be the continuation of this same feature and mark the edge of the ditch. South of the east gate, the bank marking the line of the fort wall and rampart becomes increasingly spread and obscures the line of the ditch. A further ridge, 0.2m high, to the east of the possible counterscarp bank marks the line of the underground culvert carrying the Fisher Beck and is not to be confused with the Roman defences.

The Civil Settlement *(vicus)*

The Roman civil settlement has left few identifiable earthwork traces in the survey area. On the east side of the fort is a flat topped ridge which begins in Borrans Park and continues westwards into Borrans Field (k). It is aligned on the east gate of the fort and probably marks the *agger* of the main Roman approach road from the east. In Borrans Field the feature is 10m wide and up to 0.5m high and finishes 20m before the fort gate in a square shaped end. In Borrans Park the causeway is much less sharply defined and stands to a maximum height of 0.3m. Its south side is given added prominence because it runs along the crest of a natural ridge (c) on the south side of the park (see above pages 9-10). The feature fades away to the east into the ridge of high ground which crosses the park.

Eight metres to the north of the probable *agger* in Borrans Field is a crescent-shaped earthwork 0.5m high defining two sides of what may be a building platform (l). It is possibly Roman and the site of a structure bordering the approach road. Other than this, the remainder of Borrans Field is devoid of any visible traces of the civil settlement known to have existed here.

Modern Features.

Excavation evidence indicates the fort was occupied until at least the end of the fourth century AD but from then until the modern period there is little field evidence of how the site and its environs were used.

The majority of modern features in the survey area relate to the use of the land for farming. It has not been discovered when the field was first enclosed although the footings of what may be the original boundary wall survive as a bank of stone rubble up to 0.3m high and 0.3m wide along the south-east edge of the field. This bank curves round the south side of the field and here several stretches of wall still stand to a maximum height of 0.8m with an apron of stone tumble up to 2m wide on either side. This boundary wall is depicted on OS maps of the site up until the 1:2500 edition of 1913 (Ordnance Survey 1913) when the line of the present stone boundary wall is shown. Its replacement may have been connected with the purchase of the field by the National Trust. There are indistinct traces of a track on the east side of the demolished boundary wall, particularly as it turns to the west where a slight hollow is visible 0.2m deep (m). The track may only have been short-lived as no routeway is marked on any of the OS maps of the site. There is a further stretch of demolished wall on the outside of the modern boundary fence on the south side of Borrans Park. An adjoining ridge 0.3m high appears to be composed of rubble from the flattened wall.

Evidence that the site has been ploughed has already been discussed in relation to the furrow scars visible across the remains of the fort. These furrows are aligned east-west and are and are 4-8m apart, but north of the fort they run north-south and are more regularly spaced at 5m intervals. The change in the direction of the furrows reflects the need to make the most efficient use of the plough in a terrain restricted by rock outcrops and marsh. The boundary between the two furrow alignments is along the north ditch of the fort testifying to the obstacle created by the depression and perhaps to it also marking a land division. The top of the south side of the ditch is very sharply defined perhaps indicating that it has been recut in modern times.

Other furrows in the marsh bordering the old river channel are more likely to be for drainage than the result of ploughing. Drainage might also explain the north-south furrows crossing the west side of Borrans Park since an information board on the site mentions part of the present park was a meadow in 1834.

As part of the drive to improve Borrans Field for agriculture, Fisher Beck was placed in an underground culvert. This presumably occurred by 1898 as the stream is not shown on the 1:2500 OS map published that year indicating it was flowing underground (Ordnance Survey 1898). It is shown above ground on the 1:2500 OS map published about 1862 though its relatively straight course suggests it was

flowing along a man-made channel (Ordnance Survey 1862). The underground culvert is exposed to view in a rectangular hole, measuring 8m east-west and 2m north-south, presumably dug as a watering hole for livestock (n). It is a long-standing feature of the site, appearing on an oblique aerial photograph of 1953 (RAF 1953). It may be much earlier than the 1950s as a short section of the culvert is shown above ground in broadly the same place on the 1:2500 OS map published in 1898 (Ordnance Survey 1898).

Apart from the stone barn of 1831, which is the only building standing on the site today, there is evidence for other structures having stood in Borrans Field in the recent past. There is an approximately rectangular area of rough ground, measuring 15m east-west and 5m north-south, in the bottom of the ditch towards the north-west corner of the fort (o). This marks the approximate site where Collingwood had one of his two wooden site huts (Fig 2). However, there are several concrete blocks scattered around in this area of rough ground suggesting Collingwood's site hut was not the only building to have stood here. Collingwood had a second site hut on the east side of the rock knoll (d) but this has left no visible traces.

During the Second World War a concrete air-raid shelter was built on the north side of the stone barn in the north-east corner of Borrans Field. It was demolished during the last ten to twelve years (G. Corbett pers. comm) and has left no surface traces.

DISCUSSION

The Siting of the Fort and Communications

The fort occupies a site of strategic importance at the meeting point of two valleys; the valley of the River Rothay gives access into the heart of the Cumbrian mountains north-westwards via Grasmere and north-eastwards over the Kirkstone Pass, whilst the valley of the River Brathay provides a route westwards towards the coast via Hardknott Pass. The site also offers several tactical advantages.

Firstly, the fort probably guards a crossing point of the River Rothay. Although there is no archaeological evidence for a Roman ford or bridge across the River Rothay it is likely to have been around the site of the modern bridge 300m north of the fort. An approximation of the crossing point, which was probably a ford, can be gauged from the alignment of the modern road on the east side of the River Rothay. The road is probably heading for the ancient crossing point but, 40m from the river, it turns sharply northwards to cross by the modern bridge. The second advantage gained by the choice of site is that the fort gains strength, and some protection from flooding, by being partly situated on a natural platform of sand and gravel. It later proved possible to extend the area of the platform by dumping material on its west side.

There are a number of reasons for concluding that the fort enjoyed good communications with its hinterland. Firstly, the survey found no evidence that the fort builders quarried stone on the site but instead drew on supplies from further afield. The central range of buildings and fort walls were largely constructed from the Brathay Flags formation, which outcrop two kilometres to the south on the west bank of Lake Windermere and some use was also made of Lancaster Carboniferous grit for architectural details. Secondly, it has been calculated that the fort's granaries had the capacity to hold twice as much grain as would have been needed to feed the garrison which suggests the fort acted as a collection and redistribution centre for produce (Gentry 1976, 28).

The only evidence found during the RCHME survey for a road was the possible *agger* aligned on the east gate, partly preserved in Borrans Park and partly in Borrans Field. This presumably continued south-east around the shores of Lake Windermere before heading inland to the fort at Watercrook near Kendal. The road found by excavation in 1920 outside the north gate of the fort presumably headed for the ford across the River Rothay but its line to the river has not been traced either on the ground or from aerial photographs. After crossing the Rothay it presumably headed inland to Hardknott fort. Evidence of a Roman road partly underlying Borrans Road has been observed from time to time (Cowper 1902, 32-3; Burkett 1977, 179; Godbert 1993, 75). It may have headed up the valley towards Ambleside or turned westwards to the crossing point of the River Rothay described above.

The proximity of the fort to Lake Windermere begs the question of how much use was made of water transport. The lake offers the possibility of a direct link from the fort to the sea via the River Leven, which has the advantage of avoiding the steep overland route across Hardknott Pass. Although Collingwood claimed to have found the remains of a Roman quay along the north edge of the lake, no evidence of this construction was found during the survey nor is it visible on any of the aerial photographs of the site.

The Development of the Site

The Temporary Camp

The survey found no sign of a Roman camp in the field north of the survey area (NY 372 036). The claimed cropmark of a possible camp photographed by B.Blake in 1955 does not appear on any of the aerial photographs consulted during the survey nor is there any trace of it on the ground. The first edition 1:2500 OS map published around 1862 (Ordnance Survey 1862) shows a field boundary on approximately the same line as the west side of the cropmark which might explain part of what Blake saw.

The First Fort

The existence of two successive forts on the site would probably have gone unrecognised had not the excavation turned up widespread evidence of an earlier phase of occupation below the remains of the second fort. Since Collingwood's day, comparable evidence for a break in occupation in the early decades of the second century has turned up at other forts in the north-west reinforcing Collingwood's interpretation of the Ambleside evidence. The apparent abandonment of the fort at Lancaster and indications of a reduced garrison or break in occupation at Watercrook, Maryport, Caermote and Kirkby Thore suggests there was a widespread redeployment of troops in the north-west early in the second century (Potter 1979, 358).

Where Collingwood can be criticised is over his reconstruction of the plan of the first fort. Its sides are different lengths for no obvious tactical reason and the most unusual aspect of its postulated layout is the way it apparently includes a rock outcrop at its north-west corner. If this feature was incorporated in the defences as Collingwood suggests it is likley that the fort builders would have made some attempt to fortify it as at Hardknott fort, ten miles west of Ambleside. Here a rocky knoll at the north-east corner of the fort was secured by a rock-cut ditch on the outside and by the construction of the fort wall over its summit. At Ambleside there is no evidence that the outcrop was ever protected by a ditch or modified to increase its strength.

To have used a natural feature without modification as part of the defences of a fort, as suggested by Collingwood, therefore marks a significant departure in Roman military planning. It is even unusual for temporary camps to incorporate natural features into their defences when speed of construction would have made it expedient to do so. A recent survey quotes the sole example of the camp at Milestone House in Northumberland where a natural crag is used to form part of the north rampart (RCHME 1995, 16-7). Collingwood's reconstruction of the first fort is therefore open to question and the evidence on which it is based needs to be reassessed. Although this task is beyond the scope of the present study, several problems with Collingwood's reconstruction of the first fort have emerged through this fresh examination of the field evidence.

For example, Collingwood does not discuss the possibility that the two ditches on the north side of the first fort could have been an outer defence to the second fort. The survey located the fragmentary remains of what Collingwood took to be the two northern ditches of the first fort but found nothing on the ground to indicate they predate the laying out of the second fort. Infact, the ditches run parallel to the north side of the fort suggesting the two are related. Judging from Collingwood's published account he also failed to properly examine the relationship between these ditches and the second fort. His trenches on the north side of the first fort terminated before they reached the ditches belonging to the second which means that Collingwood did not prove stratigraphically that one ditch system is earlier than the other. A further criticism of Collingwood is that he took the slight, rounded bank in the 5m wide strip of ground between these two ditch systems to be the rampart of the first fort. But the field evidence of the way the east end of the ridge curves to the south makes it more likely that it is a counterscarp bank on the outside of the second fort.

Collingwood also shows the north ditches of the first fort turning south underneath Borrans Road, despite the fact that Cowper found no evidence of them in this location when observing the excavation of a sewer pipe trench in 1900 (Cowper 1902, 33), finding instead a jumble of unworked stone. When the same area was exposed in a pipe trench in 1992-3 the remains of a stone building came to light but again there is no mention of any fort ditches (Mann and Dunwell 1995, 82). This negative evidence calls into question the layout of both the north and east sides of the fort as shown on the published plan.

An alternative interpretation of the evidence discussed above is that the north ditches of the first fort were wrongly attributed by Collingwood and are infact an additional defence on the north side of the second fort. The provision of an extra line of ditches accords with Roman military practice of providing forts with extra security on their most vulnerable sides. At Ambleside this is the north side of the fort because it is overlooked by higher ground (Jones 1975, 109). With this alternative interpretation the fact that the outer ditches butt up to the rock outcrop becomes less of an issue. The outcrop is no longer the 'corner tower' of the first fort but simply an obstacle in the way of an outer pair of ditches belonging to the second.

The discovery in the current RCHME survey of what may be the line of an early ditch on the north-east (g) may be the sole surface indication of an earlier layout. It runs at an oblique angle to the rest of the visible fort earthworks and is apparently cut by the outer most ditch, therefore pre-dating this phase but what it relates to is as yet unknown, though from its relative date it might possibly be part of the first fort.

The Second Fort

Collingwood's excavation plan of the second fort matches the field remains although extensive ploughing across the site in modern times has eroded the defences and eradicated all evidence of the internal layout. Surface indications of the approximate line of the wall and the position of the corner towers and north gate recorded during the field survey probably indicate nothing more than the position of backfilled trenches from the 1914-20 excavations.

There is no sign of a ditch on the south and west sides of the fort and it is still open to question whether one ever existed here or if the garrison relied on the lake and extensive areas of marsh for security as Collingwood suggested. Whether or not the channel had water flowing in it or was filled with marsh is not critical to the argument since either would have effectively secured the west side of the fort. However, the fact that the earthworks in proximity to the channel show no signs of river erosion suggests water has not flowed along it since before the Roman period.

On the north side of the fort the current RCHME survey has found evidence of two ditches with an intermediate baulk and a possible counterscarp bank on the outside. The remains are less well preserved on the east but it is possible to pick out the line of the two ditches as a single depression with the truncated remains of a counterscarp bank on the outside. The only major disagreement with Collingwood's plan of the second fort which has emerged from the survey is the suggestion that the north ditches of the first fort are infact more likely to be an outer defence of the second.

Other questions relating to the layout of the fort which arise from the current field survey are the complete absence of any evidence for the position of the fort bathhouse and for the mechanisms by which the fort was supplied with water. The Fisher Beck, which flows just to the east of the fort may well provide the answer to both these questions. It would have been a relatively easy undertaking to divert some of the flow on the upstream side of the fort into pipes to supply the garrison with drinking water and to flush the regimental latrines. Equally, a bathhouse positioned outside the main gate, as at Hardknott, could draw on the waters of the Fisher Beck where it went past the east entrance to the fort . The only earthwork in this area which might be part of a bathouse is the possible building platform (l) to the north-east of the east gate. The suggestion that the parade ground was sited on the east of the fort (RCHME 1936, 3) has little to recommend it given that the ground here is low lying and crossed by the Fisher Beck.

Post -Roman

The survey found no evidence of any activity at the site between the abandonment of the Roman fort and the modern period. The site is some distance from the main centre of medieval settlement at Ambleside and could well have been uncultivated pasture in the middle-ages accounting for the widespread remains visible when Camden visited in the 16th century. Collingwood's statement that the site was ploughed in the 19th century finds physical expression in the pattern of furrows across the fort and over the high ground to the north.

Also related to the agricultural exploitation of the site is the evidence of drainage channels crossing marsh on the west and south-west of the fort and possibly also in Borrans Park. The construction of a culvert for the Fisher Beck would also have been motivated by the need to drain the low ground on the east of the fort.

METHODOLOGY

The archaeological survey of Borrans Field and Borrans Park was undertaken using a Leica TC1610 total station theodolite on a base-line traverse. The stations at either end of the traverse were marked by wooden pegs which were removed at the end of the survey. Observations from the stations were taken to record hard detail and set out a grid of temporary control points marked by plastic pegs and degradeable paint and chalk marks. Fibron tapes were then laid between these control points and archaeological detail measured off and plotted by hand at 1:1000 scale onto the emerging plan on site using standard graphical techniques of baseline and offset. Where appropriate, further detail was added to the plan in the field using a Wild RK1 self-reducing alidade and staff.

The digital survey data was processed using Mathshop survey software and the results plotted on a Calcomp pen plotter. The final report has been processed using Corel Ventura DTP software with illustrations prepared using Coreldraw and AutoCad programmes.

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Trevor Pearson wrote and illustrated the final report which was edited by Stewart Ainsworth.

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AERIAL PHOTOGRAPHS CONSULTED IN THE NMR COLLECTION

VERTICAL
1056/UK/653/4396-98 (13/08/45)
541/61/3204-06 (12/06/48)
541/61/4205-6 (12/06/48)
58/2099/60-1 (05/02/57)
OS/66121/74-6 (01/06/66)
OS/66121/84-5 (01/06/66)
OS/69042/82-3 (05/04/69)

APPENDIX: Table of NMR numbers linked to the survey

SITE NAME	COUNTY	DISTRICT	PARISH
Ambleside Roman fort	Cumbria	South Lakeland	Lakes

NMR no	Unique Identifier	NGR	Site Name
NY 30 SE 5	10240	NY 3725 0340	Ambleside Roman Fort
NY 30 SE 17	10254	NY 373 035	Roman Vicus
NY 30 SE 55	1024266	NY 372 036	Possible Roman Camp

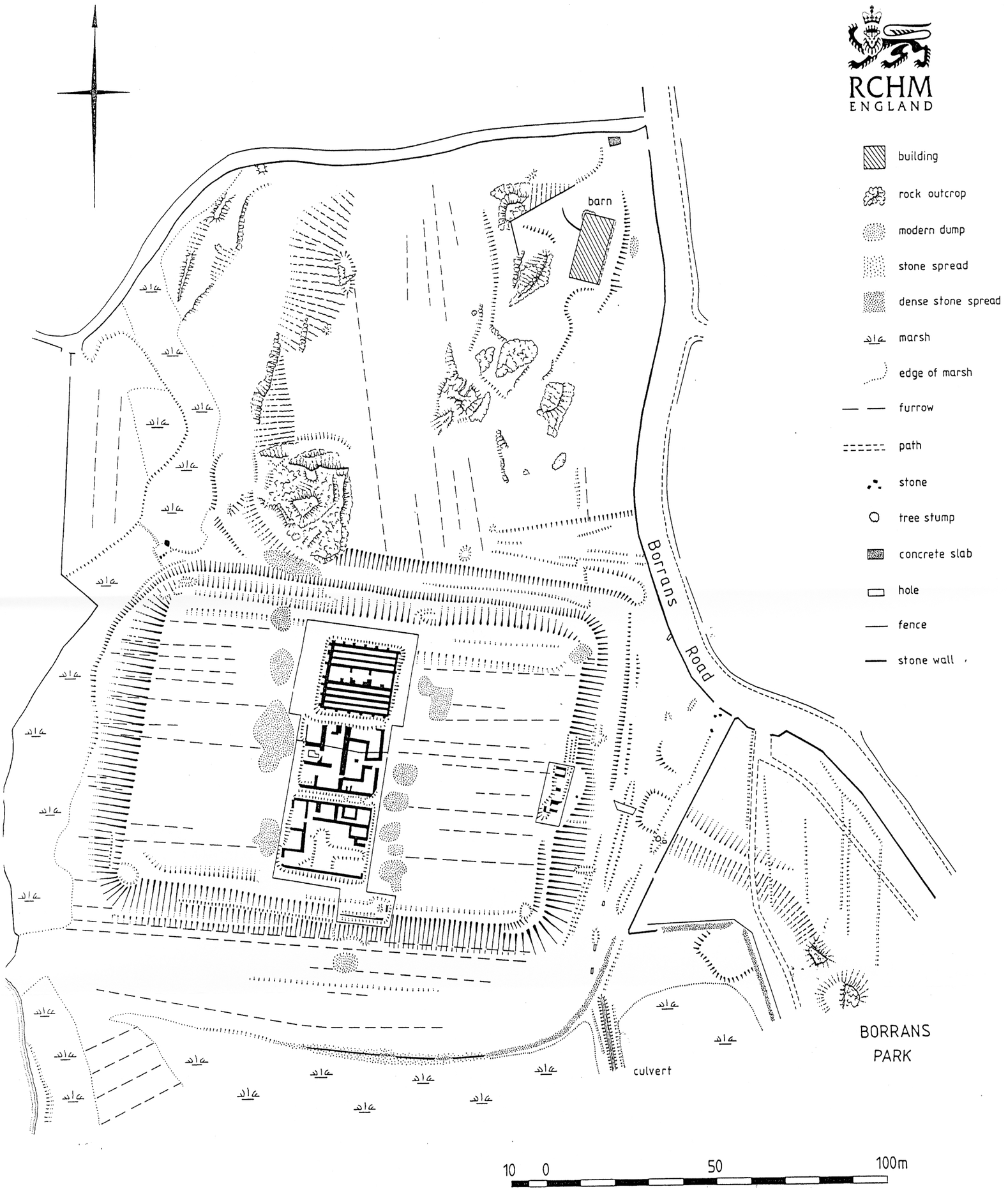

Figure 4 RCHME earthwork plan (surveyed at 1:1000 scale)

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