ART. II – *The Roman Fort at Castlesteads, Cumbria: a Geophysical Survey of the Vicus*

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THE Roman fort at Castlesteads (Camboglanna) is positioned between the Wall forts of Birdoswald and Stanwix, and sited on an escarpment above the Cam Beck. The fort is unusual in that, although it is classified as a Hadrianic Wall fort, it is not built on the line of the Wall but is positioned some 400 metres to the south. The easier line, which the Wall now follows, was probably taken in preference to the direct line between Milecastles 56 and 58, which would pass through the fort. One explanation why this route may have been taken was to avoid constructing the Turf Wall across the Cam Beck and up a steep escarpment to the east.

Details about the fort itself are meagre as it was largely destroyed in 1791 when the present house was built, and walled gardens laid out over the site of the fort, although Hutchinson (1794) in *The history of the County of Cumberland* recorded some details of the fort. Castlesteads is thought to have been occupied during the Hadrianic period by a *cohors quingenaria peditata* (Breeze and Dobson, 2000, 54).

An excavation by Richmond and Hodgson (1934, 159-165) attempted to establish if any trace of the fort remained after its destruction. Some evidence of gates towards the east and west of the fort, together with the curtain wall, was identified with a 4.8 m wide ditch and a berm 3 m wide, although little was seen within the intra-mural area itself. Significantly, it was estimated that some 100 feet (*c.*30 m) of the fort had fallen into the Cam Beck. Due to the siting of the fort, with the north gate overlooking the steep escarpment above Cam Beck, it is likely that the *porta praetoria* faced east instead of the more usual northern aspect, facing the main gate. This would mean that the fort was similar in general layout to the east-facing fort of Housesteads.

The excavators found evidence of a rampart and ditch from an earlier turf and timber fort set on a different alignment to the later stone fort (*ibid.*, 163-5). Trenching at the south-east angle revealed the remains of a turf rampart, at least 3 m wide, resting on flagging and stones set in clay to the rear of the stone wall. This rampart base is probably the remains of the earlier turf and timber fort. An east facing scarp, 0.4 m high, parallel to the east rampart, was discovered during a survey by the Royal Commission on the Historical Monuments of England in 1991. Richmond and Hodgson also pointed out that the later stone fort was not set out centrally within the diversion of the Vallum to the south but asymmetrical to it; a point made earlier by Collingwood (1922, 202). Collingswood's explanation for this irregularity was that the fort could have had an annex built on to the east. Richmond and Hodgson suggest that this inconsistent construction was possibly due to an earlier fort being set further to the east with a north-east orientation, which would have then been symmetrical with the Vallum diversion. This is certainly a possible explanation and reflects a similar relationship between the Vallum and the stone fort at Birdoswald (Wilmott, 1997, 44-5).

An external bath-house to the north-east of the fort was located and partly

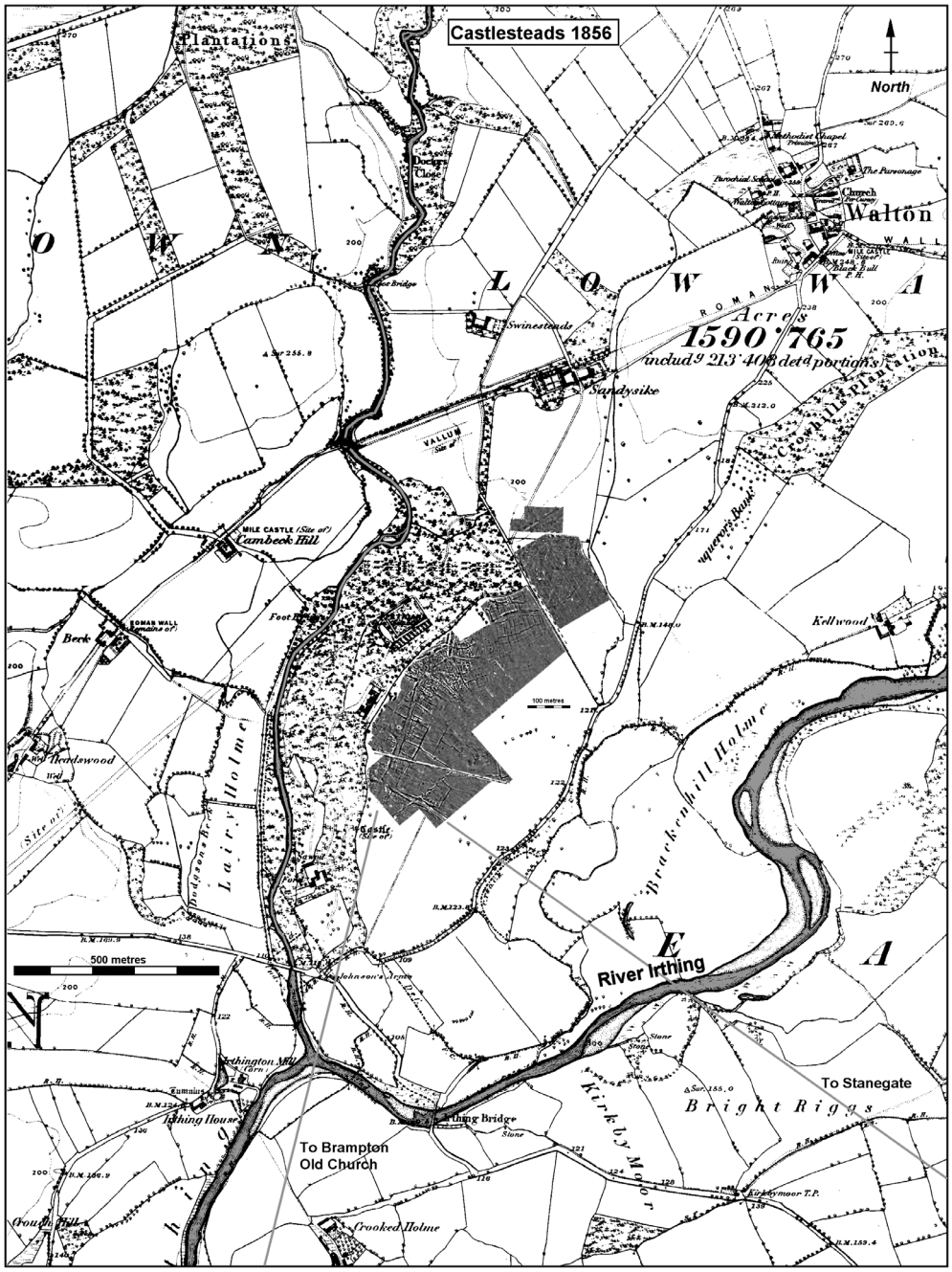

FIG. 1. Overview of the geophysical survey, superimposed on the O.S. map of 1856. The major road systems have been extrapolated to show possible crossing points or bridges across the River Irthing. A "stone" is marked on the map some 100 metres south-west of the eastern road, close to the River Irthing.

excavated in 1740, although the exact position and plan is not known. The Vallum survives as a buried feature throughout this section with no remains visible above ground. Its route has been confirmed by Haverfield who cut trenches in 1898, 1901 and 1902 to determine its course.

The *vicus*, which is usually associated with Roman forts, is not now visible, except in places where it is seen as very shallow platforms. However, a letter from Richard Goodman writing to Samuel Gale in 1727 mentions traces of an extensive settlement on the slope towards the south-east of the fort. He noted the existence of foundations of walls and streets, which were being removed to construct new buildings and to allow the land to be ploughed. A temple outside the Castlesteads fort to the south-east, which had "fallen in through age" was repaired by a centurion, Gaius Julius Cupitianus, and dedicated to "the Mother goddesses of all nations" (*[Deabu]s| [Mat]ribu[s]| omnium | gentium | templum | olim uetus | tate conlab|sum G(aius) Iul(ius) Cu | pitianus | (centurio) | p(rae)p(ositus) restituit*); (RIB 1988).

The high quality of the geophysical survey data almost certainly reflects the absence of recent sustained deep ploughing over the site. It is possible that the apparent absence of sub-surface features to the south of the survey may indicate greater destruction by ploughing than those to the north; this could be reflected in the level of occupational debris present on the surface of that part of the site. Conversely, taphonomic processes downslope may have preserved deeper levels by colluviation. Many large stones can be seen on or just below the surface over the area of the settlement. Also, extensive surface collections of pottery, brick and tile were seen in stubble after the field had been laid out to arable cultivation in 2001.

Methodology

On this site, magnetic survey was the preferred method, which was carried out in three phases in 1999, 2000 and 2001 during periods of variable weather. The site of the fort is set within woodland and the area surveyed (17.9 ha in total), is located to the south of the field boundary dividing the woodland from open pasture. Geoscan FM36 fluxgate gradiometers were used to carry out a magnetometry survey employing 1.0 m parallel traverses with 0.5 m sample intervals. The 30 metre grids were set out approximately parallel with the south-east curtain wall of the fort using a Leica TC 403L EDM, and these grids and other relevant mapping features were recorded.

The data was processed using Geoplot software (Geoscan Instruments) and the data presented as a grey scale plot superimposed upon the first edition Ordnance Survey base map of 1856 (Fig. 1). This figure shows the relationship of the *vicus* with a less developed landscape. One point of note shows that the surveyors of the day indicated the location of the Vallum as some 500 m north of its currently known position, which is probably a point worthy of further investigation. The magnetic grey scale plot was used to produce an anomaly plan, which, as is usual, produced a palimpsest of superimposed subterranean responses (Figs. 2-3). A number of hypothetical features, including the fort and bathhouse have been incorporated on the map, which give both a sense of scale and place the survey in a spatial context. In order to clarify the very complex central portion of the survey area around the *vicus* an additional larger scale anomaly plan has been included (Fig. 4). Neither can

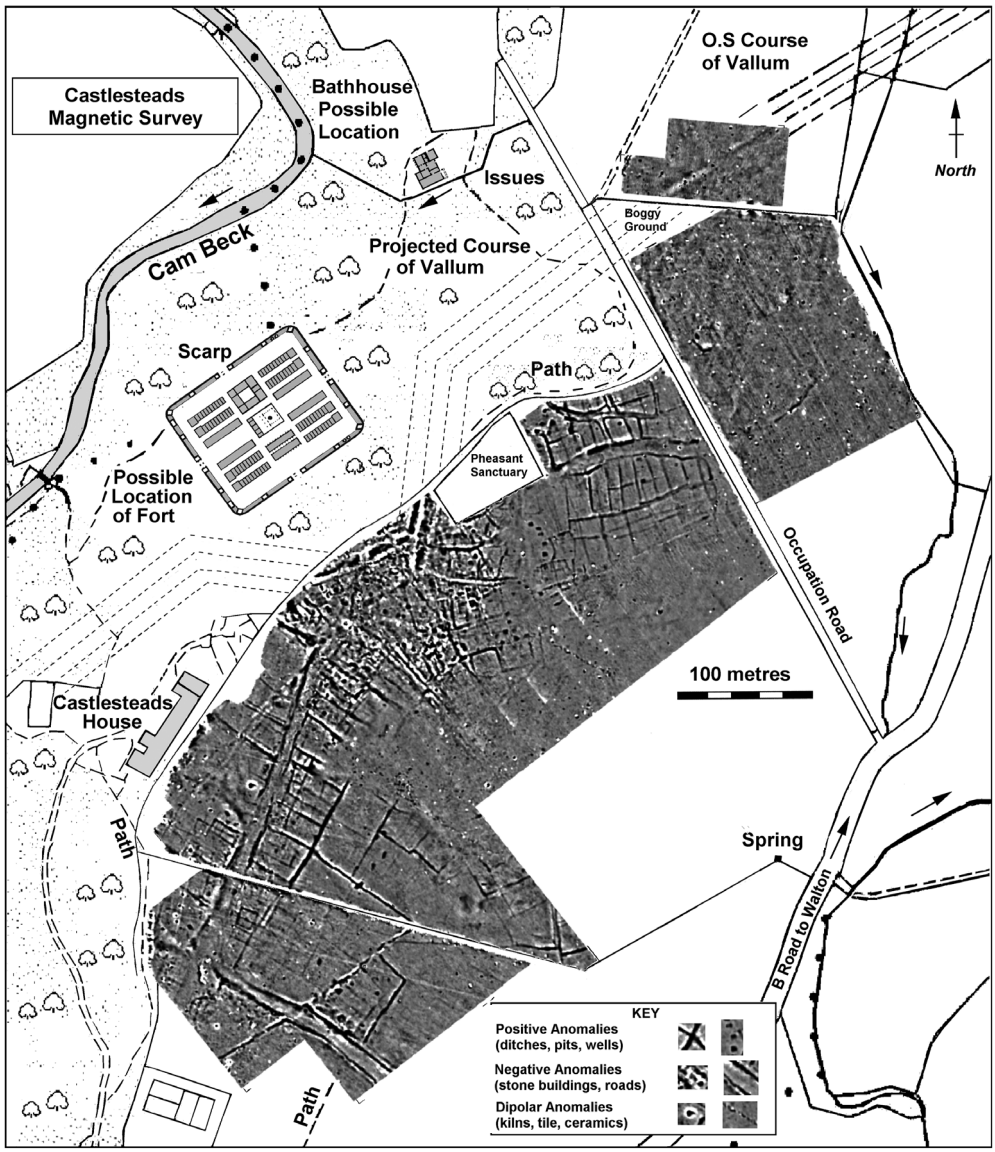

FIG. 2. Magnetic Geophysical Survey (Grey Scale Plot), using Geoscan fluxgate gradiometers. A number of partly conjectural structures have been included, including the fort and the bathhouse, to indicate the extent, scale and relative locations of the *vicus* with the fort and Vallum.

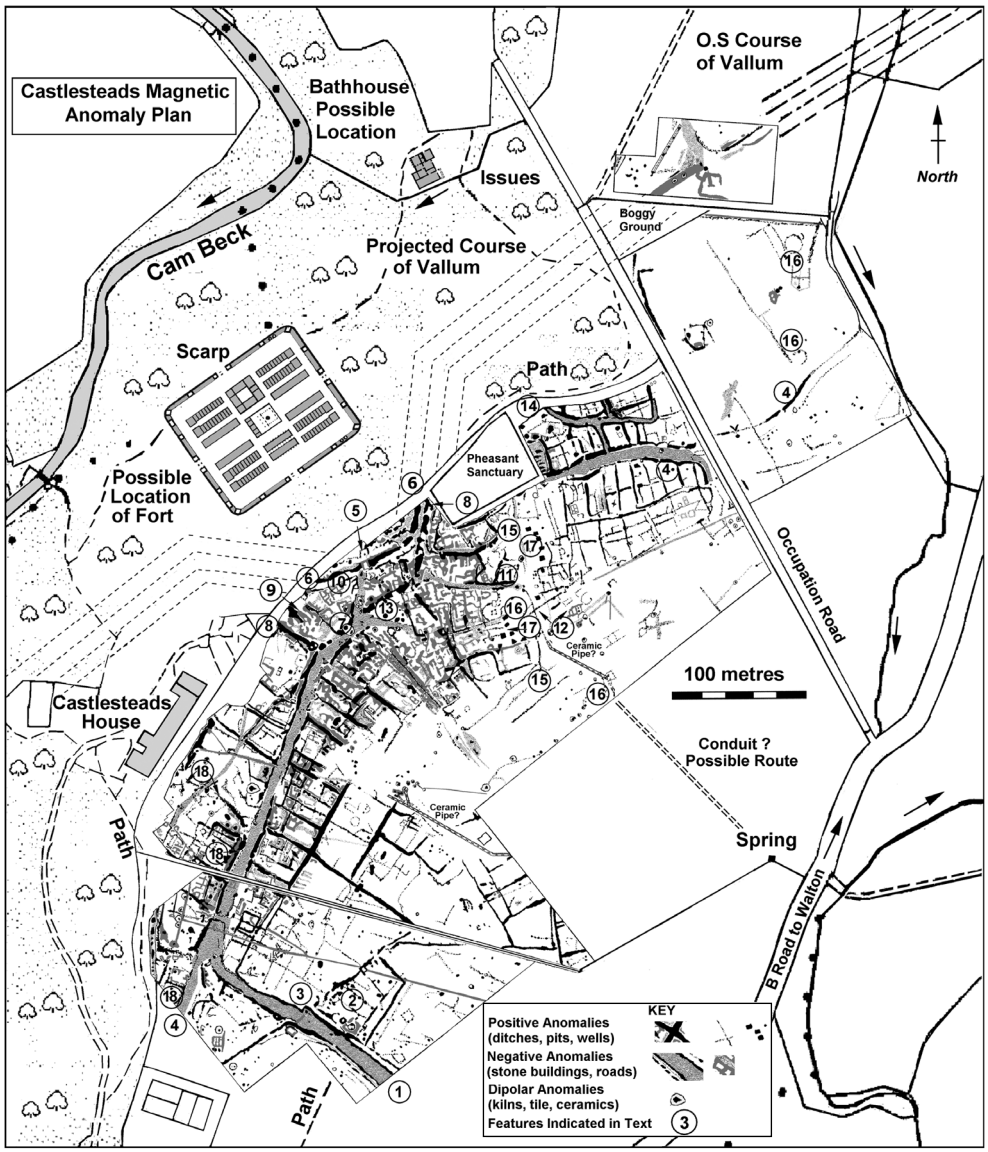

FIG. 3. The Magnetic Anomaly Plan showing ditches, pits, roads and building foundations. This is derived directly from interrogation of the geophysical data, and attempts to compensate and differentiate for different magnitudes of magnetic response.

generally be depicted as an interpretative plan, because of the complexity of superimposed features. However, the outline of the individual fields and their associated road and track systems were plotted as a CAD image, from the primary geophysical survey data (Fig. 5). Metric units of length and the field areas (in m^2) were determined from this data.

It must be stressed that geophysical techniques cannot normally distinguish between the different phases of archaeological deposits and can only produce a composite image of all the features within an instruments operating depth.

Interpretation

A double-ditched major road **(1)**, up to 11 m in width, approaches the fort and *vicus* from the south-east. This road continues as a single-ditched road towards the junction in the north-west. The road can be seen as a raised linear feature, approximately 500-600 mm in height above the surrounding ground level. At its south-eastern end the agger is double ditched, with an intervening strip or pathway some 2.5 to 3.0 m in width. A ditched enclosure is sited to the north of the road **(2)**, which it is suggested could be a cremation cemetery (maximum dimensions; 64 m by 49 m; 0.23 ha). This interpretation was made based upon the morphology of the magnetic anomalies, some of which are circular, whilst another resembles a circular ditch within a 10 m square stone surround or kerb. The siting of a cemetery is typical, being located by the side of a major road leading to a deliberate constriction, adjacent to which a circular positive anomaly may indicate a roadside well or shrine (**3**).

This road curves to the north at its junction with a second major road **(4)** running approximately north-south and extending beyond the limit of the survey. At the mid-point in the survey it passes through the *vicus* where it diverges, forming several minor roads. The magnetic anomalies indicate that the roads to the north of the easterly road may not be metalled. The road leading south from the Vallum crossing **(5)**, continuing in a straight line to the outer ditch, is on a different alignment to the major road leading south-west **(4)** away from the fort. This latter road is on a direct alignment with the Stanegate fort of Old Church, Brampton. One of these roads **(5)** crosses the Vallum (**6**) and leads to the fort. Several roads branch from the major road **(4)**, most of which run in south-easterly direction south of the *vicus*.

The line of the Vallum (**6**), together with its crossing, is clearly defined to the south-west of the survey area, although the angle in the change of direction is not as great as that previously published (Daniels, 1978, 227). The strength of the magnetic response suggests that the Vallum was left open for a considerable period, perhaps for the greater part of the life of the fort. These strong positive readings indicate the presence of anthropogenically modified organic deposits resulting from the gradual infilling of the ditch, possibly creating anaerobic conditions, and by implication, the potential preservation of organic material. Some evidence of buildings can be seen within the Vallum enclosure, although the limit of the survey denies interpretation. Similar buildings have been identified in this position at the fort of Halton Chesters (Taylor *et al.*, 2000).

Close to the point where the two roads meet, some 40 m from the Vallum, is a strong dipolar anomaly **(7)**; this is thought to be of later origin due to its location

and morphology and could indicate the site of a kiln. This feature is close to the position where the road crosses a substantial ditch **(8)**, which was intersected at an angle to the south of the Vallum. The ditch returns to the north-west and north-east where it closely follows the line of the Vallum and can be seen to cut several features relating to field boundaries. It is probable that all the roads crossing this ditch have been cut, with the exception of the Vallum crossing. A building, possibly of stone, which may be associated with a channel or wall, has been built at the conjunction of three of the ditches to the south-west **(9)**.

The purpose of the ditch outside the Vallum can only be conjectural. Its line however, does mirror that of the Vallum and it is possibly an earlier cut of the ditch that was later abandoned. It is significant that the line of the road from the Vallum crossing to the south deliberately skirts its southern lip, suggesting an earlier date. Alternatively, the ditch may have enclosed an annex to the fort, as previously suggested by Collingwood (1922, 22); it is noteworthy that the space between the two ditches does enclose several substantial buildings, all probably built of stone. A group of four substantial stone buildings **(10)** can be seen to the south-west of the road leading from the Vallum crossing. The larger of these buildings is *c.*8 m square and is subdivided.

Henry MacLaughlan's 1857 map of the fort, designated by him as *Petriana*, clearly indicates that there is a watercourse some 120 m to the east of the fort running north-west to south-east. The watercourse is shown to cease on the line of the present northern field boundary, and would appear to be culverted from that point. This watercourse was detected as a slight linear anomaly by the magnetometry survey, but can be seen to clearly divide the fort and major settlement to the west from the Romano-British design of field system to the east **(15)**. Implicitly, it may indicate that it might well be culverted with a stone channel, moreover it may still be functional, i.e. water-logging and associated anaerobic conditions are not evident along its route. However, the path of the watercourse can still be observed as a substantial surface depression, running roughly parallel to the remains of a relict field boundary, which is also indicated on MacLaughlan's map as a tree line leading to a permanent spring.

Several "lanes" have been identified, which can be seen to run between the blocks of property within the settlement to the south of the Vallum, leading to the open land to the rear. One such "lane" **(11)** to the east of the settlement passes through a right angle, around a site boundary, before proceeding in a north-easterly direction possibly passing to the south of the field systems to the east of the watercourse. A lesser road **(12)**, some 20 m to the south and running east crosses the watercourse leading directly to a series of small enclosures to the south of the field system. A small building of uncertain function can be seen in one of these fields.

An area free from buildings can be seen to the south of the outer ditch **(13)**, which is bounded by a ditch to the north and buildings to the other three sides. The main road from the west enters this open space towards the north-west, with additional roads leading off to the south and south-east. It is possible that open space was created to form a small market place or some similar focus for the community. A number of small circular and square (*c.*2 m) strongly positive anomalies are contained within this area. It is entirely possible that they will indicate the location of wells. A narrow linear negative anomaly (possibly of stone) can be

seen to traverse this area from the direction of Castlesteads house and continue towards the stream bed. This, perhaps arbitrarily, is not indicated, as it may be a relatively modern ceramic pipe, which appears to cut features identified as Roman.

The road leading to the north-east **(4)** can clearly be identified as far as the occupation road running approximately north-west to south-east. Beyond the occupation road line, its course has been ploughed out and only traces remain of its sinuous route. The lack of formality of this length of road, in that it does not reflect the perceived Roman preference for a direct, straight line as seen to the south, could suggest a pre-Roman inception. It is probable that a branch leading off this road to the south of the occupation road **(14)** could connect with the road leading from the east gate, the possible *porta praetoria.*

Located to the south of the fort is the *vicus* with roads and buildings set at right angles to the main thoroughfares. In the northern sector is a field system of more than one phase, set out to either side of the major road **(4)** running north-east. Significantly, the alignment of the former boundaries is similar, implying a change in land ownership or tenure, rather than modifications in crop or husbandry management. These fields continue to the east of the occupation road, but have largely been ploughed out. The broad impression is that the secondary field boundaries north of the major road enclose larger plots than during the primary phase. Almost all of the fields have entrances in a corner; this would imply that they were all used for animal husbandry at some time, even if it was just for manuring or security. Understandably, it is easier to herd animals through a field boundary, which is emplaced in the corner (Pryor, 1998, 101, 103, 121). In other words, if the entrance to an enclosure is central, the assumption is that it is not intended to be used for stock.

Several possible roundhouses can be provisionally identified over the site (**16**), which do not appear to have defensive enclosures, but these could be masked by later activity. One close to the west bank of the watercourse, associated with the primary field system, is cut by a later boundary. Suggestions of further roundhouses can be seen close to this. Several pits can be seen over the survey area, although it is possible that those lying adjacent to the watercourse could be wells **(17)**; the percolation of the water through the ground was thought to have offered some form of natural filtration (Johnson, 1983; Hodge, 1995, 71). In total, there could be as many as 16 wells, most of them giving a magnetic response some 2-3 m in size and are either square or rectangular, although the excavated size could be smaller (see Johnson, 1983, 205, fig. 156). Wells could also be associated with individual buildings or plots, but in that instance, they could equally be interpreted as refuse or latrine pits.

The boundaries of the settlement to the south-east of the *vicus* are complex. However, many of the boundaries appear to be arranged on a similar alignment to those to the east. It is clear that many of the southerly field boundaries may have been affected by ploughing, and their southern limit is not now known, although additional survey to the south-east may be productive in some areas. To the south of the settlement, however, the field boundaries are aligned to the major road systems (**1** and **4**). These can be seen to overlie an earlier field system similar to that found in the northern sector of the settlement. The fields generally are larger and many contain buildings; some of the larger ones almost certainly used for livestock.

A curved linear feature to the west of the road on the south-west of the survey area could suggest the line of a ditch to an earlier fort **(18)**. However, if the major road from the south-east (**1**) were centred on its length it would suggest a fort with its longest dimension of *c*.220 m, which would make it the largest fort on the Wall. This is an area where further investigation is required in order to validate any interpretation. What should be noted is that there is no valid or obvious reason, such as the topography, which dictates that a major road to the fort should be offset by some 350 m.

At the edge of the survey area to the north, evidence can be seen of the Vallum **(5)** and a crossing (**19**), seen as a mix of positive and negative anomalies. This mixture of anomalies represents both the ditch and the upcast from it. There is some slight evidence, in the form of a diffuse negative linear area, north of the Vallum crossing, of a possible area of metalling, possibly indicating a road surface.

Discussion

This survey has given some insight into the arrangement of the *vicus* to a fort about which probably less is known than any other Wall fort. The survey shows that the *vicus* is set out to the west of a watercourse and that this feature dictated the eastern extent of most of the settlement. Romano-British field systems were apparently largely unaffected by building and could reflect the importance of an existing source of supply to the Roman army. The *annona*, an important component of the military diet was almost certainly levied on the frontier. For example, depopulation on the Eastern Frontier at Dobrudja on the Pontic Shore, meant that after pacification, the military was forced to draft in farming families from Roman Thrace to resolve their problem with wheat supply (Williams, 1996, 62). The *vicus* itself is made up of a loose group of buildings, which has spread out from the Vallum crossing. Its full extent is not known, as buildings could be present within the woodland to the west of the survey area.

The contrasting character of the fields to either side of the watercourse (**15**) can clearly be seen on Fig. 5, which shows the simplified layout of the field boundaries, road and ditch systems, in bold line, whilst omitting other complicating features. It is significant that the ditch system connected with the fields, particularly in the east, has a large span and depth (implied from the strength of the magnetic response). The fact that the ditches follow the contours indicates that they were not used for drainage purposes alone, and it would seem that their main purpose would have been to prevent cattle and other animals entering the cultivated areas or hayfields, or alternatively to protect them. A very similar system was seen within the field system at Maryport (Biggins and Taylor, 2004b; compare figs. 5.2 and 5.6, 105 and 110), where gentle drainage along the contours probably prevented erosion.

The character of the enclosures to either side of the watercourse differs to quite a marked degree. Those to the east are made up of a series of small linked enclosures, which are typical of Romano-British field systems, and entrances to these fields from the road are evident. Those to the west, overlying an earlier phase of much smaller enclosures, are larger in size. Some of these latter enclosures probably contain buildings, whilst it is suggested that others could be for the containment of stock. Some indication of a primary field system was seen in the angle where the road from

the south-east joins the road running north-east. The roads are quite clearly set out either side of the main road entering the fort, and are contemporary with the *vicus*. It would seem that a field was set out to each side of the roads entering the fort, being accessible from these roads. The field boundaries running from the road are set at a right angle to the inner boundary. The fields behind these would appear to have been accessed from the roads running out from the *vicus* itself.

Further examination of this field system to the east of the watercourse shows that the earlier fields were considerably smaller than the later phase. It is also clear that the minor road running north-west **(14)** is later as it cuts earlier field boundaries, whilst it is almost certain the main north-easterly road **(4)** continued to be used concurrently. The size of the fields falls mainly within the approximate areas of 600 –700 m^2. This is about half of an *actus quadratus* (*c.*1260 m^2), and although difficult to prove at this remove in time, may have been a standard allocation, even if they were farmed or managed by an indigenous population. A tidy Roman mind might have been responsible for basic survey and subsequent allocation. It should not be forgotten that a governor of Britain, Sextus Julius Frontinus (*c.*74-78), who later wrote about survey, could have had a particular interest in it, and was possibly even a land commissioner (Dilke, 1971, 41; Campbell, 2000, xxvii-xxxi). It is also significant that Frontinus stressed the importance of straight lines and right angles in land measurement, features which are evident in the southern field boundaries (Campbell, 2000, 13).

The earlier field system to the west of the watercourse can be seen to extend under the *vicus* and to the southern edge of the survey area. It is probable that it extended up to the limits of the classified road, although the archaeological evidence has been either destroyed by ploughing, or in an ideal world covered by colluvium. The difference in character to those to the east implies either a different use or different tenants, who were possibly members of the indigenous population. The plot divisions to the east of the road leading south **(4)** suggest the character of the later burgage plots of the medieval period and retention of an existing successful agricultural regime. In many cases, buildings can be seen within their boundaries. The regularity of many of the field boundaries suggests that they were set out to a predetermined layout and are not the result of arbitrary division.

Although it is apparent that the fields have been laid out in a regular pattern, it is possibly subjective to try to relate the field dimensions to a unit of measure. Some evidence of the use of the *pes Drusianus* in military buildings on the Wall and elsewhere has been identified (Taylor, 2000, 41-42). Due to the small difference between the dimensions of a *pes Monetalis* and the *pes Drusianus* (296 mm and 333 mm; Duncan Jones, 1980, 85-98) comparison can be subjective and special pleading could be suggested for his hypothesis. This is due to the possible inaccuracy of any measuring device and the ability of the surveyor when setting out the boundaries. However, rather than concentrating upon units of length, the issue of area should perhaps be considered. The area of many of these plots falls within three approximate ranges; 650 m^2, 1250 m^2 and 2500 m^2 (respectively *c.*0.5, 1 and 2 *actus quadratus*). The *semi-actus quadratus* may even have been an accepted sub-division of land allocations, where good agricultural land was at a premium. It is also significant that many of the fields fall within the areas 1222 m^2 and 1276 m^2, and several of the larger fields are almost double the size of these stated areas.

It could be noteworthy that the width of the fields A and B measure approximately 150 and 500 *pes Drusianus* respectively (see Fig. 4). The size of the plots east of the watercourse, in many cases, falls between 500-600 m^2. One factor, which cannot be determined, and was proscribed by Roman access law, was the width of access roads or paths to a neighbour's property. This law, the *Lex Mamilia*, attributed to Julius Caesar, guarantees a width of a minimum of five feet leading to a neighbour's property (Dilke, 1971, 104-5). Presumably, this allocation was in force even, or especially, on frontier settlements and was removed from the tenant's or occupier's land allocation. The problem today is in determining which plot holder (and hence the field or enclosure) was the responsibility of which landowner or tenant. It follows that an individual's land allocation may appear smaller and not fall within the accepted surveyor's range, either in terms of length or area. However, it is generally accepted that each piece of land allows the boundary to stretch to a width of two and a half feet (Campbell, 2000, 23-5).

The late prehistoric period saw an expansion of agricultural settlement into the uplands, and extensive clearing of woodland has been dated to the first decade of the first century A.D. (Woodside and Crow, 1999, 30). Evidence of cultivation and field systems can be seen beneath most of the forts *per lineam valli*, and Roman field systems have been identified at Housesteads (*ibid.*, 33). It is apparent that much of the land on the line of the Wall was being cultivated prior to its construction (Bidwell and Watson, 1996, 8-17; Bennett, 1998, 19). The Romans would have found on their arrival well-established arable cultivation almost certainly growing higher yielding spelt wheat (predominant in the North; van der Veen and Palmer, 1997, 163-182) and barley (Huntley, 1999, 49-64). Both wheat for men and barley for animals were staples which could be requisitioned from the civilian population under a system known as *frumentum emptum* (Rickman, 1971, 271), not necessarily at disadvantageous terms. When the forts on the Stanegate frontier between Carlisle and Corbridge were built, it is possible that new Romano-British settlements were established, attracted by the presence of the Roman army. Conversely, those settlements displaced by the Roman army, during the construction of the defensive works associated with the Hadrianic frontier, would have had to be resettled in a location dictated by the army. A further layer of dependency on the forts could have been created, with these settlements providing foodstuffs for the *vici* and the forts.

Examples of forts in a close juxtaposition with field systems are known at Old Carlisle and on the Antonine wall at Bar Hill and Carriden (Keppie *et al.*, 1995, 602-6). However, some authors propose an alternative view, that small fields in association with forts (e.g. Carriden) may represent some form of allotment by the Romans rather than the embodiment of an indigenous agricultural system (Armit, 2005, 62). Field systems of unknown magnitude have been identified to the west of the fort, at Carvoran, following an unpublished geophysical survey by the authors (Breeze, 2006, 280-281). Ditched enclosures to allotments and fields have been identified to the south-east of the fort at Brough-on-Noe (Dearne, 1993, 155).

A major road **(1)** joins one running south some 275 m from the road leading to the Vallum crossing. This road is wider than any other leading to the fort and bends towards the River Irthing, where it is likely that an unrecognised bridge was constructed. It is probable that this road joined the Stanegate, whilst the road running to the south headed towards Brampton Old Church. The presence of this

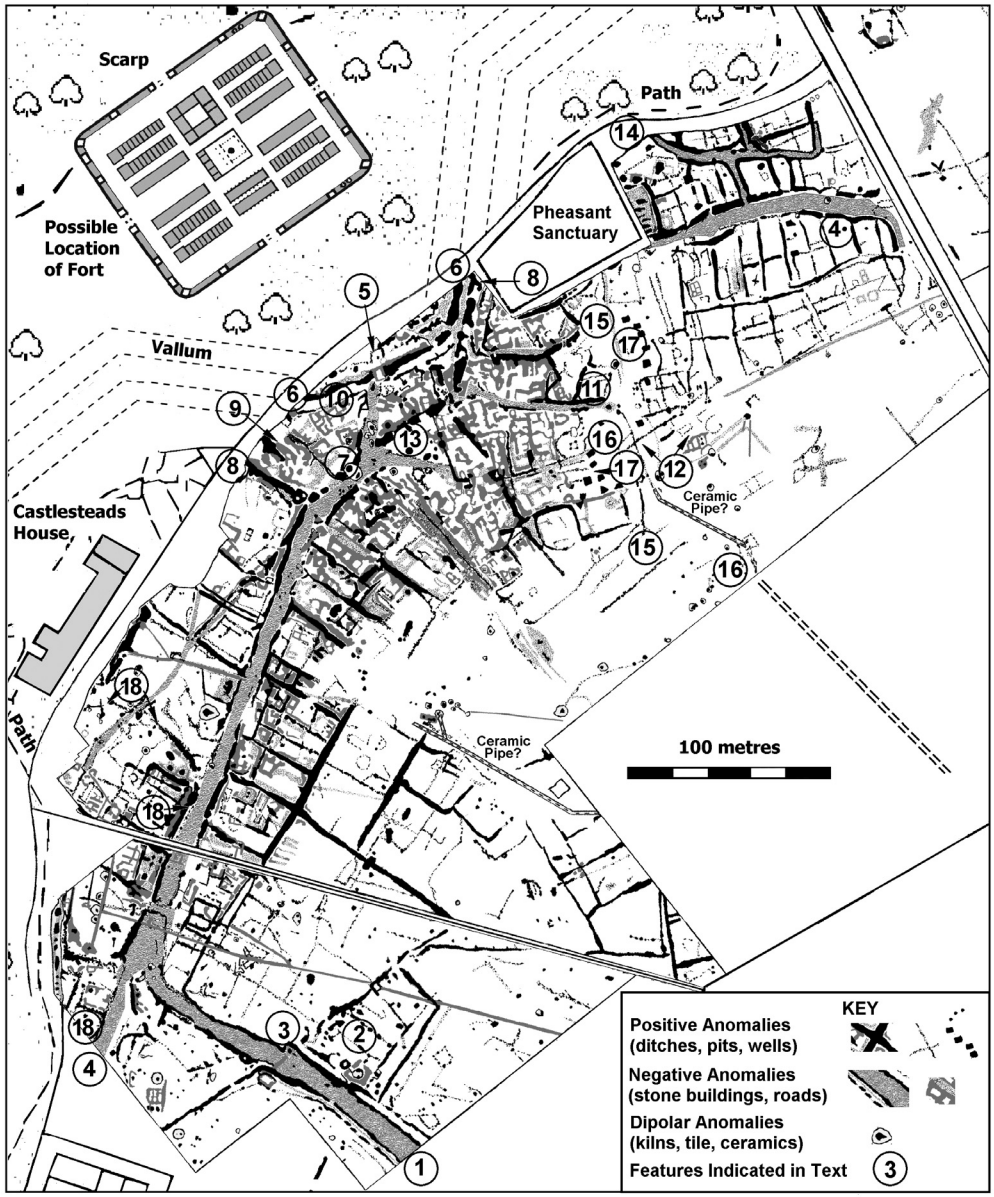

FIG. 4. Magnetic Anomaly Plan, showing details of the central sector of the *vicus*.

road from the south-east is surprising as it is not laid out on the axis of the known or any postulated earlier fort. The breadth of the major roads entering the settlement is wider and better defined than is known at other Wall forts such as Birdoswald, Carvoran and Housesteads and the associated site of Maryport (Biggins and Taylor, 2004a, b & c).

The road crossing the outer ditch from the fort changes direction at the edge of an open space, which has tentatively been identified as a possible market place.

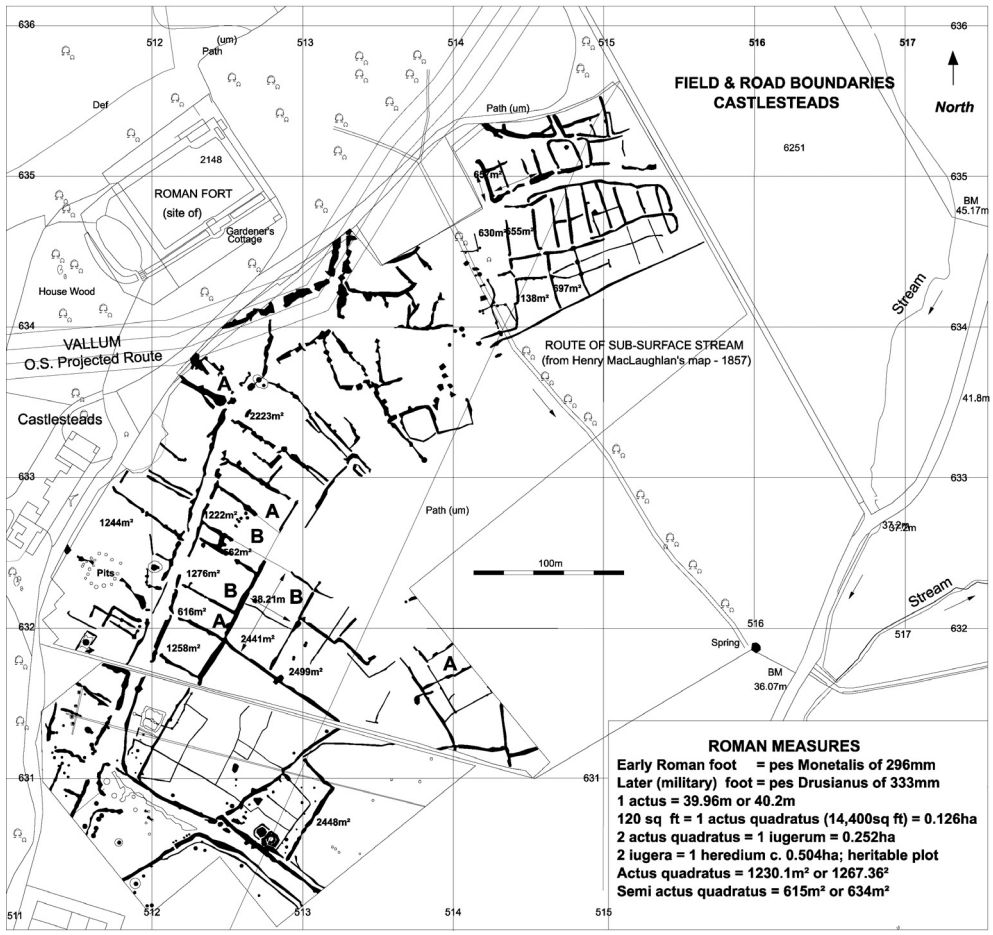

FIG. 5. Simplified field boundary and road plan, which shows major ditch systems, roads and tracks. Because of the complexity of the site and the obvious superimposition over previous constructional phases, only those features (perhaps capriciously) identified as belonging to later phases, have been measured with any certainty.

There are few apparent buildings in this area to the south of the outer ditch, and its importance is enhanced as it is the place where at least four roads converge. The absence of buildings is supported by the presence of clear undisturbed secondary field boundaries within the space. No market place is known to any *vicus* in Britain, although their existence has been inferred (Sommer, 1984, 39-40). A similar open space has been seen on the road leading west from the fort at Birdoswald (Biggins and Taylor, 2004a, 176). In this case, the road widens out to form an elliptical space close to the edge of the settlement.

A speculative model for the pre-Roman and Romano-British occupation of the site at Castlesteads can be tentatively put forward. Millett (1994, 44) has hypothesised that Rome dealt with the British tribes by a combination of threats, promises, and military action. Their reward for co-operation with the Roman army could have been independence within prescribed limits. Seen in the context of the

Stanegate frontier, the Romans would have secured the obedience of the indigenous settlements to the north. These communities may not have been cleared from the Wall corridor, as is often argued, but obliged to supply the Roman army, certainly with food, and possibly in the form of conscripted labour or troops (Breeze, 1984, 277). It is revealing that the Romano-British settlement of Milking Gap, situated between the Wall and the Vallum, is dated to 122-180 (Woodside and Crow, 1999, 44, 111). Additionally, or alternately, taxation may have been levied: an example is that of the Frisii, who were taxed in the form of commodities such as ox-hides (Tacitus, *Histories, V,* 25).

The prehistoric settlement at Castlesteads was built in a strategic position and probably also occupied the low hill to the north-east of the fort. The change in the field patterns, possibly prior to the building of the Hadrianic fort and settlement, may suggest a change in the management of the agricultural pattern brought about by the involvement of the Roman army. It is known that the Roman army was allocated land around fortresses to provide essential materials. At the Legionary fortress of Xanten in Germany the area, the *territorium*, was not less than 3,400 ha. or 8,500 acres (Petrikovits, 1960, 63). Estimates of British *territorium coloniae*, for much larger settlements, are implied at Colchester (1,100 ha), York (900 ha), and Lincoln (900 ha) (Rodwell, 1975, 98). Whilst at Chester-le-Street, the only known example of a frontier auxiliary military *territorium* is noted (RIB 1049; dated to A.D. 216), but gives no indication of the size. The authors, following a survey of the Roman fort and *vicus* at Maryport, suggest that a substantial ditch surrounding the *vicus* could delineate the limit under absolute military control of some 90 ha. (Biggins and Taylor, 2004b, 128).

Whether the apparent change of pattern, seen in the creation of smaller fields, but based upon the original Iron Age model, could have reflected the growing of different crops to feed the army, is a speculative hypothesis. Who controlled, or even farmed the fields close to a fort is also uncertain. When the decision was taken to construct the Wall, the site chosen for the fort at Castlesteads, in view of its strategic position, was founded on what was probably a Romano-British settlement. The gentle, southern facing slope with fertile soil would have provided an ideal settlement environment. Whether an earlier Stanegate fort was already *in situ* is largely conjectural; this hypothesis is supported by evidence of a major road system being offset from logical access to a "later" fort. It is possible that a conscious decision was also taken by the pragmatic Roman military, in laying out the settlement, to retain part of the existing field systems for agricultural use, either by the soldiers themselves or the indigenous population.

Conclusion

The size of the settlement shown is small, and there could probably be less than 60 buildings indicated on the magnetometry image. The possibility arises that the settlement may extend much further to the west and follow the line of the Vallum, outside the limits of the survey. The present known extent is some 750 m along the largest axis of the survey. The Vallum may not have been left open away from the fort for any extensive period, and further survey to the north and west of Castlesteads House could clarify this very important point. It can be strongly argued

that, at Castlesteads, the Roman fort and *vicus* was founded on a Romano-British settlement, and that the field system continued to be maintained and modified. Much more research needs to be carried out in the areas surrounding the Wall forts to establish the degree of interaction between the Roman army and the native population.

This evidence of the field systems identified on the Wall would tend to discount the proposal put forward by Sommer (1984, 38) that agricultural activity in the military *vici* of the Highland Zone can be decried, and only small scale vegetable growing agriculture was demonstrated. The probability is that extensive field systems will prove to have been established at all the Wall forts, but this evidence is becoming rapidly degraded by modern agriculture and building programmes.

The size of the identified *vicus* is much smaller than those detected elsewhere and associated with the Wall at Birdoswald, Housesteads, Chesters, Vindolanda, Halton Chesters and Corbridge, yet the field systems are considerable in extent. It is manifest that the scale of any field systems, and other features around the forts indicated with larger *vici*, will have been much greater in extent. At the present time there is very little archaeological research being carried out on the Wall and no agreed inclusive research agenda (November 2006). This is despite the Wall being a World Heritage Site with tourism being actively encouraged. The full extent of the archaeological deposits around the forts listed above is unknown and it is almost certain to extend beyond those limits presently assumed.

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