The evidence was that in this stretch there was an acceptance (Breeze and Dobson 2000, 131). The date later put on this operation was the 42nd mile. This was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 75). Excavations at Cockmount Hill in 1939 across the axis of a crossing (J Roman Studies 1940, 163-5) showed that the sides had eroded rapidly and growers had taken the material from the breach made in the mounds back into the ditch to create a crossing. It was this that was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 67-8) another causeway was encountered, and it seems likely that the fill of the Vallum ditch observed at Crosby-on-Eden was also primary to the construction of a crossing. Based on observations between Wall Burn and Whittledean, Shaw and Simpson concluded that the Vallum was reconditioned (Simpson and Shaw 1922, 414-16). The form of the ditch here – casts grave doubt on the interpretation of the marginal mound as resulting from a re-cut. The systematic slitting of the Vallum with causeways every 41m (45yds) or thereabouts, and has been fully discussed by Simpson and Shaw (1922) and by Brenda Heywood (1965). The causeways were presumably constructed by chucking the excavated material from the breach made in the mounds back into the ditch to create a crossing. This was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 75). Excavations at Cockmount Hill in 1939 across the axis of a crossing (J Roman Studies 1940, 163-5) showed that the sides had eroded rapidly and growers had taken the material from the breach made in the mounds back into the ditch to create a crossing. It was this that was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 67-8) another causeway was encountered, and it seems likely that the fill of the Vallum ditch observed at Crosby-on-Eden was also primary to the construction of a crossing. Based on observations between Wall Burn and Whittledean, Shaw and Simpson concluded that the Vallum was reconditioned (Simpson and Shaw 1922, 414-16). The form of the ditch here – casts grave doubt on the interpretation of the marginal mound as resulting from a re-cut.

The most variable factor of the milecastles is currently understood. In the 13th edition of the 'Handbook', Charles Daniels certainly swung towards the view that it was the common object of these structures. The date later put on this operation was the return from Antiquae Scotiae. This interpretation has enjoyed general acceptance from acceptance (Breeze and Dobson 2000, 131). The evidence was that in this stretch there was an acceptance (Breeze and Dobson 2000, 131). The date later put on this operation was the 42nd mile. This was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 75). Excavations at Cockmount Hill in 1939 across the axis of a crossing (J Roman Studies 1940, 163-5) showed that the sides had eroded rapidly and growers had taken the material from the breach made in the mounds back into the ditch to create a crossing. It was this that was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 67-8) another causeway was encountered, and it seems likely that the fill of the Vallum ditch observed at Crosby-on-Eden was also primary to the construction of a crossing. Based on observations between Wall Burn and Whittledean, Shaw and Simpson concluded that the Vallum was reconditioned (Simpson and Shaw 1922, 414-16). The form of the ditch here – casts grave doubt on the interpretation of the marginal mound as resulting from a re-cut. The systematic slitting of the Vallum with causeways every 41m (45yds) or thereabouts, and has been fully discussed by Simpson and Shaw (1922) and by Brenda Heywood (1965). The causeways were presumably constructed by chucking the excavated material from the breach made in the mounds back into the ditch to create a crossing. This was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 75). Excavations at Cockmount Hill in 1939 across the axis of a crossing (J Roman Studies 1940, 163-5) showed that the sides had eroded rapidly and growers had taken the material from the breach made in the mounds back into the ditch to create a crossing. It was this that was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 67-8) another causeway was encountered, and it seems likely that the fill of the Vallum ditch observed at Crosby-on-Eden was also primary to the construction of a crossing. Based on observations between Wall Burn and Whittledean, Shaw and Simpson concluded that the Vallum was reconditioned (Simpson and Shaw 1922, 414-16). The form of the ditch here – casts grave doubt on the interpretation of the marginal mound as resulting from a re-cut. The systematic slitting of the Vallum with causeways every 41m (45yds) or thereabouts, and has been fully discussed by Simpson and Shaw (1922) and by Brenda Heywood (1965). The causeways were presumably constructed by chucking the excavated material from the breach made in the mounds back into the ditch to create a crossing. This was demonstrated by excavation at Wallhouses (Bennett and Turner 1983, 75).
All of the milecastles to the east of the River Irthing (up to and including Mc48) were constructed in stone, but those on the south side of the Irthing (Mc49–80) were built initially with turf or earthen ramparts and timber gate towers (Breeze 1982, 76). The Turf Wall milecastles were in stone, at the same time as the stone curtain wall replaced the Turf Wall. In the final analysis they tended to be larger and more square than their Stone Wall counterparts. West of Birdoswald, where the new Stone Wall was built at a distance of up to 200m north of the Turf Wall between Mc49 and Mc51, a completely new stone milecastle (Mc50, High House) was provided directly to the north of the Turf Wall (Hill 1989a, 167). In the Stone Wall sector, the milecastles and turrets are known to have been constructed together with the foundations of the advance of the stone curtain Wall itself (p 72); the situation on the Turf Wall is less clear, although the freestanding stone turrets were certainly built before the turf curtain. It is probably the case that the milecastles of the Turf Wall were built with the curtain in order to ensure effective use of the available building material. On the Stone Wall, the milecastles and turrets were provided with short wall wings built to the broad gauge of 3.05m (10ft) in order to allow the Broad Wall curtain to be bonded to the structures. West of the North Tyne the Wall width was reduced to the so-called Narrow Wall (p 67), in order to suit it (p 72). Where this meets the wing walls of the original structures creates the vertical offsets or ‘points of reduction’ visible on the south face of the Wall.

Historigraphy

The historigraphy of these aspects of mural studies was magisterially presented by Eric Birley (1961), but a short summary is now in order. There were several attempts to date the construction of the Wall. The first was that of the 1850s (Garthwaite). The term was finally established by Percival Ross (1904) (to the exclusion of synonyms such as ‘castle-stead’, which Bruce had continued to employ (Birley 1961, 90)).

The correct number of milecastles was first theoretically put forward by John Horsley (1732, 119). Clayton’s work on Mc42 was the first of a series of publications (1853, 67) that extended the logic of even spacing and the finding of appendages to the murus’ (Hodgson 1840), and established for certain that it was the building of the milecastles that was the received view, as expressed by Bruce (1853, 67), had been that there were generally single stone gateways. However, Horsley suggested several views of Mc42 in 1877 and 1891 (Figs 114, 116–18). The twin gates were confirmed as a fundamental part of the design of all milecastles by Clayton’s subsequent work at Mc57 (Housteads) in 1853 and Mc39 (Castle Nick) in 1854. Coates also recorded these sites (Figs 108–110). Although Francis Havers (1900, 169) had already suggested that the three legions (Birley 1961), but a short summary now established. For the reconstruction Mc37 (Harrow’s Scar) in 1898, it remained for J P Gibson and P G Simpson (1911) to produce the first outline plan of Mc49 (Mc50TW).

A further complication in this story has recently been advanced in an important study by Simpson et al (1936b). They have presented an apparent that some milecastles were constructed to the Broad Wall standard, with all four walls being of broad dimensions. Others are built to Narrow Wall standard, often with a broad north wall, continuing the Broad Wall curtain, and with east, west and south walls built to narrow gauge. The distribution of wholly Broad Wall milecastles is an irregular one, falling into three groups. These Symonds associates with the logical constructions, agreed that Broad Wall milecastles were completed first, before the decision to go to Narrow Wall gauge (p 72). It is clear that particular branches in the Appletree sector do not suggest that large timber was plentiful. The sort of hurdles that might have been woven from the pollen work suggests materials from which hurdles might be woven, and with particular blocks. He suggests that these were completed early in order to garrison the potentially vulnerable corridor between the Turf and the Irthing (an idea first hinted at by Breeze and Hooley (1968, 109), who referred to Mc437 as a prototype). The pollen work suggests that there may have been activity on the Wall in the latter part of the 1st century.

The general appearance of milecastles is now well studied. The milecastles of the Turf Wall, the key site is Mc50TW (High House), and the reconstruction of the earliest milecastle drawings for Mc39 by Simpson et al (1936b) has been very influential. Here the milecastle walls were some 6m thick (20 Roman feet) at the base. From the section of Turf Wall found near by, it was estimated that the Turf Wall, and thus the milecastle on the north side of the Turf Wall (p 126) in the height, with the front of the wall almost vertical and the rear sloped at an angle of 1/4. The distribution in detail has been modernized in recent years, when the shifting of the forts in the 1st century changed from being sited to secure the forts onto the line affected the construction of the Wall by the decision to bring the forts onto the line affected the construction of milecastles, and that this disruption in the logic of even spacing and the finding of appendages to the murus’ (Hodgson 1840), and established for certain that it was the building of the milecastles that was the received view, as expressed by Bruce (1853, 67), had been that there were generally single stone gateways. However, Horsley suggested several views of Mc42 in 1877 and 1891 (Figs 114, 116–18). The twin gates were confirmed as a fundamental part of the design of all milecastles by Clayton’s subsequent work at Mc57 (Housteads) in 1853 and Mc39 (Castle Nick) in 1854. Coates also recorded these sites (Figs 108–110). Although Francis Havers (1900, 169) had already suggested that the three legions (Birley 1961), but a short summary now established. For the reconstruction Mc37 (Harrow’s Scar) in 1898, it remained for J P Gibson and P G Simpson (1911) to produce the first outline plan of Mc49 (Mc50TW).

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A great deal of recent literature on turrets has been concerned with their reconstruction, particularly of that of the Wall. This literature is also relevant to the calculation of the height above ground level of the floor of the tower above the milecastle gate arch (Hill and Dobson 1992, 47). If two storeys were proposed for the flat roof of the wall, then this calculation also gives the wall top height. Both methods of reasoning arrive at an original design height of 15 Roman feet (4.44m). Internal buildings in the milecastles are in two storeys above the top height. Both methods of reasoning arrived at a wall height of 15.8m x 0.3m. The smaller building is usually found singly, and is divided into two rooms; the larger type is usually built in pairs, and divided into four rooms – two examples are Mc47 and Mc48 (Breeze and Dobson 2000, 35; Symonds 2005). Small variations in size have been summarised by Bennett (ibid) who first reasoned that the size of the buildings to a possible garrison of 10-11 men.

Gabled roofs are, after all, simply turrets with gates and entrances which are, after all, simply turrets with gates and entrance. This literature is also relevant to the reconstruction, particularly that of their existence of road metalling on the berm. The question of the height of the walls of the Antonine Wall must imply crossings of the ditch at these points. The removal of the gates means of smashing the pivot stones at this time is well attested (cf Allason-Jones et al 1994, 233).

Bidwell (1999, 35) has recently pointed to the lack of evidence for causeways over the ditch at milecastles and seems to doubt their existence except where archaeologists have logically demonstrated. The only milecastle to show excavated evidence for causeways are MCPTW (High Hri), and Mc39 (Castle Nick) (Crow 1988, 151), where no roofing slate or tile was found among recaptured debris from the structures. Bennett (1983, 44) suggested that turrets were flat roofed, following his examination of the castellations, although later Bennett (1987, 137) suggested that low pyramidal roofs sheathed in lead and surrounded by a passageway, albeit a controlled passageway, rather than to prevent it, and it is this view which does not require such crossings. He goes on to point out (ibid) that the “removal of milecastle gates when the Wall was replaced in favour of the Antonine Wall must imply crossings of the ditch at these points”. The removal of the gates means of smashing the pivot stones at this time is well attested (cf Allason-Jones et al 1994, 233).

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On the other hand, the milecastles, with their substantial gates and internal buildings, contain complex and informative fabric, stratigraphic and structure sequences. The more complete milecastle excavations have shown considerable variety in the number, types, and sizes of internal buildings. They have produced differentiable phases of occupation, building, and the opening or blocking of gates in as many as six different phases of occupation, building, and whether it actually extended as far as the western end of Hadrian’s Wall. Following the discovery of the Turf Wall in the Birdoswald–High House area, this question became important in the final unravelling of the history of the line, and whether it actually extended as far as the western end of Hadrian’s Wall.

The second area in which many interval structures are identified is in the western area of Newcastle upon Tyne. When Collingwood and his colleagues decided to make a jump to the far end of the Wall turret, and the point was proven successful, T79b was found to be a Turf Wall, and would afford positive proof of the Turf Wall’s existence. This approach was taken by Simpson’s team at Mc78 (Dewsbury), and Mc79 (Solway House) (Haverfield 1888; Frere 1891, 1911), Mc49 (Harrows Scar) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b; Mc47 (Chapel House) (Simpson et al 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b; Mc47 (Chapel House) (Simpson et al 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b; Mc47 (Chapel House) (Simpson et al 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b; Mc47 (Chapel House) (Simpson et al 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b; Mc47 (Chapel House) (Simpson et al 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b; Mc47 (Chapel House) (Simpson et al 1936b, 270–2), Mc48 (Poltross Burn) (Haverfield 1888; Frere 1891, 1911), Mc67 (Newtown-of-Irthington) (Clayton 1855b; Simpson et al 1936b, 268), Mc76 (Simpson 1936b, 280, 1986, 376 ff; 1987, 316; 1988, 434), Mc40 (Windsorshields) (1976, 86–98), Mc42 (Cawfields) (Clayton 1855b;
In 1998 one of the authors prepared a proposal (Austen 1998) for a project to assess and evaluate the milecastles under apparent threat. Thirteen of the original 81 milecastles on Hadrian’s Wall were identified in this paper as being under potentially damaging land regimes, principally cultivation of cereal crops, either in rotation or annually. A proposed programme of field evaluation to investigate the condition of the remains and their vulnerability to further cultivation was put forward. The precise locations of four of these milecastles had not been established hitherto. During 1999 the proposal was adopted by the Central Archaeology Service of English Heritage as a strategic project on the World Heritage Site, which would be useful more generally in informing ongoing investigations into the impact of ploughing on archaeological monuments.

A project design was therefore drawn up for the work (Austen and Wilmott 1999), and the project was carried out during the late summers of 1999 and 2000. The objective of the fieldwork was principally to provide data to inform discussions with the land owners and managers of these milecastles concerning their future management, although it was recognised also that new archaeological information would also be recovered. The management recommendations appeared in a series of interim reports (Moore and Wilmott 2001b–c; Wilmott 1999e–j; Wilmott 2001b–e) which were distributed to site owners and archaeological curators. The present paper is written to disseminate the archaeological information recovered and to set the work on each site into its broader research context.

Site selection

Nine known sites were identified where at least a part of the milecastle was in potentially damaging land use. These divided neatly between east and west, with the eastern sites (Mc9, 10, 14, 17 and 19) being under arable cultivation and the western (Mc62, 63, 78 and 79) being ploughed in rotation. Two unlocated milecastles (Mc58 and Mc59) were also initially considered for the study, but their measured sites were subsequently reseeded as permanent pasture, averting any further threat. During 2000, Mc71 was identified as a further example of a milecastle site potentially under threat from regional ploughing, and it was therefore added to the list. The sites examined and reported on here are therefore the actual or theoretical sites of Mc9, 10, 14, 17, 19, 62, 63, 69, 70, 71, 78 and 79.

General methodology

The methodological approach adopted varied from site to site, and details of this appear in the individual site summaries that follow.

The unlocated milecastles were sought through geophysical survey. It was felt that the survey carried out within the Crosby-Eden project on Mc68, 59 and 61–63 was adequate to inform field evaluation on Mc62 and Mc63, while new surveys were commissioned for the two alternative possible sites of Mc69 and Mc70. At Mc63 a programme of test-pit digging was used to locate the milecastle, as the results of geophysical survey were not conclusive. Mc70 was so inconclusive that no field evaluation took place. At all other sites a series of trenches – from one to five – were excavated. The brief was to excavate through overlying plough strata or later disturbance to the top of intact archaeology, to record the archaeology, and to backfill the trenches. All trenches were hand excavated, and also backfilled by hand, except in the cases of Mc71 and Mc78, where the respective farmers kindly undertook mechanical backfilling. In all cases new information was retrieved through this process, as the remains of old excavation trench backfill (Mc62, 78 and 79) or of robber trench fills (Mc10, 14 and 78) were permanently destroyed.

Milecastle 9 (Chapel House): 2000

The site Mc9 is on the western side of a ridge of high ground to the east of Blucher village (NZ 1795 6627). The internal measurements of the milecastle were 14.9m east–west by 18m north–south. The foundations of the side walls were 3.1m wide, the same as the Broad Wall in this sector. This was the first Broad Wall milecastle to be thoroughly examined, although some work also took place around the same time on Mc10 (Walbottle Dene) (Spain 1930). It was found that a great deal of the north wall and the western part of the south wall had been almost completely destroyed. Several stones of the uppermost face of the south wall remained, at least two with inscribed Roman numerals on the faces. A single course of each face of the east wall, of large blocks, survived in good condition. The wall core was of clay and rubble, as was the foundation, although the east wall was mortared. Enough mortar survived to demonstrate that the wall above the facing course was offset by c. 18mm north–south. The foundations of the side walls were 3.1m wide, the same as the Broad Wall in this sector. This was the first Broad Wall milecastle to be thoroughly examined, although some work also took place around the same time on Mc10 (Walbottle Dene) (Spain 1930). It was found to be in poor condition, and the western part of the south wall had been almost completely destroyed. Several stones of the uppermost face of the south wall remained, at least two with inscribed Roman numerals on the faces. A single course of each face of the east wall, of large blocks, survived in good condition. The wall core was of clay and rubble, as was the foundation, although the east wall was mortared. Enough mortar survived to demonstrate that the wall above the facing course was offset by c. 18mm on each face, and was therefore 2.62m wide. The south-east angle was robbed, but the shape of
The corner was rounded both inside and out. Little was left of the south gate, although the eastern pivot hole in the footing course of the gate jamb and the gate sill were intact. The sill, although the photographs show it much worn (Birley 1930a, pl xlv, fig 2), retained the upstand against which the inward-opening door shut. The gate passage was contained within the thickness of the wall.

The primary road through the milecastle was constructed of earth and gravel with a drain associated with it survived. Although most of this road was subsequently ploughed away, a drain associated with the laying of a flagstone floor in one of the rooms. In the ‘second period’ this building was extended by at least one additional room to the north. At the same time a clay and flag floor was laid in the original building, and the door sill was raised to provide a higher threshold.

West of the road there was clearly considerable disturbance, and the sequence is less clear. The published photograph (Birley 1930a, pl alvi, fig 2) suggests that the archaeology was fragmentary, but rather more complex than the report indicates. Certainly early post holes were found, and although these were 76mm in diameter and as much as 254mm deep, they did not extend into the undisturbed subsoil. The published plan shows two rows about 1.8m apart of at least three post holes. This is clearly not wide enough to represent two walls of a building, and no firm conclusion was reached as to their function. In the second period, a stone building was erected of which a threshold and parts of the east and west walls only survived. This lay 1.05m from the road edge, from which it was separated by a kerbed path.

Mc9 is one of the few examples where external areas have been excavated. The burial of a male youth was discovered close to the south wall of the milecastle. It was aligned with feet to the east, and was laid out parallel with the milecastle wall. The fact that the head was missing appears to result from later disturbance rather than from deliberate decapitation. Although interpreted as Roman, it may have been of early post-Roman date, and the same may be true of the parts of two further bodies found near the south-east corner. To the south of the milecastle, 9.6m from the south wall the north kerb of the Military Way was located in a trench that extended 15.6m southwards from a point midway between the gate and the south-east corner. This road was at least 5.4m wide, with a branch road 4.8m wide forking “from the east to the gate of the milecastle”. Despite the length of this trench, no sign was found of an encircling ditch.

Several small finds were recovered, including four coins ranging in date from one of Julia (AD 79–81) to one of Valentinian I (364–75); a second century brooch; a sword scabbard shape; part of a sculpture of a female figure within a conventionalised temple, possibly one of the Door Maidens; a portion of a gaming board; and several mill stones. Pottery dated from the 2nd to the 4th centuries AD, material from the later period including both Crambeck and Huntcliff wares.

The dating of the two ‘periods’ identified in the work was interpreted in terms of the Wall Periods, which were formally promulgated in the paper that includes the report (Birley 1930a). These structural periods were therefore attributed to the reigns of Hadrian and of Severus. The pottery report would seem to confirm that this is broadly correct, or at least that the second period is indeed late 2nd–early 3rd century AD. The later finds attest to occupation into the later 4th century, although the structural and stratigraphic evidence for these periods had been removed by ploughing prior to 1929.

The evaluation

After alterations to the road system since 1929, very little of the milecastle remained within the ploughed field, and it was felt that a single T-shaped trench would sample both the east and south walls. The east–west bar of the ‘T’ was 9.5m long, and the north–south bar 6m long. Both were 2m wide. Excavation was carried out entirely by hand, and the intention was to excavate to the top of intact Roman archaeology insofar as this survived the 1929 disturbance, and the sequence is less clear. The published photograph (Birley 1930a, pl xlvii, fig 2) suggests that the archaeology was fragmentary, but rather more complex than the report indicates. Certainly early post holes were found, and although these were 76mm in diameter and as much as 254mm deep, they did not extend into the undisturbed subsoil. The published plan shows two rows about 1.8m apart of at least three post holes. This is clearly not wide enough to represent two walls of a building, and no firm conclusion was reached as to their function. In the second period, a stone building was erected of which a threshold and parts of the east and west walls only survived. This lay 1.05m from the road edge, from which it was separated by a kerbed path.

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excavations. In order to clarify the stratigraphy, and to distinguish between excavation fill and intact stratigraphy, the northern metre of the east–west bar, and an area in the south-west corner of the north–south bar were excavated to a greater depth than the rest of the trench. All recording was carried out according to the methods currently in use in English Heritage’s Centre for Archaeology.

**Structures and stratigraphy**

The trench sampled parts of the excavated area, and areas of previously un-examined stratigraphy. The edges of the 1929 excavation were clear (Fig 238). The portion of the trench within the 1929 area included the east wall of the building on the eastern side of the milecastle, the east wall of the milecastle, and its robbed south-east corner. The method of the original excavator appears to have been to clear the interior of the milecastle of its horizontal stratigraphy, while leaving the walls of interior buildings upstanding. The photograph taken at the time (Birley 1930a, pl xlii, fig 1) demonstrates that the stratigraphy above the exterior milecastle walls was left in situ, and only the faces of the surviving facing stones were exposed.

**Pre-Roman strata**

The natural subsoil was not encountered in any part of the excavated area, even within the edges of cut features, such as the ditch to the east of the milecastle (Fig 239). The milecastle was built on a layer of yellow clay (1212–1219=1222). (Hereafter, such numbers refer to the layer or context numbers used in the excavations records.) This clay was the uppermost element of a series of strata at least 450mm deep comprising alternating layers of yellow clay (1212–1219=1222, 1224,1226) and brown silty soil (1223, 1225) (Fig 239).

**Roman structures and deposits**

The footings of the milecastle walls were 3.16m thick. The wall core (1201) consisted of 40% angular sandstone rubble up to 200mm in a matrix...
of yellow-brown mottled clay, although some fragments of grey mortar were found in the core, suggesting that at least part of it, had been mortar bonded. This was faced with grey sandstone blocks (1213, 1215, Fig 238), which were dressed to a good square face some 390mm square, but were otherwise roughly dressed, and which tapered back from 700mm-1.05m into the core.

The facing stones were bonded with clay similar to that in the core, but the stones of the inner face of the east wall retained mortar on the top surface, which had bonded the next course to the footing. As Birley (ibid, 153) observed, this mortar showed that the actual wall face had been set back from the face of the bottom course. In the present excavation this offset was measured at 140mm wide. Birley’s photographs show a similar offset on the east face of the east wall of the milecastle, which had been cut to remove stones from the west face of the wall.

The edge of the 1929 trench (1210) lay 950mm east of the east face of the east wall of the milecastle, and the disturbed and mixed sandstone of the backfilling of the excavation (1204, 1203) was found in between the standing Roman walls. The excavation trench had been cut through an irregular surface layer of grey-brown silty loam (1200-1202) containing fragments of sandstone rubble, including a considerable concentration of such material close to the eastern milecastle wall (1205) and ranging from 290mm to 350mm in depth. The active plough soil above the archaeological deposits (1207) was uniformly 220mm deep, and clearly represented the depth of ploughing that had occurred during the period since the 1929 excavation. Beneath this, the surface of archaeological deposits was scored by parallel plough marks (1208) up to 10mm deep.

Post-Roman deposits

A deposit of loose, mid-brown sandy material containing up to 50% sandstone rubble lay over the exterior stone surface. It had originally been banked up against the milecastle walls (E wall, 1211; W wall 1209), and appears to have comprised destruction debris from the collapse or robbing of the structure. It can be inferred from a reading of Birley’s report (ibid, 154) that this material sealed the subsoil beneath the east wall that was excavated in 1929. Within the intact stratigraphy over the east wall, most of which comprised the clay and rubble wall core, the eastern edge (1216) and stony fill (1208) of a pre-1929 robber trench, which had been cut to remove stones from the west face of the wall was defined.

The edge of the 1929 trench (1212) lay 950mm east of the east face of the east wall of the milecastle, and the disturbed and mixed sandstone of the backfilling of the excavation (1204, 1203) was found in between the standing Roman walls. The excavation trench had been cut through an irregular surface layer of grey-brown silty loam (1200-1202) containing fragments of sandstone rubble, including a considerable concentration of such material close to the eastern milecastle wall (1205) and ranging from 290mm to 350mm in depth. The active plough soil above the archaeological deposits (1207) was uniformly 220mm deep, and clearly represented the depth of ploughing that had occurred during the period since the 1929 excavation. Beneath this, the surface of archaeological deposits was scored by parallel plough marks (1208) up to 10mm deep.

Milecastle 9: stone gaming board fragments

Pottery (Austen 2006) was found chiefly in reworked contexts comprising either pre- or post-1929 topsoil (1202, 1205, 1207) and the backfill of 1929 excavation trenches (1203, 1204). Most of this was of medieval and post-medieval date. Unstratified Roman material comprised a fragment of amphora handle, two BB2 sherds (late 2nd-early 3rd century AD), a very abraded sherd of BB1 and four sherds from Yorkshire calico-printed jars (late 3rd-4th century AD). The only stratified pottery was a single body sherd of BB2 of an undiagnostic form (Antonine–3rd century) from the upper fill of the eastern ditch (1220).

Eighty-one animal bone fragments were recovered. Most of the material belonged to cattle (skeletal elements present include, among others, metapodials, radius, femur, patella, ischium) but also a few remains of pig and ovicaprids. There were also some small carinated bowls and some calcined fragments. The state of preservation of the bones varied from relatively fresh to weathered with rounded edges, suggesting a number of different depositional histories. It cannot be certain which (if any) of the material is of Roman date (Winwood 2001).

Interpretation

The banded strata that pre-date the construction of the milecastle are probably the most significant new discovery on the site. There are a number of possible interpretations. One is that they were laid as a building platform in preparation for the construction of the milecastle. It is also feasible, however, that...
there are certainly related in some way.

Milecastle 10 (Walbottle Dene): 1999

The site

Mc10 was discovered in 1864, when the bridge over Walbottle Dene was renewed. A strip of Wall four courses high, including a milecastle gateway, was exposed on the east side of the Dene (NZ 1648 6675). As Bruce (1867, 123) reported: “unhappily it was found necessary entirely to remove the Wall, but the remains of the gateway have been preserved, and for its better protection the fence of the garden opposite has been brought forward to enclose it.”

The north gate is still extant within the garden at Walbottle Dene House, immediately north of the B6318 road. The central part of the milecastle lies beneath the road, but the southern part is faintly visible as a platform higher than the surrounding land at the weighbridge of the garden. The gate was examined in October 2001, and a technical report on the gateway submitted for inclusion in the site archive (Hill 2001b). The following account summarises and discusses the full technical report. The assessment of this gateway gave a rare opportunity to examine a gateway unsworn by the feet of modern visitors. It was impossible to take full advantage of this owing to its location in a thick and prickly shrubbery, but some useful information has been gained. The purpose was to examine the tool marks and method of working in order to gain precise technical information about the standard of workmanship, the abilities of the builders, and the standard of supervision and overall direction of the work, and from this to see if further light could be shed on the history of the Wall. The stone-by-stone survey was made on an objective basis without regard to any received opinion. Due to the difficulty of access the judgements made must be seen as provisional.

No trace of a southern ditch was found. It is thus improbable that the ditch found in 2000 is, as first assumed, part of a ditch system that surrounded the milecastle (unless the 1929 trench went through an entrance). The stratigraphic relationship is, however, unambiguous and the milecastle and ditch are certainly related in some way.

An examination of the site in 1928 was reported by Spain (1930, 533), stating that the milecastle had walls of “the same massive construction and thickness of the Great Wall” (ie 3.1m), and that this was identical to Mc9 (Chapel House). The implications of these two adjacent Broad Wall milecastles has recently been considered by Symonds (2005, and p 139). A fragment of the curved south-west corner and the south gate were located. These were also very small and in construction to Chapel House. Mc10 is a long-aisle milecastle measuring some 17.6m by 14.32m internally (ibid). Like Mc9, the gates are of Type IV, with a single pair of gate responds. Nothing has hitherto been known of the interior layout of Mc10.

In addition to the evaluation work, the opportunity was taken to undertake a stonemasonry survey on the extant stonework of the north gate.

The north gate

by Peter Hill

The north gate of Mc10 lies in the thick shrubbery of Walbottle Dene House, close to the boundary with the road. It has remained unexamined since its discovery, and Bruce’s illustration of it (Fig 244) is the only known record. Owing to its location, access is extremely difficult, and drawing a reliable plan is not easily possible. The plan in Fig 246 is therefore somewhat schematic, based upon the measurements of the stones made on site.

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North east pier

This pier now consists of two foundation blocks (NEF1 and NEF2) and one pier stone. The stone that formed the quoin of the pier (NEF1) has been lost; the surviving stone is probably in its original position and has been designated NE1 12.

NEF1 (765mm × 810mm × 100mm to ground level) The visible parts of the stone are much weathered apart from the north face, which shows heavy punch furrows, range up to 10mm. This face projects some 90mm from the north face of the surviving pier stone. The top bed appears to be about straight, and the joint to the sill is tight and was probably worked with some care. The major feature of interest is the pivot hole for the gate. It is a sub-rectangular sinking on the south edge of the stone, 185mm wide and 115mm front to back. It is some 40mm below the top bed of the stone, and the base of the pivot hole about 30mm below that. The western edge of the sinking is about 7mm from the edge of the stone and EFF1. The pivot must have been contained partly in the very wide joint between this stone and the first foundation stone of the passage wall. The base of the 95mm diameter pivot hole is somewhat smoothed and more or less flat, although it rises a little to the west side. No tool marks are visible in the pivot hole except for a single peck on the western edge; the sub-rectangular sinking shows a number of punch marks. The south edge of the stone and the western edge of the pivot hole are somewhat damaged.

NEF2 (910mm × 930mm (mm) × 100mm to ground level) Most of the top bed is hidden beneath

Fig 243 Milecastle 10: milecastle and excavation trenches of 2000 against modern mapping.

Fig 244 Milecastle 10: north gate of Mc10 as originally illustrated by Bruce (1867).
the pier stone NE1/1, but something could be seen of the back and south sides. The back tapers away from a point beneath the pier stone; no tool marks could be seen. Presumably the stone as quarried was not quite big enough to make the required size. On the east side, the top has been cut away at the front, in the line of the east side of NE1/1, to a depth of 25–30mm; this sinking dies way after about 150mm as the top of the pier falls away naturally to the back. Some unquantifiable punch marks were visible. The north face, which stands 10mm above ground level, is worked with a punch in heavy furrows, range up to 10mm. The joint to the east is worked with a punch, range up to 10mm, and is approximately square to the north face. The stone was of fair Roman military engineering standard. NE1/2 (710mm x 630mm (at base)/530mm (at top). The bed height could be measured only on the east side. The face was very difficult to see, but it was clear that the left-hand side—some of the surface had been very carefully worked with a punch in fine pecks and short furrows, range 3mm occasionally 5mm. So far as could be judged the finish was remarkably neat and carefully worked. The lower part of the right-hand side was less good, and is 4.5mm lower than the remainder. It was most probably worked, with a range which appeared to be nearer to 10mm but this is nothing of an estimate as the surface could not be clearly seen. The lower 60mm on the left-hand side projects by 2–3mm under-square to the top bed. It was not possible to see whether the face has chiselled margins, or whether it is a neat joint, against the pier stone NE1/1, because much of the south face has been moved, if indeed it originated in its present location (see 155). The upper arms is approximately square to the upper margin on the north face. The right-hand joint is worked heavily with a punch ranging up to 20mm in places, in a manner appropriate to a joint against squared rubble (Fig 248). For the first 200mm it is approximately square to the top of the stone, but then falls away by 15–20mm, and is 4–5mm lower than the remainder. The appearance might originally have been better but it is now heavily weathered. The top bed, now much weathered, is straight to 2–3mm round, with traces of pecks range up to 5mm. It is not a neatly worked face by any standard. The lower part of the face is worked with a punch in furrows, ranging 2–3mm round, caused by an area in the centre

...
correct, this would mean that only the south portal of the east gate was completed as such. As these square sinkings are not a normal feature of gate pivots, it may be that both Chesters fort and Mc10 were built by the same legion. The base of the north-west pivot seems to be un worn, in distinction to the east pivot. This suggests that only the eastern leaf of the gate was opened on a regular basis.

The single remaining pier stone, NE1/2, is interesting. The joints are in no way remarkable, but the face is finished to a higher degree than at any other extant milecastle or fort gate. It is not a first class piece of work as the right-hand half of the face appears, so far as could be seen, to be rather unevenly worked, but the stone still stands out as having received an unusual degree of skill and care.

It is unfortunate the stone NE1/1 is missing.

It is important to note that Bruce’s illustration does not accord with the present state of the gate.

The single stone remaining of the north-east pier is shown in this drawing in approximately its present position and in such detail as to record the loss on the south-east corner of the stone.

The sill is depicted with the correct number and general form of the stones, even the slightly higher and narrower stone no. 4 of the sill is clearly identifiable. For the north-west pier, however, which now consists of two stones similar in size to that of the north-east, only a single stone is shown, and that at only half the bed height of that on the north east pier. Whether this is artistic licence or whether tumbled stones were later put in the place of this single stone is not known.

The accuracy of the drawing in other respects does suggest that these stones are not in their original position. Since the drawing was made, two stones appear to have come from the curtain wall have been placed on the sill, one at each end, and close against the return faces of the piers, which shows that a certain amount of rearrangement has carried out. Relevant to this point is stone NW1/2, which is something of an enigma in that while the face is averages poor work the back has every appearance of a re-used stone. The care taken in working the back is one indication of this, and the slot at the base is another. While it must be acknowledged that tumbled stones were later put in the place of this single stone it might reflect the abrupt change in quality reflecting interruptions in work at Mc37 (Hill 1989), and at the forts of Birdoswald (Hill 1992, Hill and Wilmott 1997), and Housesteads (Hill 1995).

The evaluation

The evaluation methodology proposed in the Project Design (Austen and Wilmott 1999) was to excavate two trenches, one 4m × 0.2m in size to transect the south wall towards the south-west corner of the milecastle and the second 2m × 0.7m, crossing the east wall and the eastern side of the interior. The first trench had been cut according to the OS location of the milecastle on the 1:2500 map. It was soon realised that the milecastle had been strongly located on the map, and the trenches were amended. Trench 1 measured 2m × 8m and lay across the western side of the milecastle while Trench 2 at 2m × 4m targeted the eastern edge in order to demonstrate the true position and dimensions of the structure (Figs 243, 246). In both trenches the ploughsoils were stripped by hand and the underlying archaeology recorded in plan. Cut features were sampled in order to characterise them and to recover dating evidence.

Trench 1 (Fig 247)

Within Trench 1 a north-south linear feature (410, fill 411) proved to comprise a robber trench 2.8m wide for the external western wall of the milecastle (Fig 248). On the eastern side of the trench the bottom course of facing stones for the interior face of the wall were found as situ, while on the western side similar stones, albeit disturbed, might have comprised the remains of core work. The trench did not extend far enough to reveal the facing stones of the outer face. The construction trends for the wall...
Fig 248
Milecastle 10: photo of Trench 1 showing section through fourth trench and surviving wall face.

Fig 249
Milecastle 10: plan of Trench 2.

demonstrating that continuing agriculture has caused the attrition of the monument, probably in relatively recent times. Broadly 'modern' artefacts have been found throughout the plough soils. The upper (active) plough soil (401), throughout which ploughed-back straw was found, was 30mm in depth. The lower plough soil (402), however, contained no straw and appears to represent a 'buffer zone' 50mm deep between active cultivation and the upper surface of surviving archaeology.

Trench 2 (Fig 249)
Trench 2 contained a complex sub-circular feature 2m in diameter (415). This was apparently constructed of stone and clay, and was very burnt. It would appear to have functioned as a hearth or oven. To the south-east of this feature a group of flat sandstone flagstones measuring 490mm square (419) might have been either an element of disturbed flagging or a post pad. This rested on a small layer of clay. All of these features were sealed by a deposit of stony clay-silt (416). A small sondage at the eastern end of Trench 2 cut through to reveal the undisturbed natural subsoil (418), which was cut by a north–south linear feature (420). Although only the western side of this feature was revealed, it contained a large facing stone (422), which is interpreted as part of the eastern wall of the milecastle. The plough soils followed the same pattern as Trench 1, and the archaeological surfaces are similarly scored with plough marks.

Finds
by P Austen, N Hembrey and J Weinstock

Mc10 yielded miscellaneous modern material including structural ironwork and four nails, which might be Roman or later. There was a small assemblage of tile and fired clay, and two pieces of oyster shell. Two undiagnostic flints (SF 9970 461) might be Roman or later. There was a small group of BB2 cooking pot rim fragments. The hearth (415) yielded eleven body sherds, mostly BB2, including fragment of the base of a bowl or dish (719), most of it randomly distributed. Constructed of stone and clay, and was very burnt. It was noted by both MacLauchlan (1885, 16) and Collingwood Bruce (1886, 129). The only archaeological intervention before the present evaluation was by C E Stevens, who trench ed the site in 1946 as part of an exercise to see whether Mc14, 36 and 41, and T36a, 40a and 40b conformed to the typology that had been established by Simpson (1931) and Bailey. The only published reference to the work (J Roman Stud 1947, 148) is a terse comment to the effect that the milecastle was 18.3m wide internally, had 'broad' side walls which were sealed by the undisturbed natural subsoil above, and was "presumably of short span". The field in which it is situated is under regular cultivation. Masonry and burnt levels have occasionally been observed after ploughing, as have pottery and other artefacts.

The evaluation
by Miles Moore

Two trenches were excavated (Fig 252). Trench 1 (8m x 2m) was dug to determine whether the southern wall of the milecastle survived, and to sample the interior archaeology to assess survival and condition. Trench 2 (30m x 2m) transected the western wall of the milecastle and continued eastwards into the interior.

Interpretation

The basic dimensions of Mc10 have been broadly confirmed by this work. The measured dimensions are, however, slightly different from the round figures (in feet) recorded by Spain. The width east–west of the milecastle is not 14.42m but 14.70m, and the exterior walls are not 3.05m thick. These are very minor corrections, however, and lie within any margin of Roman setting out or modern measurement error, or any combination of both factors. The north–south length of the milecastle, however, appears to have been accurately calculated by Spain at 17.68m. The work on the north gate has been extremely useful in demonstrating the differing standards of workmanship represented in the gate, and the possibility, however tenuous, that there was a hiatus in the building of the milecastle following a resumption of work to a different standard. The burnt feature in Trench 2 seems to be a Roman oven, which was constructed in the south-west corner of the fort.

Milecastle 14 (March Burn): 2000

The site
The site of Mc14 (NZ 1068 6768) (Fig 251–2) stands in a slight kink in the course of the Wall, as it rises westwards from the valley of the March Burn. The platform that marks the milecastle site is currently some 40mm high, and has clearly been spread by continuous and continuing ploughing. It was noted by both MacLauchlan (1885, 16) and Collingwood Bruce (1886, 129). The only archaeological intervention before the present evaluation was by C E Stevens, who trench ed the site in 1946 as part of an exercise to see whether Mc14, 36 and 41, and T36a, 40a and 40b conformed to the typology that had been established by Simpson (1931) and Bailey. The only published reference to the work (J Roman Stud 1947, 148) is a terse comment to the effect that the milecastle was 18.3m wide internally, had 'broad' side walls which were sealed by the undisturbed natural subsoil above, and was "presumably of short span". The field in which it is situated is under regular cultivation. Masonry and burnt levels have occasionally been observed after ploughing, as have pottery and other artefacts.

The evaluation
by Miles Moore

Two trenches were excavated (Fig 252). Trench 1 (8m x 1m), the archetypal observable part of the site, was noted by both MacLauchlan (1885, 16) and Collingwood Bruce (1886, 129). The only archaeological intervention before the present evaluation was by C E Stevens, who trench ed the site in 1946 as part of an exercise to see whether Mc14, 36 and 41, and T36a, 40a and 40b conformed to the typology that had been established by Simpson (1931) and Bailey. The only published reference to the work (J Roman Stud 1947, 148) is a terse comment to the effect that the milecastle was 18.3m wide internally, had 'broad' side walls which were sealed by the undisturbed natural subsoil above, and was "presumably of short span". The field in which it is situated is under regular cultivation. Masonry and burnt levels have occasionally been observed after ploughing, as have pottery and other artefacts.

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Fig 251
Milecastle 14: location of Mcs 14, 17 and 19 on Hadrian’s Wall, and of Figs 252, 257 and 263.

The southern wall of the milecastle was not visible at this level, so a decision was made to cut a small slot along the eastern side of the trench 0.50m wide and 5m long to ascertain if it still survived below the lower rubble and soil (709). The remnants of the south wall were discovered about 0.55m below the topsoil. Only the rubble core of the wall survived, the facing stones having been robbed away completely. What was left of the wall was composed of irregular pieces of sandstone bonded together with a yellow sandy mortar. This was very similar to the natural subsoil, except that it was darker in colour and contained frequent white patches and flecks of lime. The rubble was very loose and had probably been disturbed by stone robbing rather than ploughing. The mortar and rubble were 2-40m wide, while the robber trench, which probably retains the footing width, was 3.52m wide.

The natural subsoil (710) was visible below a large depth of the lower plough soil (709) at the southern end of the trench, approximately 0.70m from the top of the topsoil. The northern end of the trench was not excavated down to natural.

Trench 2 (Fig 255)
The topsoil (700) covering Trench 2 varied in thickness between 0.28m and 0.32m, owing to the gradient of the hill, which sloped downwards to the west. Directly below the topsoil on the western side of the trench lay a similar deposit to lower plough soil and rubble (709) noted in Trench 1 (701). This was cut by a north-south aligned robber trench (706) filled with a deposit of loose mid-greyish-brown sandy silt with yellow mortar flecks containing large quantities of rounded and angular stones (707). The robber trench had a good eastern edge against a surface of crushed sandstone rubble in a sandy matrix (705). A deeper slot 0.50m wide and 6m long was excavated through the fill (707) of the large robber trench in order to confirm the identification, and to see if any walls survived in situ below its fill. At the western side of the trench below the robber trench fill, the western wall of the milecastle (716) was identified. All of the facing stones had been removed, but the wall core survived in the form of sandstone pieces bonded roughly together with pale yellow sandy mortar. This wall footing ran westwards beneath the supposed rubble and plough soil (703), and it became clear that this was the fill of an earlier robber cut, whose east edge had been removed by the excavation of the second robber trench (706), and whose west edge lay beyond the limit of excavation (Fig 256C-D). The excavated wall footing revealed beneath the fills of these robber trenches was 3.53m wide and 0.70m below the topsoil.

At the eastern end of robber trench (706), the fragmentary remains of another wall were noted (718), c.1.20m to the east of the western wall of the milecastle (Fig 256). All of the facing stones of this wall had also been robbed, and only the loose rubble and yellow mortar core survived. It was up to 760mm wide, and was 0.70m below the top of the topsoil. This fragment would appear to be the remnant of the western wall of an internal building within the milecastle, robbed simultaneously with the western outer wall.

At the east edge of the trench lay a second robber trench (703). This was not seen completely in plan, as it extended to the east beyond the trench edge. It had vertical sides and was filled with a dark grey-brown clary grey silty sand (704), which contained large amounts of stone rubble, probably discarded from the robbing of the wall. In the small slot that was excavated, it was evident that any wall had been completely robbed down to the bottom of its foundations as none of it survived in situ.
It seems possible that this trench robbed the eastern wall of the internal building (Fig 256E–F).

Both robber trenches (706) and (703) truncated a sand and rubble surface (705), which is likely to be the floor surface associated with the internal building mentioned above. This surface was composed of a mid-orange grey-brown silty sand with frequent angular sandstone fragments rammed tightly together.

Observed in the base of robber trench (703) was a circular feature (713), which was 90mm deep with concave gradually sloping sides and a rounded base. No finds were recovered from the fill (714), a homogeneous red-brown silty clay. It was not completely seen in plan as it was excavated at the base of a small slot through the robber trench, so it is difficult to determine what its form or function was.

The natural subsoil (702) was only observed at the base of the two robber trenches (706) and (703), and was approximately 0.75m from the top of the topsoil.

Finds
by P Austen, N Hembrey and J Weinstock
Mc14 yielded few finds (Hembrey 2003): a number of nails of uncertain date, one fragment of animal bone (Weinstock 2001), three pieces of tile and an undiagnostic, but worked, flint flake. The latter is of note, as flint is not naturally occurring in this area.

Three sherds of Roman pottery from the plough soil (701, 708) included two undiagnostic body sherds and a rim fragment of a flanged mortarium in oxidised fabric (Austen 2006).

Interpretation
The position of the south wall of the milecastle confirms Stevens’ observation that the milecastle was of short-axis type. Unfortunately, extensive robbing makes judgements as to original wall widths difficult, as the robbing was not done in a tidy fashion and the widths of the robber trenches do not exactly preserve the widths of the walls. However, the fact that the robber trenches for the south and west walls were 3.52m broad confirms Stevens’ observation that the walls were broad, probably as broad as the broad curtain wall as is the case at Mc9 and Mc10. This is an important observation in the context of recent work by Symonds (2005), as Mc14 joins the small group of milecastles built to Broad Wall standard throughout. Like Symonds’ groups of such milecastles (p 139), Mc14 stands alone in this respect. The closest milecastles on either side where wall widths are known are Mc13 (Ruchester Buren), where the east and west walls are 2.33m wide, and...
Mc17 (Welton), where south, east and west walls measure 2.41m wide. Both are Narrow Gauge milecastles with a broad north wall. This can now be readily explained in terms of Symonds’ idea that milecastles were completed to Broad Wall gauge early in the construction process in order to provide garrisons at points of topographic weakness on the line of the Wall, particularly valley crossings. The March Burn, which lies below the site of Mc14 to the immediate west, is set in quite a deep valley, and could afford cover to penetration form the north.

Internally there was at least one building, which lay on the west side of the milecastle. This was up to 4.4m wide (external measurements) with walls up to 1.2m thick. The building lay approximately 1.2m east of the western wall of the milecastle, and its internal surface seems to have comprised crushed rubble and sand. The milecastle has been completely robbed, with all facing stones of the outer walls and internal buildings removed, probably to build the group of buildings to the west around the former ‘Iron Sign’ public house. The visible platform of the milecastle would doubtless have been a lure to stone-robbers.

The fragment of wall constructed above the robber trench fills demonstrates that the robbing pre-dated the re-use of the milecastle platform for a later building, possibly a post-medieval field barn. This building had probably disappeared by the 19th century, as otherwise one might expect MacLauchlan or Bruce to have mentioned it.

**Milecastle 17 (Welton): 1999**

**The site**

The site of the milecastle (NZ 0630 6823) appears as a very clear and distinct terrace platform on the sloping ground 200m west of the crossroads adjacent to Whitledean reservoirs (Fig 257). It was identified on the ground by Horsley (1732, 114) and also by Bruce (1867, 131) and MacLauchlan (1858, 19). The only previous work on the site was supervised by Hepple and reported by Birley et al (1932, 256–8). Hepple’s work was restricted to the northern part of Mc17, which lies beneath the B6318 Military Road. Up to three courses of the north wall and north gate survived up to 800mm high. The gate was of Type I (Fig 250), having two pairs of gate responds: “The west half of the gateway was comparatively well preserved; the pivot hole on this side still retained its metal lining, which has been removed, and is now deposited in the Black Gate Museum” (Ibid, 26).

Published photographs (Fig 259) show a single course of the gate piers and responds, constructed in large masonry with diagonal broaching on the faces of the stones, which had very well marked setting-out lines on their upper surfaces.

It was established that this was a short-axis milecastle, measuring 17.68m east–west by 14.9m north–south internally. The north wall of the milecastle was 3.30m wide, and the side walls 2.41m thick.

**The evaluation**

Two trenches were excavated. Trench 1 (6m ? 2m) was intended to transect the south wall towards the south-west corner of the milecastle. Trench 2 (8m ? 2m) was to sample the west wall and the western side of the interior. The trenches were excavated to the top of surviving stratigraphy, which was cleaned and recorded. Discrete cut features were sampled by half-sectioning, and two small sondages were excavated within Trench 2 in order to solve a specific stratigraphic question.

**Trench 1** (Fig 260)

The earliest feature in Trench 1 was a linear gully (109; fill 110), U-shaped in section 410mm wide and 520mm deep, running NE-SW. The fill of the gully was cut by a pit (111; fill 112) the full dimensions of which were not defined, but which was 590mm deep. The pit contained a single body sherd of BB1, and was therefore probably Roman in date. Both features were cut into the natural clay. Above them lay a spread of stone (108) comprising 75% glacial dolerite boulders and 25% limestone slabs (113). The limestone slabs may have been worked, but there were no clear traces of this, and it is perhaps more likely that they were split from thinly bedded natural outcrops, though whether by human or natural agency was not apparent. The stones were sealed by a 290mm thick deposit of subsoil (103), and 260mm of plough soil (101), giving a total depth of overburden of 0.55m.

**Trench 2** (Fig 261)

In Trench 2 the plough soil (102) was 160mm in depth. This overlay a spread of angular sandstone rubble (104) which contained Roman pottery, and a damaged jet finger ring. The principal concentration of this material was towards the eastern end of the trench. The rubble spread either incorporated or was overlain by a very fragmentary, unbonded wall 1600mm in width constructed of coursed squared rubble (107). To the west of the trench a small patch of compacted charcoal flecked clay silt (106), 50mm deep overlaid a widespread deposit of very dark grey-brown clay silt containing charcoal flecks and stone fragments (105). A sondage across the junction of...
Finds

by P. Austen, N Hembrey and J Winnick

This site yielded a comparatively large assemblage of finds (Hembrey 2003), including pot sherd, tile fragments, and fired clay. There was a small quantity of modern material, principally unidentifiable nails and iron objects, including a horseshoe fragment, clay pipe and glass. Roman small finds were:

1. 99/0152, context 102, plough soil (Fig 262)
   - Large, thick, plain jet finger ring, incomplete. Flat on both sides and square in section; the ring has an integral, rectangular, central bezel. Situated on all surfaces, rather than a highly polished finish, indicate it to be unfinished. External diam c. 30mm, internal diam c. 25mm

The ring (cf Allason-Jones 1996, 57, no. 146) is probably from Whitby jet. It is notable also for being unfinished (Lindsay Allason-Jones, pers comm); most finger rings left their source nearly perfectly finished – highly polished with oil mixed with jet dust – at the point of sale. Objects in such condition have been found at York, and at South Shields. As it is very unlikely that Mc17 was part of this industry, the most probable explanation is that this was a reject picked up elsewhere. It is a fairly common type, dated broadly to the 3rd century, and worn by both men and women.

2. 99/0151, context 101, plough soil
   - Ceramic spindlewhorl, fabricated from a samian vessel, although no glaze survives, circular, and with a central perforation. Complete and fairly regularly in shape; both edges and faces are fairly abraded. Max diam 29mm, thickness 6mm.

Most of the pottery (Austen 2006) was from plough soil (101, 102). Roman pottery comprised 34 sherds of amphora including a rim fragment, two sherds of mortarium in hard white fabric, probably early Crambeck (late 3rd-4th century AD), a body sherd of Manxrite-Hartshill mortarium, 98 sherds of Roman greyware including copy of BB1 flat-rim bowl with burnished lattice decoration (2nd century), a flanged dish or bowl (late 3rd to 4th century), 25 sherds of BB1 including an early 3rd century pot rim fragment with a fairly everted rim, and five very abraded sherds of plain Central Gaulish samian. A single BB1 body sherd came from the early pit in Trench 1 (112), and the rubble spread and underlying soil in Trench 2 (104, 105) produced an amphora body sherd, single rim sherds of BB1 and BB2, two greyware rim sherds and a burnt rim of a Central Gaulish samian bowl.

Eighteen fragments of animal bone were collected. All were cattle bones, although which if any was of Roman date cannot be determined.

Interpretation

It seems clear that Trench 1 lay outside the walls of the milecastle. The presence of a single Roman sherd in one of the cut features suggests that there was some form of contemporaneous extramural activity. The rubble spread, and were then found, to the south-west corner of the trench demonstrated that there was a substantial depth of stratigraphy that may have been collapsed debris from the milecastle walls.

In Trench 2, the archaeological deposits encountered appeared to be predominantly post-Roman. This was confirmed by the wall footing (107) found overlying the rubble spread, which lay directly beneath the plough soil. The wall was orientated diagonally to the layout of the milecastle and could not, therefore, have been part of a Roman internal building. It is interpreted as a medieval or post-medieval structure built either within or over the top of the milecastle. This building had certainly been constructed by the mid-14th century, or it would have been noted by MacLauchlan or Bruce.

The deposits associated with the line building overlying at least 450mm of stratigraphy. This was clearly deposited from west to east, or downhill, and it is probable that much of it comprises colluviation or alluvium from up-slope to the west. The platform interpreted as the site of the milecastle is considerably larger than the attested size of the short-axis milecastle itself, and it is possible that this natural deposition of material over the top and sides of the platform has served to enlarge it over time, at the same time burying the remains of the milecastle more deeply prior to the construction of the later building. The concentration of Roman material within the plough soil on the eastern lip of the platform might indicate that some internal deposits of the milecastle have been disturbed by ploughing at this point in the past.

Milecastle 19 (Matfen Piers): 1999

The site

The low platform that marks the site of Mc19 (NZ 0335 6854), 150m east of Matfen Piers (Figs 251, 263) was noted by Bruce (1867, 131) and MacLauchlan (1858, 19). The site lies partly under the hedge bank on the south side of the B6318 Military Road where it is indicated by a substantial rise in the hedge, but most of the milecastle lies in the field to the south, which is regularly cultivated for cereal crops. The rise in the hedge bank indicates precisely the position of the milecastle and surviving remains are likely to be well preserved within this narrow strip. Masonry projects from the south side of the hedge bank was cleaned as part of the present evaluation, and seems to consist of general rubble making up the road. Wall faces are not readily discernible, but may be masked by turf.

Trenching took place here in 1931 (Birley et al 1932), 1932 (Birley et al 1933), and 1935 (Simpson et al 1936b). The excavations showed that this was a long-axis milecastle measuring 16.25m east-west by 17.2m north-south internally. The north wall of the milecastle had been removed in its entirety before 1932, though a small fragment of footing on either side of the gate passage was found. A small hearth was close to the south end of the west side of the passage implied to the excavators that the gate had been partially blocked in the Roman period. The excavators recorded that virtually nothing was left of the side walls or the south gate, though it is clear from a photograph (Simpson et al 1936b, fig 1, Fig 264) that the footings and part of the passage wall survived on the southern edge of the platform upon which the milecastle stood. The pattern of footings suggested that this milecastle had Type III gates (Birley 1961, 99), with an elongated passage and two sets of responds. The south wall measured 2.38m in width, suggesting that this was a Narrow Wall milecastle.

The excavation trenches shown against modern mapping.
In 1931 an altar (RIB 1421) was found to the south of the milecastle in the environs of the south gate. The inscription on this altar read:

Matrib(us) templ(um) cum ara vex(illatio) coh(ortis) I Vard(ullorum) instante P(ublio) Dom(itio) V(...) V(otum) s(oluit) l(ibens) m(erito)

To the mothers, a vexillation of the first cohort of Vardullians under Publius Domitius V(...)?ctor has erected a temple with an altar in willing payment of a vow.

Birley (1932) pointed out that this might mean either that a shrine to the Matres had been constructed outside the milecastle, or that the milecastle had been converted to this use, in the same way that Wachturm 37B on the Odenwald Limes was turned over to religious use. Breeze (2002; 2003) has since shown that the presence of altars, and even tombstones, in the vicinity of milecastles is not uncommon, occurring on at least 13 sites, and suggests that such altars could have been erected by the occupants of milecastles that might, at different times, have included legionaries or auxiliaries. This informs the question of the way in which milecastles were garrisoned. Birley argued that a separate force to the units based in the forts of the Wall provided the garrisons for the interval structures. This argument was based upon the discovery of the altar at Mc19, and has been accepted by some scholars (Daniels 1978, 26), though whether the troops so deployed were auxiliaries or numeri (Birley 1961, 270–1) remains uncertain. This issue has recently been revisited by Breeze (2002) in his reconsideration of the tombstone of the Pannonian Dagvala from Mc42 (Cawfields) and more generally (Breeze 2003a).

Nothing has hitherto been recorded of the internal arrangements of the milecastle although records exist to the effect that a wall of an internal building was being revealed by ploughing in the 1980s.

The evaluation

Two trenches were excavated. Trench 1 (8m x 2m) crossed the east wall and the eastern side of the interior. Trench 2 (also 8m x 2m) was designed to transect the south wall of the milecastle west of the centre.

Trench 1 (Fig 265)

The substratum on which the milecastle was constructed comprised material that appeared to be an outcrop of degraded sandstone (206; 214). Whether this was a natural deposit or a built platform was not established. The highly truncated remains of the milecastle lay immediately beneath the plough soil. The most substantial part of this was a fragmentary north–south stone wall (207), 560mm in width, built of sandstone coursed rubble within a construction cut of a similar width to the wall itself (208). The wall had two faces, and was packed with rubble. The vestiges of clay bonding survived, most visibly in an orange sandy clay layer (205) that lay to the immediate west of the wall, and that appeared to comprise a spread of bonding material resulting either from trampling during robbing or from ploughing. On the western side of the wall lay a sandy clay deposit (209) that appeared to be either an early floor or a levelling deposit for a level, compact, purple-grey sandy clay layer (203), which was certainly an interior earthen floor that respected the wall (Fig 266). 1.68m to the east of the wall was the very last vestige of the eastern wall, which was 2.4m wide. All that survived was the base of a foundation trench cut into the underlying sandstone. At the eastern and western sides the trench was deeper (216; 217), although it was only 180mm at the deepest point. These deeper strips represented the original lines of the facing stones of the exterior wall. No facing stones survived, indicating that the wall had been totally robbed. The fill (213) of this feature must therefore represent the ploughed out, vestigial fill of a robber trench.

The ploughsoil (201) was 250mm deep, and contained 20% medium-to-large and 10% small angular sandstone pieces derived from the buried milecastle.

Trench 2 (Fig 267)

The plough soil in Trench 2 was 200mm deep, and directly overlay a deposit of small, undressed, sandstone fragments, which was surfaced with smaller material to the south side of the trench (212) (Fig 268). This surface merged into larger stones at the north end of the trench. At the north edge a shallow cut was noted (248), filled with material (219) similar to the topsoil.
Milecastle 19 yielded a small assemblage of ironwork, mostly from the plough soil, and of uncertain date. All glass was modern and there was a single fragment of animal bone (Hembrey 2003). The only noteworthy Roman find was a single coin.

1. SF 9970 260, context 212
Coin: AE Sestertius, Hadrian, AD 125–38; diam 26mm, thickness 4mm (RIC 970)

All of the pottery (Austen 2006) was from the plough soil. Although there was some post-Roman material, most of the pottery was Roman material deriving from the ploughed deposits of the milecastle. The pottery was basically 2nd–3rd century in date, and it is possible that this is because later material has already been ploughed out and lost. Roman pottery comprised eight abraded sherds of Central Gaulish samian, 14 sherds of BB2 including rims of a rounded rim bowl or dish (late 2nd–early 3rd century), and abraded mortarium flange fragment and a single fragment of BB1, eight amphora sherds, 46 of undiagnostic greyware and 16 of undiagnostic oxidized wares.

Interpretation
The eastern wall of the milecastle conformed very closely to the previously measured width of the south wall, and confirms the identification of Mc19 as a Narrow Wall milecastle (Symonds 2005). The smaller, internal wall (207) was clearly the eastern wall of a building in the eastern half of the milecastle with internal floor surfacing on its western side. The surfaces in Trench 2 are less readily interpreted, but are possibly best regarded as comprising hard surfacing in a western half of the milecastle, which was devoid of structures. During the excavation it was thought to be the central road of the milecastle, but this cannot be the case if the 1930s record of the dimensions and orientation of the milecastle are correct.

Milecastle 62 (Walby East): 1999

The site
The area between Walby and Brunstock Park, broadly conforming to Wall Miles 62 and 63 (Figs 269–70, 274) have been the subject of a small number of archaeological interventions over the last 100 years. Antiquarian reference to this somewhat featureless part of the line (which even the enthusiastic James Coates did not illustrate) is limited to the survey by MacLauchlan (1858, 72). It was MacLauchlan who first suggested the location of Mc62 at the point where the east-west road known as Birky Lane describes a dog-leg, bending sharply northwards, and almost immediately westwards again (NY 4429 6051) around a field 300m east of Walby Grange. He argued this as follows: “almost 600 yds before we reach Walby there are very faint traces of a Mile Castle, being 7 furrows from the last; they are where the road turns sharply to the north. Mr Bell concurs, but the traces are by no means conclusive”.

So inconclusive were they that MacLauchlan did not mark the position of the postulated milecastle on his survey plan. In 1899 the bend in Birky Lane at MacLauchlan’s projected milecastle site caused speculation as to whether the line of the road skirted the north-east angle of a projecting fort here. This was tested by Haverfield (1900, 97), who trenched the field to the south of the lane, found the Wall and ditch running straight across it, but encountered no sign of a fort or of the milecastle.

The site is currently under pasture but is ploughed in rotation for pasture renewal at regular intervals, and this ploughing was the reason for the inclusion of the site in the Milecastles Project. In 1981 geophysical survey was carried out by John Gaster (1981). Ten traverses confirmed the line of the Wall and ditch, although the weakness of the response suggested that the Wall had been badly robbed towards the west side of the field. It was concluded that a strong linear anomaly parallel to and behind the Wall at the expected position for the milecastle might represent its south wall. The line of the Wall ditch survives as a clearly visible, and very wet, indentation in the north-east corner of the field.

The evaluation
The location of the excavation trenches was guided by the geophysical survey. In the absence of clear targets to explore, initially a pattern of four 1m square test pits were excavated in an attempt to locate the milecastle. These demonstrated that there were surviving structural features, and a further six test pits were dug to confirm aspects of plan and...
layout (Fig 271). In all test pits the plough soil (001) varied in depth from 250mm to 350mm.

Test pits 1, 2, and 5 (Fig 272) lay in a north–south line along a line that appeared as a rather insubstantial anomaly in the geophysics. All three pits produced similar stratigraphy. Test Pit 1 showed the western edge of a feature (002) comprising sub-angular broken sandstone fragments and rounded pebbles. This overlay a deposit of mottled mid brown-black sandy silt (003). In Test Pit 2 a similar deposit of stone (007) lay over a deposit of orange-grey mottled sandy silt (008), and in Test Pit 5 again a stone layer (009) lay over a deposit of light grey-brown sandy silt (021).

Test Pits 9 and 7 (Fig 272) were positioned on the presumed line of the Wall, located with reference to the site of the Wall ditch. Beneath the plough soil in Test Pit 9 was a deposit 50mm deep of grey-black humic clay-silt (017), which overlay a yellow-white silty sand (018) 150mm deep. This lay directly on the solid, natural yellow-orange silty clay substrate (020). In Test Pit 7 the natural clay (020) was overlain by a hard, compacted surface of small stone and pebbles 120mm deep (012), which was cut by a post-medieval field drain (013).

In Test Pit 6, a narrow wall foundation (010) running north–south was identified (Fig 273). This survived to a depth of 124mm and was 420mm wide, constructed with cobbles and some angular stones. The foundation was cut into a deposit of grey-brown silty clay with charcoal flecks (011).
The foundation was parallel in alignment with the edge of the stone spread noted in Test Pit 1. To the south of Test Pit 6, Test Pit 8 showed a diffuse cobble spread, interrupted by plough marks (016) over a deposit very similar to 011 (017). Test Pit 4 was unproductive, showing a deposit of mid-brown sandy clay (006) 280mm overlying natural clay (014). This was cut by a post-medieval field drain (013). Test Pit 3 revealed a dark-grey-brown sandy silt 180mm deep (004) over the natural clay (005).

**Finds**

by P. Austen and N. Hembrey

All non-pottery finds were modern in date (Hembrey 2003), and only three undiagnostic Roman sherds were recovered (Austen 2006).

**Interpretation**

These nine test pits are the only interventions ever to have been undertaken on Mc62. The results may cautiously and tentatively be interpreted in terms of other Turf Wall milecastle plans and structural methods. Test Pit 9 was cut in order to explore the location of Hadrian’s Wall. It is possible that the deposits above the natural subsoil represent the laid turf of the Turf Wall. If so, it is clear that the Wall in this area does not have the kind of cobble foundations excavated at Brough-by-Sands and at Mc72 (Faird Farm) (Austen 1994), but more importantly, it would suggest that the Turf Wall was built on a cleared ground surface, when the normal pattern would be the layering of turf on top of growing vegetation. This has been found to be the case wherever the Turf Wall has been sectioned, including the excavation at Crosby on Eden, only 250m to the east of the milecastle site (p. 124) and at Appletree (p. 110). It is perhaps more likely that the material above the natural clay comprises an in situ ancient subsoil, and that the turf line above it is the natural pre-Turf Wall turf line, possibly combined with an element of the bottom inverted turf of the structure. The pebble surface in Test Pit 7 lay directly over the natural clay, implying that the original ground surface and turf had been cleared at this point. As this trench is on the line of the Wall, this may represent a break in the Wall which could then only be the north gate of the milecastle. It seems likely that this material represents surfacing within the gate, possibly relating to the Turf Wall itself.

The cobble and stone spreads in Test Pits 1, 2 and 5 may be interpreted as the foundations of the east wall of the stone phase of the milecastle. If so, they are not primary, as there are substantial deposits of sandy silt beneath them. These deposits were of a variety of colours, motiled and somewhat disturbed. It seems reasonable tentatively to conclude that these sandy silt deposits might represent the disturbed remnants of the walls of the primary turf and timber milecastle. The interpretation of the stone spreads in Test Pits 1, 2 and 5 as footings for the exterior walls of the stone phase milecastle is strengthened by the fact that the only definite stone foundation to be found during the evaluation lay parallel to the edge of these spreads as defined in Test Pit 1. This was the foundation in Test Pit 6. The foundation lay 5.25m to the west of the supposed inner edge of the wall of the stone phase milecastle, and this may suggest that this was the western wall of a building that occupied the east side of the milecastle. Test Pits 3 and 4 were inside the milecastle, contained surfaces, but were otherwise undiagnostic. It is at least possible that the cobble spread in Test Pit 8, which resembled those in Pits 1, 2 and 5, might have been the foundation of the south wall, and the soil deposits recorded beneath structures in both Pits 6 and 8 may represent the demolition of the Turf Wall milecastle.

The evaluative nature of the excavation makes it impossible to extrapolate the plan and dimensions of the milecastle from the evidence recovered with any level of certainty. The only available evidence is the apparent position of the north gate, east stone wall, and internal building wall. It is possible to reach some estimate of the internal width of the structure, however. In order to do this it is necessary to assume that the inner edge of the eastern exterior wall foundation coincided with the inner edge of the wall itself, and that the internal building wall represents the western wall of a structure. This gives a breadth from the interior wall face to the west frontage of the building of 5.6m. In most milecastles where buildings have been excavated, these buildings are not aligned on the gate portals, but set back somewhat to the line of the rear of the imposts. The overall width of a typical milecastle gate over the imposts is 5.26m. Assuming symmetry of layout, the internal width east-west of the milecastle would be in the region of 16.55m, and given walls of around 2.42m in width, the external width would be 21.90m. It is not possible to calculate the length north-south, although it is probably in the region of 23-26m, and the milecastle would thus be of long-aisle type. This is comparable with other milecastles in the Turf Wall sector; the external measurement for Mc46 was 17.94m north-south and 21.42m east-west for a short aisle milecastle. Mc72 in its stone phase was 24.14m east-west and 24.4m north-south.

**Milecastle 63 (Walby West): 2000**

The site

After describing the bend in the Wall as it passes through Walby at his projected location for Mc62, MacLaughlin (1958, 72) is silent on the possible location of Mc63 until the next major bend is reached slightly west of Wallfoot. He suggested a milecastle here on the grounds of the existence of the bend alone: “Immediately on the north of the farm called Wall Foot another bend takes place, and at this bend we fancy traces may be discovered of a milecastle bearing north-west by west from the farmhouse.”

Haverfield (1895, 477) also examined the Wall and Vallum in Brunstock Park, between Mc63 and Mc64, and Mc64 (Drumsholze) itself was identified and excavated in 1962 (Caruana and Paine Gladwyn 1980). 1990 saw the examination of the area to the east of Brunstock Park by geophysical survey and small scale excavation as part of an evaluation to find the least archaeologically destructive route across the Roman frontier works for the line of the North-West/East Bridge Pipeline. This was followed by an excavation on the route of the pipeline itself in 1991 (Lambert 1996, 79-86). Geophysical survey successfully located the Wall and Vallum ditches (Fig 274). The pipeline passed through part of the line where the Wall had been eradicated by quarrying on either side of a hollow way which runs to the south of the Wall. The Vallum ditch survived to a depth of some 2.3m.

The measured site of Mc63 lies at or near NY 431 5974 (Fig 274). The field boundary shown on OS mapping has altered in recent years. The milecastle was thought to be bisected by a track which runs along the south boundary of a field which is in rotational cultivation for maize. The site was tested by geophysical survey in 1980 (Sister 1981), work which tentatively identified elements of the milecastle within the northern field, somewhat to the east of the measured position of the milecastle, and guided the 2000 evaluation.
The evaluation

Although no visible remains of either the milecastle or the Wall can usually be seen on the ground, the Wall ditch was clearly observed as a linear indentation centred some 15m north of the southern edge of the field to the north of the track. The ditch was very clearly visible as a result of the deep rutting, which had been caused by the passage of farm machinery while harvesting a maize crop in the waterlogged conditions of the abnormally wet autumn of 2000. This observation caused the results of the geophysical survey to be regarded with some circumspection, as it seemed possible that the milecastle did not extend into this field at all. It was therefore decided to cut a single trench measuring 2m × 8m, oriented north-south, with its southern edge as close as possible to the field boundary. The intention was to locate the line of the Wall itself, as this would inform the positioning of any trenches to the south of the Wall that might have picked up the east and west walls of the milecastle. The result from this trench clearly demonstrated the futility of further evaluation trenches within the area of potential threat to the north of the track.

Trench 1 (Figs 275–6)
The topsoil in the trench (1600) ranged from 250–500mm in depth, and consisted of a friable deposit of very compact reddish-brown sandy silt (1603). A single undiagnostic Roman potsherd (Austen 2006) lay in the surface of this material immediately north of the Wall.

The Wall ditch was clearly observed as a linear indentation centred some 15m north of the Wall. The weight of the Wall above, now completely robbed, had caused the flagstone course to crack along the line of the offset. All that remained of the core was a thick scatter of irregular grey sandstone pieces, up to 170mm wide. This was completely robbed in the south-east corner of the trench in a very square area, a fact which at first suggested that two walls at right angles were actually present. The wall sat upon a widespread subsoil of very compact reddish-brown sandy silt (1603). A single undiagnostic Roman potsherd (Austen 2006) lay in the surface of this material immediately north of the Wall.

Interpretation

It is clear that the broad east-west wall found in the trench was Hadrian’s Wall. This is apparent from the structure and dimensions, and also from the crack along the foundation course, which is a virtual signature feature of the Stone Wall in the former Turf Wall sector (Caraganas and Figueira-Gladwyn 1980, 21; Hodgson and McKelvey 2006). It was surprising that no sign of the Turf Wall survived at all, as in Wall mile 61 considerable traces of turf work were present (Bennett this volume, p 124), and elements of turf work were also found on the site of Mc62 as reported above. The Wall exactly defines the south edge of the field, to such an extent that it seems likely that the track to the south is of considerable antiquity, and probably originated when the Wall was standing to some height.

The excavation firmly denied the results of the geophysical survey, and this requires explanation. The principal evidence for the side walls of the milecastle was the appearance of a pair of anomalies some 18–20m apart running southwards from the presumed wall line. Comparison with the excavated trench suggests that these anomalies simply represented parts of Hadrian’s Wall which were un robbed between areas of total robbing like that defined in the excavation trench. Mc63 clearly does not lie in the field which was evaluated, but under the track and the field immediately to the south.

Milecastle 69 (Sourmilk Bridge): 2000

The site

Wall miles 69–71 (Fig 271) lie in one of the least robbed and most poorly preserved stretches of the frontier, and have tended to be somewhat glossed over by antiquarian observers. The best description is provided by Horsley (1733, 155–6), who found the works obscure all the way from Newtown to Burgh-by-Sands (Wall miles 67–71):

“On the west side of the Eden the Walls are mostly obscure. At a part between Gronsdale on one side and Newton on the other, Severus’ wall is very visible, and Hadrian’s may be discovered about a furlong to the south of it. And a little to the east of Kirkanders the vestiges are clear. Between Wensandy and Brugh the track of the walls is also visible, and they come within a chain of each other. But excepting the ditch at the west end of Brugh, Hadrian’s wall now appears no more after this with plainness and certainty. And Severus’ wall in the general is for several miles very obscure, and much levelled. The people hereabout have no stone quarries for building, so that they spare no pains in digging for stones, wherever they have any prospect of finding them, upon which account the wall and stations have been sufficiently plundered. The ditches are the most visible part of the works, and are very discernible in going up to Beaumont.”

It is clear that even by Horsley’s time most of the remains had been damaged by comprehensive stone robbing MacLauchlan (1859, 80) described the course of the Wall running west from Gronsdale thus:

“The Wall crowned a height 350yds [320m] west of [Mr Sibson’s] house and curved back to the southward so as to run...
within a funnelling of the Mill, where it crossed the stream dividing Grinsdale from Kirkandrews. At this bend a greater quantity of foundation stones were seen than usual, and it was conjectured there might have been a milecastle at that spot.”

Much of this, as MacLauchlan admits, derived from hearsay provided by the elderly Mr Sibson, the Wall itself had completely disappeared by MacLauchlan’s time. From Kirkandrews the line of the Wall runs northwards along the bluffs on the west edge of the River Eden, until traces of the ditch can be seen below Beaumont:

“continuing our course along the top of the cliff, we find traces of the foundations of the Wall and the commencement of its ditch may be observed at a small stream about 30yds before we reach Beaumont, and up the hill both Wall and ditch are plainly visible.”

As to the Vallum (ibid, 81):

“the Vallum makes an angle at Kirkandrews when about 180yds [164.6m] east of the brook in the village and runs straight to Burgh. It is visible on the south side of the road at Monkhall, on the north of it at the watermill, where the south upper remains in part, and its ditch occupies the road at Wormbury.”

There is no known antiquarian illustration of this stretch except for a series of drawings by James Coates. Most of these show views of the course of the Wall as determined by MacLauchlan, with no visible fabric (Figs 145–7). However, his sketches of the Vallum in the Kirkandrews area are extremely valuable (Figs 152–3), particularly the image (Fig 152), which shows the Vallum near Monkhall Mill. This is now levelled, but Coates goes to the trouble of providing a profile, which clearly shows that the marginal mound was part of the works here. His view of the Wall ditch south of Beaumont (Fig 150) shows a feature that is still visible, although now almost completely overgrown by woodland.

Small evaluations have had varied success in the area. In 1996 an evaluation in Grinsdale village at NY337 558 failed to locate the Wall (Burnham et al 1997, 415), although a linear feature here appeared to be the Wall ditch. Mc69 and Mc70 have not been positively located, however, after his location of Mc71 and Mc72, Burle (1961) considered the chances of finding other installations between here and Carlisle. “Little hope can be raised for the Wall and the commencement of its ditch may be observed at a small stream about 30yds before we reach Beaumont, and up the hill both Wall and ditch are plainly visible.”

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including dressed stone, but generally comprising small, angular, grey sandstone pieces. Adjacent to this was a single course of faced sandstone flags, which appeared to be in situ (1504). These formed the south face of a flag foundation course of a wall, with a crack where the weight of the wall above had borne down on the offset below (Figs 279–80).

**Finds**

by N Hembrey

These small trenches produced a few modern finds and a single worked flint of late Neolithic or early Bronze Age date (Wilmott 2002, 37).
Interpretation
The character of the stonework and the crack along the flag course suggests that this is a surviving scrap of Hadrian’s Wall in the location pointed out by MacLauchlan to Mr Sibson. The depth of soil cover on the hilltop is rather more difficult to explain. The existence of ridge-and-furrow to the south of the Wall may offer an explanation. If the Wall stood fairly high at the time that the land was under cultivation there would have been a tendency for soil to build up against it as a headland developed. If the Wall was subsequently totally robbed, it would no longer retain the headland, which would tend to slump downhill over the robbed footings.

Milecastle 70 (Braelees): 2000
Like Mc69, this site has not been precisely located, although it is thought to lie in a ploughed field on the bluffs above the River Eden south of Beaumont. The Wall, in a heavily robbed state with only a few of the bottom course stones in position, was found immediately NNW of the measured site of Mc70 in 1977 (Goodburn 1978, 423). The measured site itself lies near NY 351 580 within OS parcel 1400, approximately 300m south of Beaumont Farm. The owner thanks that he has encountered the milecastle when ploughing in this field on the south side of Monkhill Beck. There are no visible indications of the milecastle on the surface.

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The lack of any visible trace of Mc71 was true in MacLauchlan’s time as well, although he recorded the possible site of a milecastle between Beaumont and Burgh-by-Sands (MacLauchlan 1858, 80). This site, which can still be traced on the ground, seems in fact to be that of Turret 70b and lies, as Bartle pointed out, one third of a Roman mile east of Mc71. The site of Mc71 lies to the south of Milldikes Lane, some 600m east of Greethill Beck, on the top of the ridge or spur that dominates the broad, shallow valley of the beck. It was designed to command a good view to the site of Mc72, although this was subsequently obscured by the construction of the fort at Burgh-by-Sands. Bartle excavated “successive trial trenches ... revealing remains of the axial road where it runs through the Wall, and also the milecastle west and south walls, the east wall lies beneath a field boundary, and could therefore not be located.”

Two worked flints and two Roman sherds were recovered (Bartle 1961, 39–40). No location plan of the trenches was drawn, and there is no record of their number. No site plan exists either. His report does not say in what condition the milecastle was, except that it was cut by field drains, and was in worse condition than Mc72 “in spite of the relative isolation of the site which might have been expected to give it greater protection from stone robbers” (ibid). Bartle’s large-scale location plan of the various milecastles and turrets in the area seems to indicate that his work was located in OS Parcel 7700, and that he believed the east wall to lie beneath or to the east of the field boundary on the east side of this parcel, dividing it from Parcel 9100.

The evaluation
In the absence of either surface traces or of any data from remote sensing, the site methodology developed as the work continued. Trench 1 (9m × 2m) was excavated across the supposed line of Hadrian’s Wall, and its site was determined by the barely perceptible crest of a low ridge. Having established the line of the Wall, a further four trial trenches were excavated in an attempt to find the eastern milecastle wall. Trenches 2–4 were each 5m × 1m, and Trench 5 measured 6.5m × 2m (Fig 282).

Trench 1 (Figs 283–4)
The ploughed soil (909) was 280mm deep. It sealed the fill of a field drain (906) containing a square-sectioned ceramic drain, which cut a plough furrow (903) interpreted as the levellid remnant of ridge-and-furrow. Beneath this was an irregular pit (922) filled with soil and a moderate amount of sandstone rubble (901) with an upper fill of sandy silt. This may have been an early robbing cut for Hadrian’s Wall, the remains of which lay directly beneath this fill. The southern edge of the pit was cut into a grey-brown sandy and silty clay subsoil (902).
The stone Wall (905) survived as a partial single course of facing stones over a flat, flagstone base (Fig 285). The facing stones were of hard grey sandstone, and the foundation course combined this material with softer red sandstone. The core was of compacted and crushed red and yellow sandstone rubble. Neither the facing stones nor the core showed any signs of bonding in either mortar or clay. The flagstone foundation course was 120mm thick, the facing stones were 260mm high, up to 390mm deep, and averaged 380–400mm in width. Beneath the stone Wall and above the natural grey clay (921) were two thin layers. The lower deposit was a dark brown organic silty clay (908), and above this was grey soil, slightly sandy, but otherwise identical to the natural clay (907). Column samples of this material were taken, but the preliminary interpretation is that these deposits represent the bottom layer of inverted turfs of the Turf Wall.

Trenches 2–4  
All three of these trenches showed the natural clay (921) beneath a layer of subsoil (902) with plough soil above (909). The concentration of stone in the upper layers was significantly less than in Trenches 1 and 5, and there was no sign of the turf layers at the base of the sequence. These were deliberately sought by re-opening part of Trench 2, in order to establish whether they were uniform across the site, or restricted to areas where stone structures overlie them.

Trench 5 (Figs 286–8)  
As in other trenches, the plough soil (909) was 280mm deep. The subsoil beneath this (910) was the same grey-brown sandy and silty clay defined in Trench 1. Beneath this material lay the remains of the east wall of the milecastle, and possibly the east wall of an interior building as well. It should be noted that the remains of the milecastle were extraordinarily slight, having been virtually obliterated by robbing and past ploughing.

The most obvious features on removal of the sub-plough soil deposit (910) was an interrupted line of fragmentary and degraded sandstone blocks (911), and, 2.98m west of this, a single such block (912). These were on the same north-south orientation, with the flat faces presented to east and west respectively. Between these stones was a motled sandy layer containing a high proportion of small sandstone pieces (913). The sandy part of this deposit was clearly decayed red, yellow, and grey sandstone. The entire feature represents the very bottom of the eastern outer wall of the stone milecastle. The sections of the trench showed a possible feature cutting through the sub-plough soil deposit. This was defined only by slight texture differentiation and by a concentration of sand and sandstone (917) (Fig 287). Interpreted, it appears to have been a 470mm wide, straight-sided, flat-bottomed feature running parallel to the milecastle wall, which lay 1.04m to the east. It is possible that this represents the shadow of the east wall of an internal building.

These residual stone structures sat on a light-grey silty sand deposit (914=915=919) containing sandy patches (920), beneath which was a partial black organic deposit (916). This profile is identical to that under the stone Wall in Trench 1, and is similarly interpreted – as the base of the demolished wall of the primary Turf Wall milecastle. This material lay directly on top of the natural clay (921).

Finds  
by P. Austen and N. Hembrey  
The site produced a few undiagnostic objects, including ironwork of probable modern date (Hembrey 2003). All pottery recovered was post-medieval in date (Austen 2006).

Interpretation  
The archaeological remains recovered, although slight, are of great importance given the lack of basic knowledge regarding the Wall and associated structures in this area. Bartle’s discovery of the milecastle is confirmed, as is its almost totally robbed
The east wall of the milecastle actually lies to the east of the boundary between OS Parcels 7700 and 9100, and not upon it as postulated by Bartle. It is clear that two archaeological phases of the milecastle survive. The Turf Wall and the walls of the Turf Wall milecastle survive to a single turf course, and the Stone Wall and milecastle occupy the identical site following a thorough demolition; a pattern found at Turf Wall milecastles from the easternmost (Mc49 (Harrows Scar); Richmond 1956) to the westernmost (Mc79 (Solway House); Richmond and Gillam 1952; and 193–8).

The presence of turf work lying directly upon the natural clay beneath shows conclusively that the cobble raft footings found beneath the Turf Wall at Burgh-by-Sands and at Mc72 (Austen 1994) were not present at Mc71. This useful observation narrows down the area where this exceptional form of construction was employed. The interpretation of a nebulous feature in Trench 5 as the wall of an interior building is strengthened by the fact that it is in exactly the right place for such a feature, and is of the right width. It was 470mm wide and 1.04m to the east of the milecastle wall. Extremely similar measurements have been recovered for the location of such walls at many sites, including those excavated during the present project. At Mc9 for example the equivalent measurements are 540mm and 1.02m. The east wall of the milecastle was totally robbed such that only a few degraded pieces of sandstone remained. The failure to find Mc69 and Mc70 in geophysical survey may well be attributable to similar total robbing of the stones at these sites.

Milecastle 78 (Kirkland): 2000

The site

Mc78 and Mc79 lie at the ends of the penultimate mile of Hadrian’s Wall as it passes along the southern edge of the Solway (Fig 289). This stretch has seen rather more archaeological observation and research than much of the frontier line west of Carlisle, as it has been necessary to explore the eastern end of the Turf Wall to compare it with the eastern end of this feature in the Birdoswald area. Comparisons between the archaeology of Wall mile 50 and Wall miles 78–79 were sought in the 1930s and 1940s in order to answer some of the larger outstanding questions of frontier morphology and chronology. The earliest reference to the site of Mc78 was provided by Horsley (1728, 157), who recognised that spacing between this milecastle and Bowness required that another milecastle should exist between them:

“This castellum [78] is fourteen furlongs from Bounness; so that there has been another [79] between this and the station, which has supplied the place of the last [80]. If the wall was begun at Bouness, then the castellum has been built just at a proper distance.”

Simpson et al (1935a, 214) recorded that a prominent platform still existed during their time.


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Fig 287 (top)

Milecastle 71: south-facing section of Trench 5.

Fig 288 (above)

Milecastle 71: surviving fragment of the east wall of the milecastle in Trench 5.

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This, although still clearly discernible, seems to have been eroded somewhat since by ploughing. The farmer, Mr Hogg, has often ploughed up pieces of sandstone, the larger of which he pitches into the hedge bank.

The only exploration of the milecastle to have taken place until now was carried out in 1934 as part of the long-running research campaign of the 1930s to establish whether the Turf Wall actually extended as far as the western end of Hadrian’s Wall. Following the discovery of the Turf Wall in the Birdoswald-High House area, this question became important in the final unravelling of the history of the linear components of the frontier and their relationships one to another (p 141). The report on its discovery is laconic, and no plans, photographs or detailed locational data were provided. Simpson et al (1935a, 217) wrote simply that “the west wall was found, measuring 9ft 2in [2.8m] across the foundations. One course of masonry stood upon the inner face above a five inch offset: the outer face had been robbed.”

No observation was made on the survival or otherwise of remains of the Turf Wall structure. The Vallum behind the site of Mc78 is clearly visible as an earthwork, as it is slightly further west behind Kirkland House, although it had not been noticed by Horsely, MacLauchlan or any other observer. Surprised by its appearance, Simpson trenchcd it in 1934 (Simpson et al 1935a, 214–5). The ditch was 1.95m deep and 6.9m wide with steeply sloping sides and a flat bottom. The south mound, which was revetted at the sides with turf cheeks, had its centre line 15m from the centre line of the ditch. The north mound, which was not examined, seemed to be the same distance away, but no mention is made of the marginal mound. This evaluation provided the first certain evidence that the Vallum extended westwards of Burgh Marsh. In 1948, Simpson located T78a, although no plans or detail of it were published (Simpson et al 1952, 14).

This trench also appears on Horsely’s map. Mc78 is situated at NY 2455 6134 (Fig 290), some 100m south of the road to Bowness-on-Solway, and to the west of the access road to the Glendale Caravan Park. It is bisected by a field boundary, the north side lying in OS parcel 5737 through which the line of the Wall passes, and the south in OS parcel 5830. The north field is under permanent pasture, but the larger south field is cultivated intermittently in rotation, and it was last ploughed and sown for pasture in autumn 1999. The site was included in the milecastle project in order to assess the impact of this activity on the surviving archaeology.

The evaluation
by Helen Moore

Trenches were excavated (Fig 291), their location guided by the topography of the slight milecastle platform, and by information from Mr Hogg concerning the location of parchmarks in drought conditions, and places where stones have been encountered in ploughing. Trench 1 (9m × 2m) was designed to traverse the west wall and to examine some of the interior, Trench 2 (6m × 2m) was intended to cross the south wall and Trench 3 (5m × 2m) the east wall.

Trench 1 (Fig 292–3)

The plough soil (1400) covering Trench 1 was 0.25m thick and contained very little stony material. Beneath it was a recent, but now inactive plough soil horizon (1401) 190mm thick, containing abraded sandstone rubble probably derived from ploughing above the milecastle. On removal of this material, an area of disturbance was defined running north–south across the trench. When excavated, this proved to be a shallow, roughly linear cut (1430) with gradually sloping concave sides. It contained two fills, the lower of which was very similar to the natural subsoil, a blue-grey silty clay (1432), c 60mm thick. This was only observed on the western side of the cut, and probably represents the rapid backfilling of the trench with the material excavated from it. The upper fill (1432), a grey-brown silty sand was 350mm thick, and contained many abraded red sandstone pieces. It is probable that this cut, which is late in the stratigraphic sequence, represents one of Simpson’s 1934 exploratory trenches. The excavation trench (1430) cut the western edge of a linear, north–south trench.
(1402) with vertical sides and flat bottom, 360mm deep, and filled with brown-red silty sand (1403) containing a large amount of red sandstone rubble, which was probably derived from the rubble core of the milecastle wall. It was 0.36m deep, and was approximately 3.5m wide, although this is uncertain due to the truncation on its west side. This was clearly the robber trench for the western wall of the milecastle, as the remains of the wall survived beneath the rubble fill.

The bottom course of the foundations survived in part (1426), the western face had been robbed in its entirety, as noted by Simpson. The eastern face consisted of a course of large flagstones 800–900mm thick and up to 0.56m × 0.32m in plan (Fig 293). The wall core was composed of red sandstone rubble bonded together with a pale blue-grey clay, which appears to have been derived from the natural subsoil in this area. The eastern edge of the robber trench (1402) was suspiciously neat and vertical. This led to the conclusion that this was no later cut, but that the facing stones above the flagstone course had been removed from the west side, leaving the earth face that they had retained. The material retained by the milecastle wall was a thick, compact deposit of grey sandy, silty clay (1423) 230mm in depth, which had a heavy admixture of pea gravel towards the top, possibly reflecting the curving outer face of the corner of the milecastle. Beneath the fills of the robber trenches lay the original wall. Only the west end of the southern robber trench (1410) was defined, but it was clearly continuous, both walls being robbed as part of the same operation. The fill (1409) was identical to that of the Trench 1 robber trench: a mid reddish brown sandy silt with frequent angular sandstone pieces derived from the rubble core of the wall as it was being robbed and demolished. The depth of the western robber trench was approximately 0.40m and the southern trench was 0.25m deep. Both edges of the southern robber trench were defined, giving a width of 2.55m.

Beneath the fills of the robber trenches lay the bottom course of the foundations of the south-west corner of the milecastle (Fig 295). This was 2.51m wide and of identical construction to the wall in Trench 1, except for the fact that dressed, flagstone foundation stones occurred on both faces of the corner. This revealed that the inner and outer corners were treated differently. The outer face was curved in the standard playing card shaped corner, but the inner corner was angled. This was clearly intended to be a right angle, but was in fact somewhat obtuse, at 95°. The interior of the milecastle was treated in the same way as noted in Trench 1. Again, the inner face of the wall seems to have been robbed from the outside, leaving the vertical earth face that it revetted, which consisted of grey silty clay surface (1412) overlaiding the inner face of the flagstone course by 80mm. Pottery was recovered from this surface, and a patch of burnt clay and charcoal on top of it may have been a ploughed-out remnant of a corner oven or hearth.

On the south edge of the trench, immediately behind the south wall of the milecastle, a pale blue-grey clay deposit (1427) was banked up over the outer 80mm of the south facing stones of the wall. It was thickest closest to the wall at 180mm, tapering to 50mm to the south. Immediately above this layer was a thin deposit of small whitish-grey pebbles and silty sand (1424), 1.40m wide and 160mm thick. This deposit may have been laid above the clay so that there would have been a dry, firm surface upon which to work to construct the superstructure of the wall. This interpretation is supported by the fact that a shallow post hole (1405) was excavated through this surface. It was half-moon shaped in plan, very shallow at 50mm deep, and may have been a post hole for scaffolding to construct the wall.

The robber trench (1408) following the west wall had vertical sides, and followed exactly the line of the original wall. Only the west end of the southern robber trench (1410) was defined, but it was clearly continuous, both walls being robbed as part of the same operation. The fill (1409) was identical to that of the Trench 1 robber trench: a mid reddish brown sandy silt with frequent angular sandstone pieces derived from the rubble core of the wall as it was being robbed and demolished. The depth of the western robber trench was approximately 0.40m and the southern trench was 0.25m deep. Both edges of the southern robber trench were defined, giving a width of 2.55m.

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The topsoil in Trench 3 was 250mm thick and directly below this archaeology was encountered. On the east side of the trench there was a substantial robber trench (1421), identical to those in the other two trenches, which marked the line of the east wall of the milecastle. The east edge lay beyond the limits of the trench. This robber trench was cut through a layer of mid grey-brown clayey silt (1412), which contained some large pebbles of sandstone rubble. These were randomly spaced and are likely to have been disturbed by ploughing. This is probably an early plough soil layer.

A number of finds were recovered during cleaning of this layer, including a brooch and a coin. This layer was not excavated, except in a very small slot, which revealed a grey clay surface beneath it that may be similar to the surfaces (1423) in Trench 1 (and (1412) Trench 2. Trench 3 was not excavated fully, but the discovery of the robber trench at the east wall filled the aim of establishing the overall dimensions of the milecastle.

The Wall westwards Immediately to the west of the site of Me78 is a small, deep north-south drainage dyke, which has been canalised and seems formerly to have been stone lined. It is probable that robbed Roman stone has been used for this as many sandstone blocks within the bed, both up- and downstream of the milecastle have a distinctly Roman appearance. Given that this dyke transected the line of the Wall, it was decided to attempt to locate...
it in section. Undergrowth was cleared, and part of the eastern edge was cleaned back slightly. This revealed the foundations of the stone Wall, comprising two large flagstones, of which the north facing stone was 90mm thick and 710mm deep. Above this was a mass of beach cobbles and sandstone pieces, which clearly comprised intact core work, robber trench filling or a combination of both. The importance of this observation was that it enabled the true line of the Wall, and thus the north wall of the milecastle, to be approximately established.

Finds by P. Austen, N. Hembrey and D. Shotter

Mc78 yielded a small assemblage of modern finds, but also fired clay fragments marked with grooves, which may have been loomweights (Hembrey 2003). Two Roman small finds were recovered: 1. 1461, context 1418, lower plough soil Small copper alloy bow brooch of Headstud type. The pin is missing, the catchplate is broken, and the headstud is broken off. The rectangular-sectioned upper bow is bent sharply to form the hinge casing, and bears two horizontal grooves half-way down its length, within which may have been blue enamelled decoration in several rectangular panels. The D-sectioned lower bow bears two projections, and tapers to the catchplate. Length 39mm (Fig 297)

Derived from the Colchester brooches, but found from Southern England up to Southern Scotland, from the mid-1st to late 2nd centuries AD, these brooches are regarded as high status and high quality, used by ‘a small section of the community’ (Hattat 1982, 100).

2. 1462, context 1418, lower plough soil Coin, damaged and moderately worn: AE As, Hadrian AD 119–38. Diam 22mm

A small quantity of Roman pottery was recovered (Austen 2006), principally from topsoil (1417, 1418) and robber trench fills (1408), including ten BB1 sherds: two are very everted cooking pot rims of the very late 3rd to early 4th centuries; and six are sherds (approx 20%) of the rim of a flanged mortarium in fairly hard creamy fabric with upright bead – close to Gillam 275, and probably late 3rd to early 4th century in date; and three sherds of greyware. The internal surface of the milecastle (1412) produced four sherds in a gritted fabric, probably 3rd century Roman.

Interpretation

No evidence for the Turf Wall milecastle was recovered. The stone Mc78 measured approximately 19.2m east-west and 20.7m north-south externally. The foundations of the walls were 2.5m wide consisting of large, 80mm thick flagstones with a core of sandstone rubble in clay. The pattern of robbing, whereby the vertical robber trench edges were cut 80mm short of the width of the foundations on both faces, suggests that the wall face above the flagstone course was set back from the edge of the flags by an 80mm offset, both inside and outside. The curtain wall around the milecastle would thus be 2.35m in width. The southern exterior corners were curved, giving the standard playing card shape, but the internal corners were square. This treatment is common to many other milecastles, such as Mc37 (Housesteads), Mc39 (Castle Nick), Mc42 (Cawfields) and Mc79 (Solway House).

There is evidence for artificial surfacing both inside and outside the milecastle. This was put in place after the walls were built, but probably as part of the building process. The internal surfacing, of grey clay 250–300mm thick, capped with gravel was dumped up against the milecastle walls and levelled, and it seems possible that it was laid to prevent waterlogging. In the south-west corner was a truncated burnt feature, which may have been a hearth or oven, and is strongly reminiscent of the similar burnt feature in the south-east corner of Mc10 (Walbottle Dene) (p. 188).

Milecastle 79 (Solway House): 1999

The site

The milecastle occupies the north-west corner of OS field 6320, immediately east of the agricultural storage barn (Fig 298). The MPP revision of the scheduling has renumbered this part of the monument as SM/28476. It is at present under pasture, and is ploughed at intervals for pasture renewal, which is the reason for its inclusion in the Milecastles Project.

References to this end of the Wall in antiquarian literature are comparatively few, and illustrations very much more scarce. James Irwin Coates’ evocative painting of 1881 captioned “Core of Wall,”
Fig 299
Milecastle 79: plan of 1949 excavations with 1999 trench plan superimposed.

The site of Mc79 was initially recognised by Simpson in 1948, and its location at NY 2369 6224, 300m west of Port Carlisle was confirmed when it was partially excavated in 1949 by Richmond and Gillam (1952), using a labour force of Ukrainians (ibid, 40), apparently from PW Camp 68, Lockerbie. This excavation was prompted by wider questions about the frontier at large (Richmond and Gillam 1952, 17). It had been found to survive in good condition during Simpson’s trial trenching in 1948, and was considered to be the most suitable site to answer a specific question. The excavation of Mc50 (High House) in 1934 (Simpson et al 1935b) had shown that its occupation had been short, and that the Turf Wall and milecastle was soon superseded in the Birdoswald sector by the Stone Wall and milecastle. The stone Mc50, however, occupied a different site to its predecessor. It was decided to examine the stratified material from a milecastle where the stone phase survived above the turf phase in order to establish the duration of occupation of the turf installation before its replacement. Furthermore, the selection of a site as far west as possible would provide a date that would reflect the end of the period during which the replacement in stone took place.

The 1949 excavation investigated the eastern half of the milecastle (Fig 299), with trenches also cut across the side walls and in the gates. The milecastle, together with the Wall on each side of it, was built upon an artificial platform or embankment 1.49m high, built up of alternating turf and gravel layers (ibid, 27). This was clearly intended to preserve the Turf Wall from undermining by the flooding, which is still a common occurrence between Port Carlisle and Bowness.

The turf walls of the first phase of the milecastle survived sufficiently well to show that they were 5.7m thick, and the milecastle measured 14.47m east-west and 12.13m north-south, making it the first Turf Wall milecastle that could be described as short-axis in plan, and the first where any distinction of axis type could be made (Fig 300). The flanking posts for the south gate were found, the gate being offset some 500mm west of a central position. The gate passage itself was 3m wide, and timbering did not re-erect the full width of the passage, as at Mc50TW. The excavators (ibid, 25) suggest that the gate did not support a tower. A turf base for a stair or ramp to the rampart was identified in the south-east corner of the milecastle.

No traces of a building were found in the eastern half of the milecastle in this period, although a number of ovens or hearths occupied the space. One of these (H1) comprised a re-used amphora base, the second (H2) was slightly raised, edged with upright stones, and paved with flat slabs. It was replaced and over lain by H3, of which flat slabs in a rectangular form survived (ibid, pl vi, L Fig 301). H3 was a well built rectangular hearth with a fireback. In addition to these hearths there was a low table or stand made of three slabs placed upright on edge, supporting two flat flags. A sinuous shallow depression filled with cobbles was probably intended to backfill subsidence in the top of the sea bank.

The pottery recovered from the Turf Wall phase deposits was compared with that from Mc50TW. It was suggested that the original construction of Mc79 came somewhat after that of Mc50, and that occupation at the former site continued longer within the reign of Hadrian than at Mc50TW, where the later Hadrianic material was found in Mc50SW. The absence of Antonine material suggested to the excavators that this end of the Turf Wall was replaced in stone after, rather than prior to, the Antonine occupation of Scotland (ibid, 30–1).

The stone replacement of the milecastle followed a fairly thorough demolition of its predecessor (Fig 302). The interior of the milecastle was built up by the addition of a deposit of gravel some 430mm thick, which sealed the occupation horizon of the Turf Wall milecastle. The stone side walls were 2.42m wide at the foundation, while the north wall, and therefore the Stone Wall measured 2.83m over the foundations, with the first course 2.64m wide after offsets had been taken into consideration. The thickness was further reduced by two offsets on the south face. The walls were all founded on a single course of thin stone flags without any packing beneath, and these flags had consistently cracked along the line of the offset under the weight of the mass of masonry above in the manner typical of the stone replacement to the Turf Wall.

The southern corners of the milecastle were squared on the inside, and curved around the outside. The gates were not well preserved, although four square pier foundations were found,
comprising packed clay and cobbles in foundation pits. In the stone phase there had clearly been a timber-framed building in the east half of the milecastle. This was represented by a series of paired post holes, of which only the stone-lined bases remained. The building might not have lasted long, as its gate jamb stones. The excavators associated this activity with an early 3rd-century remodelling of the gate. It certainly did not mark the end of the occupation of the milecastle, as the pit was overlain by a renewed road surface, and a Constantinian coin and some early 4th-century pottery was found. The post-excavation photograph (ibid, pl vi Fig 303) shows what was excavated and what left behind, and presents a rather odd picture to modern eyes. Over most of the area, the whole site was stripped down to the level of the earliest Roman surface of the turf milecastle phase. The ovens were left in situ. The structural features of the stone phase were also left, however, and two lines of upstanding square blocks can be seen where the stone packing at the bottom of the post holes for the stone phase building remained on ‘islands’. Comparison between the height of these islands and the unexcavated ground suggests that the stone-packed post holes were not far beneath the plough zone, and it seems apparent that anything above this would have been totally removed by stone robbing and ploughing. In the distance on this photograph the base of the turf walls can be seen under the gravel make-up for the stone phase. The relative height of the bottom flag course of the wall suggests that the stone wall was cut into this gravel deposit, or alternatively that this deposit was laid down as surfacing within the walls of the stone milecastle after these had been built.

The evaluation

Two trenches were excavated. Trench 1 (8m × 2m) sampled the inner face of the east wall and part of the interior, while Trench 2 (4m × 2m) examined the milecastle towards the south-west corner.

Trench 1 (Fig 304) This trench lay entirely within the area excavated in 1949, and could be precisely located with relation to the published plan (Richmond and Gillam 1952, fig 3). There had clearly been episodes of ploughing following the backfilling of the excavation, and the plough soil was on average some 320mm deep. Beneath this, in the north-east corner of the trench there was a small area of surviving stratigraphy that was higher than that in the rest of the trench. Comparison with other features soon showed that this was one of the islands upon which a stone-phase post-pad had been preserved. It was also apparent that the stones of the pad had disappeared, presumably displaced by the plough since 1949. The depth of the make-up for the stone phase could be established at this point as 430mm. It mostly comprised greyish gravelly soil, although there was some turf mingled with this towards the base. Over the remainder of the trench it was necessary to remove some 430–500mm of the very mixed backfill (302) of the earlier trench, down to the level at which excavation ceased in 1949.

Apart from the ‘island’, the only other element of the stone phase to survive was part of the inner face of the east wall. During 1949, only the inner face of the wall was exposed when located. Only the bottom, thin flag foundation survived, and it was clear both that this wall had been robbed prior to the 1949 excavation, and that Richmond and Gillam had missed the robber trench (310, fill 309).

Turf-phase features survived well. At the west end of the trench, a shallow area of disturbance (314) appears to have comprised the excavated butt end of the sinuous cobbled-filled subsidence void. Immediately east of this was a sub-circular hearth (305), 800mm in diameter, comprising a floor of small sandstone slabs and several vertical edging stones. The hearth stones were scorched through use. Comparison with the plans and photographs of 1949 demonstrates that this was the hearth previously designated H2 (Trench 305, compare Fig 301). When first excavated this had lain beneath a later hearth (346), which was clearly removed in 1949.

Finally, a pair of flagstones (313), one placed on edge, appears to have been all that survived of the flagstone stand or table. Beneath these features there was a layer of turf material (304), which can be identified as part of the turf and gravel platform upon which the milecastle was constructed.

Trench 2 Trench 2 was cut into the largely undisturbed western side of the milecastle. The plough soil was 300mm deep. The trench clearly confirmed the putative location of the milecastle as established in 1949. The main feature in the trench was the turf construction of the south wall of the turf milecastle (304). This was cut to the south by an apparent robber trench for the later stone wall (307), the fill of which contained sandstone rubble (308). At the north end of the trench there was the cut of an archaeological trench (306), presumably from the 1949 excavation, although this was not recorded on the site plan.

Finds

No further Roman finds were recovered from this site, although 13 sherds of Roman pottery were recovered from the 1949 excavation backfill (Austen 2006).

Interpretation

The evaluation was successful in showing the accuracy of the previous results, and that the milecastle had not been extensively damaged by ploughing since the 1949 excavation. No further interpretation was possible.
Discussion

It is many years since a project of the multi-site type of the Milecastles Project has been undertaken on the Wall. The practical work in looking at a series of different locations along the Wall was reminiscent of the Hadrian’s Wall Project to appreciate the scale of the Wall and focused them to think in terms of the whole monument rather than of individual, discrete locations. The Project provided the invaluable opportunity to compare and contrast similar installations on the ground in different places, despite the fact that a minimum of such stringency was exposed. The Project enabled a more detailed range of points of discussion to emerge, as it forced the consideration of the observed similarities and differences between milecastles.

Milecastle locations

Apart from the milecastles in the urban area of Newcastle, the location of those east of the Irthing are well known. The same is certainly not true of those from Irthing to Solway, where the sites of Mcs66–70 are not the only uncertainly located sites. The projects reported in this volume show that the location of such sites by geophysical means needs to be tested and confirmed by excavation. Mc65 was located through the geophysical survey (Bartlett 1976) and the identification was confirmed by trenching (Symonds 1978, 35–6), but the attempts to locate Mc69 and Mc70 by these means failed. The geophysical locations of Mc58 and Mc69 in 1981 (Gatrell 1981) were confidently interpreted, although they remain untested (but see Mc59, see Proc Soc Antiq Newcastle 1897, 220, where foundations were reported east of Old Wall), while the third confident location, of Mc64, has been confirmed by excavation. The tentative identifications of Mc61 and Mc63 must be regarded with circumspection, as the latter proved erroneous when tested. It seems probable that the reason for the failure to locate milecastles by geophysical means is the result of their being totally, or almost totally, unexcavated in antiquity. It is very unlikely that the incredibly sparse remnants of the robbed Mc71 would have shown in geophysical survey.

Order of construction

The issues of construction order recently raised by Symonds (2005) are relevant to Mc14. His contention that Broad Wall milecastles were completed early in the building of the Wall is supported by personal communications and various publications (M Symonds pers comm.). The Project enabled a more precise identification of the time at which the various milecastles were completed. These observations are important, as it is certain that further examples of Broad Wall milecastles at such crossing points will be found. It is possible that the emphasis in the early construction of Mc47 and Mc48 (Symonds 2005, above p.139) was not so much to control the area between the Tipalt (High Burn) and the Irthing, but to guard the potential crossing points afforded by the Irthing (in the case of Mc47), and the deep defile of Mc62 (Poltross Burn) in the case of Mc48. The Irthing gap would be confirmed the situation observed previously at Mc49 (Richardson 1956), Mc72 (Austen 1994) and, of course, Mc79 (Richardson and Gilliam 1950). The southern corners of the stone Mc78 were rounded on the outside, so that the line of the road was squared on the inside. This process occurs relatively frequently, being recorded at Mc47 (Westgate Road), Mc35 (Sewingshields), Mc37 (Housesteads), Mc39 (Castle Nick), Mc42 (Cawfields) and Mc79 (Solway House), as well as Mc50TW (High House). The alternative treatment seems probable that the reason for the failure to locate milecastles by geophysical means is the result of their being totally, or almost totally, unexcavated in antiquity. It is very unlikely that the incredibly sparse remnants of the robbed Mc71 would have shown in geophysical survey.

Some evidence was gathered about the internal arrangements of milecastles. In Mc10 and Mc78 there were apparently ovens constructed in the south-east and north-west corners, respectively. Ovens in analogous positions occur in the south-east corner of Mc39 (Castle Nick) (Ferre 1987, 316), the north-west corner of Mc47 (Chapel House) (Symonds et al 1936b, 270–2), and in multiple phases in the north-west corner of Mc48 (Poltross Burn) (Gibson and Simpson 1911, 429–33) and Mc50 (High House) (Simpson 1913, 332). At Mc15 (Sewingshields) (Haigh and Savage 1984) ovens or industrial activity of various periods has been found in the north-west, south-west and south-east corners, but not in the north-east corner; an oven was found and excavation outside the milecastle revealed an ovens in the same position, has been found at Mc40 (Winshields) (Simpson 1976, 93).

<table>
<thead>
<tr>
<th>Milecastle</th>
<th>Internal Dimension</th>
<th>Internal Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mc46 (Harrows Scar)</td>
<td>18.29 x 16.45</td>
<td>300.87 sq m</td>
</tr>
<tr>
<td>Mc49 (Harrows Scar)</td>
<td>19.81 x 22.86</td>
<td>452.86 sq m</td>
</tr>
<tr>
<td>Mc50TW (High House)</td>
<td>20.12 x 16.76</td>
<td>337.24 sq m</td>
</tr>
<tr>
<td>Mc50 (High House)</td>
<td>20.36 x 17.28</td>
<td>423.55 sq m</td>
</tr>
<tr>
<td>Mc62 (Tipalt)</td>
<td>20.74 x 19.2m</td>
<td>390.88 sq m</td>
</tr>
<tr>
<td>Mc63 (Bankshead)</td>
<td>23.39 x 21.94</td>
<td>513.12 sq m</td>
</tr>
<tr>
<td>Mc64 (Poltross Burn)</td>
<td>21.94 x 19.05</td>
<td>414.03 sq m</td>
</tr>
<tr>
<td>Mc65 (Rockers Burn)</td>
<td>23.62 x 17.83</td>
<td>413.15 sq m</td>
</tr>
<tr>
<td>Mc66 (Tipalt)</td>
<td>22.86 x 19.58</td>
<td>435.62 sq m</td>
</tr>
<tr>
<td>Mc67 (Bankshead)</td>
<td>23.62 x 17.83</td>
<td>423.55 sq m</td>
</tr>
<tr>
<td>Mc68 (Bankshead)</td>
<td>23.62 x 19.58</td>
<td>452.86 sq m</td>
</tr>
<tr>
<td>Mc69 (Harrows Scar)</td>
<td>19.05 x 17.52</td>
<td>325.21 sq m</td>
</tr>
<tr>
<td>Mc70 (Tipalt)</td>
<td>21.94 x 18.49</td>
<td>403.96 sq m</td>
</tr>
</tbody>
</table>

Table 3 Dimensions of milecastles in the Turf Wall sector for comparison with Mcs 62 and 78.
Fragments of internal buildings were recorded in Mc9, 14, 19, 62, 71 and 79. The widths of buildings, and their distance from the milecastle walls seem to vary very little as far as can be judged. The building in Mc14 was c. 4.4m wide (externally), and (1.26m from the milecastle wall). The foundations of the building were 760mm wide. This was comparable with Mc9, where the equivalent dimensions were a wall 4.5m wide, with a gap between the building and milecastle wall of 1.02m and a superstructure width for the building wall of 540mm. The most likely reconstruction of the evidence for Mc62 would be a building 4.4m wide and a gap between building and milecastle wall of 1.2m; exactly as found as Mc14.

In Mc79 the timber building of the stone phase was 3.3m wide and 1.6m deep from the milecastle wall. No set of measurements were recovered during the Project, although Mc19 had a building wall width of 560mm located 1.68m from the milecastle wall, and Mc71 had a wall width of 470mm located 1.04m from the milecastle wall. These dimensions are consistent with those known at other milecastles (Table 4).

In all cases examined, except Mc14, buildings were on the eastern side of the central road. In Mc19 the west side of the milecastle was cobbled, and it seems certain that there was no building here. Few milecastles have been sufficiently explored to establish whether they had enclosures or buildings or pairs. The only two known with such buildings were on the central roadway, apparently from the beginning, are Mc47 (Chapel House) (Simpson et al 1990) and Mc48 (Birchtree Burn) (Gibson and Simpson 1911), probably because these were built early for strategic reasons (Symonds 2005). Single buildings to the east of the roadway are attested for the primary Hadrianic period at Mc16 (north side of Butsfield) (Birley 1930), Mc17 (South Wall) (Sewingshields) (Haigh and Savage 1984), Mc50TW (High House) (Simpson 1913), although later alterations at Sewingshields involved building on both sides of the central road. To do the list of primary plans with early buildings can now be added Mc19 (Martini Piers), which was truncated down to present levels, and where both sides of the central road were sampled. At Mc37 (Houseshead) also, there was a stone-built structure on the east side with a timber ‘shed’ on the west (Daniels 1979, 165). At Mc39 (Castle Nick) the single primary barrack lay on the west side (Ferre 1987, 316), and the same was true of Mc54 (Randylands) (Simpson and Richmond 1935a, 384–41).

There is clearly no consistency in layout, and the lack of buildings or pairs. The only two known with primary buildings to be erected on the east sides of the milecastles. There is no meaningful correspondence whatever between the position of primary buildings and the gate or axis type.

### Exterior areas of milecastles

Two sites have confirmed the existence of walls outside the walls of milecastles. At Mc9 an area of stone paving was provided outside the walls of the milecastle to the north-east, and a ditch to the east which was excavated at the same time as the building of the milecastle. The ditch does not seem to have served a defensive function, and its purpose remains to be established.

At Mc14 there is a number of features of containing Roman pottery were identified outside the milecastle.

Further examination of the areas around milecastles have been rare, and the only other Roman structures known in such locations are the ovens found outside the north-east corners of Mc35 (Sewingshields) (Haigh and Savage 1984). Mc35 (Sewingshields) (Haigh and Savage 1984) know little of the nature of the ditch. Here, metalling was observed on the line of the projected site of the north gate. Similarly, metalling has been observed at Mc49 (D rawdykes), and classically at Mc35 (Randylands), where metalling ran northwards from the gate towards a probable ditch crossing, which was represented by the base of a curb in the bottom of the ditch (Simpson and Richmond 1935, 236-44; Welfare 2000, 24). Mc62, the metalling was relatively deep, and was hard and compact. It suggests a track running north, and should imply a ditch crossing. Interestingly Mc62 is one of the sites that were visible in palaeoearthwork and geophysical evidence, has recently proposed as having a primary causeway.

### Post-Roman histories

Mc14 and Mc17 contained post-medieval buildings, probably field barns or similar structures. These join a substantial number of milecastles that accommodated later buildings. The best set of medieval buildings within a milecastle were found at Mc35 (Sewingshields) (Haigh and Savage 1984), while at Mc39 (Castle Nick) a building on the western side turned out to be a mill (Wilmott 2000b, 15). However, points out that there is no reason why a soldier could not die and be buried at a milecastle, involving the tombs found re-used in Mc38 (Hotbank), Mc62 (Cawfields) and Mc49 (Harrows Scar). The last mentioned (that of a child) may be from a post-Roman period and therefore more akin to the long cists found alongside the Wall at Sewingshields (Crow and Jackson 1997). However, points out that there is no reason why a soldier could not die and be buried at a milecastle, involving the tombs found re-used in Mc38 (Hotbank), Mc62 (Cawfields) and Mc49 (Harrows Scar). The last mentioned (that of a child) may be from a post-Roman period and therefore more akin to the long cists found alongside the Wall at Sewingshields (Crow and Jackson 1997).

Excavations at Mc50SW (High House) recovered 17th- and 18th-century material (Simpson 1913). Post-medieval buildings are located in Mc52 (Bankshead) (Simpson and Richmond 1935c) and in Mc53 (Banks Head) (Simpson 1933a). Post-medieval buildings are located in Mc52 (Bankshead) (Simpson and Richmond 1935c) and in Mc53 (Banks Head) (Simpson 1933a). There is some evidence for the existence of a probable ditch crossing, which was represented by the base of a curb in the bottom of the ditch (Simpson and Richmond 1935, 236-44; Welfare 2000, 24). Mc62, the metalling was relatively deep, and was hard and compact.

It suggests a track running north, and should imply a ditch crossing. Interestingly Mc62 is one of the sites that were visible in palaeoearthwork and geophysical evidence, has recently proposed as having a primary causeway.

### Preservation

The primary management aim of the Project was to demonstrate the value of preservation of, and the threat to

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Table 4 Dimensions and locations of primary buildings within milecastles (excluding Mcs 47 and 48, each of which has two internal buildings).

<table>
<thead>
<tr>
<th>milecastle</th>
<th>9</th>
<th>14</th>
<th>19</th>
<th>37</th>
<th>39</th>
<th>50TW</th>
<th>54</th>
<th>62</th>
<th>71</th>
<th>79</th>
</tr>
</thead>
<tbody>
<tr>
<td>external length (m)</td>
<td>4.5</td>
<td>4.4</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>4.57</td>
<td>4.61</td>
<td>4.4</td>
<td>–</td>
<td>3.2</td>
</tr>
<tr>
<td>external width (m)</td>
<td>4.1</td>
<td>2.2</td>
<td>1.6</td>
<td>1.8</td>
<td>–</td>
<td>0.82</td>
<td>1.21</td>
<td>1.04</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>distance from MC E or W wall (m)</td>
<td>540</td>
<td>760</td>
<td>560</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>470</td>
<td>timber</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>wall width (mm)</td>
<td>6</td>
<td>W</td>
<td>E</td>
<td>E</td>
<td>W</td>
<td>E</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>east or west side of road</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
milecastles. The broad conclusion was that the state of preservation varied from site to site, and that no general rule or trend could be drawn. Only three sites, Mc9, Mc14 and Mc19, were being actively affected by continued ploughing. Mcs10, 62, 71, 78 and 79 were stable, having been ploughed in the past; in other words the plough damage that was going to occur had already been done. In the single case of Mc17, the downhill drift of soil during ploughing had served to protect the milecastle. It was clear that stonework from the western milecastles of the Wall has been robbed almost completely in the past. This was certainly true of Mc71, where only a few small stones survived, and was probably the reason for the failure to identify Mc69 and Mc70 through geophysics. It is apparent that individual threats will need to be addressed by separate management strategies and agreements on a site-by-site basis.

Part 1: Introduction

The report on the major excavations at Birdoswald between 1987 and 1992 was published in 1997 (Wilmott 1997a). At the time, it was considered unlikely that further work on the site would take place for many years, perhaps for a generation or more. This was not the case however, and no fewer than five archaeological projects were undertaken in 1996–2000. The work was mostly carried out through the Centre for Archaeology and its predecessors (p 2–7), while projects not directly implemented by CfA were either funded by English Heritage, or carried out in close collaboration. This report is the final statement on these projects, and acts as a supplement to the 1997 publication. Some interpretations in the previous work are overturned, but in most cases conclusions are either confirmed and expanded, or revised and moved forward. Frequent reference to the 1997 volume is made throughout this report, and a summary site history is provided at the end to unify the results of all projects undertaken up to 2000 and to consolidate current knowledge. The introductory and stratigraphic sections have been written by TW, incorporating information from the work of the co-authors, whose free-standing sections appear in the report under their names.

The site

Topography and geology

Birdoswald, in Wall mile 49, is the eleventh fort from the east end of Hadrian’s Wall, lying 5.2km from Carvoran to the east, and 11.2km from Carlisle to the west (Fig 306). In addition there is a road connection, the Maiden Way, to the outpost fort of Bewcastle 9.6km to the north. The fort is situated on a high spur contained to the south by a broad meander of the River Irthing. The underlying geology of the spur consists of the Upper Border Group of Carboniferous sedimentary strata, including crinoidal limestones, dark-blue shales and grey-white micaceous sandstones, of which a (now outdated) subdivision is known as the Birdoswald Limestone Group (Turner 1971, 52). These rock types were all utilised as building materials on the site, and can be seen as exposures in the sides of the Irthing Gorge. It is probable that the river cliffs below Birdoswald fort were used as quarries during the Roman period as was the case a little further downstream at both Coombe Crag and Lanerton, where Roman quarry inscriptions have been noted (Hodgson 1840, 440; RIB 1946–52; Collingwood 1930, 120; Hassall and Tomlin 1992, 316–7). The site lies above two clear north–south faults in the underlying geology. The upper drift geology consists of a thick deposit of pinkish boulder clay, the white weathered surface of which forms the natural subsoil of the site. Modern profiles developed over these clays comprise fine loamy mineral soils known as stagnogleys (Avery 1980; the Salop series after Kilgour 1985). These soils are typically subject to periodic wetness in their surface horizons, attributable to a combination of relatively high rainfall (900–1,000mm per annum) and impermeable boulder clay at depth. Modern topsoils are only slightly organic and are moderately acid. Surface wetness precludes widespread cultivation and most areas are utilized for permanent grass, pasture and rough grazing. An important element of the microtopography of the spur is a dip of unknown extent, which occupies the centre of...