

The Building of Hadrian's Wall: a review of 50 years

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SUMMARY

The evidence for the building of Hadrian's Wall since 1968 is reviewed with assessments offered. The review embraces all elements of the Wall during the reign of Hadrian, and some later aspects and considers the implications for the building programme and the purpose of the frontier.

INTRODUCTION

IN 1968 I PUBLISHED MY FIRST PAPER, on Hadrian's Wall, in *Archaeologia Aeliana* (Hooley and Breeze 1968) It was a collaboration between Joyce Hooley, then studying the minor installations on the Wall under Eric Birley, and myself who was striving to lecture students on the building of Hadrian's Wall on the basis of C. E. Stevens' recently published monograph on the subject (Stevens 1966). Joyce and I came to the conclusion that neither of us found Stevens' thesis very convincing and offered our own view of the evidence; Stevens was later to admit that 'we may have been right after all' (pers. com.). The addition of a diagram, for the first time setting out the evidence for the different types of milecastles, turrets and wall, rendered our case more understandable, and 50 years on our proposition remains generally accepted (though see Bennett 2002).

The main thesis of the 1968 paper was that the intention of the first plan for Hadrian's Wall had been to divide its line into lengths of five miles, each to be constructed by a single legion. The accompanying diagram, which only related to the Stone Wall, provided confirmation that in the 15 miles from about MC 7 to MC 22 there were three discrete types of milecastles, turrets and curtain wall. There was less evidence for the five-mile stretch from MC 22 to MC 27 beside the river North Tyne, but what there was indicated building by one legion. Between the North Tyne and the river Irthing, however, the position was more muddled and we argued that the 12-mile stretch from T 36a/b through to the Irthing was started by two legions, but that this sector and the rest of the central sector was completed by another legion; we suggested the Twentieth. On the Turf Wall we were able to suggest that it had been divided into six blocks of five miles, though based on much less evidence. One remaining problem was the stretch from the bridge at Newcastle, close to the as-yet-undiscovered MC 4, to about MC 7: we proposed this was a trial section of Wall, a suggestion that was born out of our despair at the lack of knowledge of the structures and of the Wall in this sector.

Since 1968 more information has come to light, most presented to the public in the pages of this journal. As a result, our understanding of the building of that mighty frontier is now more nuanced. This paper is an attempt to detail this evidence and offer some conclusions. Yet, it is freely admitted that many of the theories and hypotheses discussed below are based upon slender evidence, and there remain disagreements between those studying Hadrian's Wall. In all cases, I have sought to indicate such disagreements.

My net is wider than that cast in 1968. This reflects not only the additional new information, which includes excavations undertaken before 1968 though published later, but also the

many publications which discuss various interpretations of the evidence. The intensity of work on Hadrian's Wall over the last 50 years is impressive: there have been more than 40 papers on the subject in the pages of this journal alone. It therefore seems sensible to extend this review to embrace other aspects relating to the building of Hadrian's Wall, though elements such as architectural details and quarries only appear obliquely. The intention below is not to enter detailed discussions of the publications and the arguments but rather offer notification of the issues with minimal comment and appropriate bibliographical references.

Different approaches to the presentation of the evidence are possible. I have chosen one based on the structures of the Wall and themes rather than one related to the chronology of publications, though within each section I have tended to follow a chronological sequence of discussion. There is obviously some overlap between the various sections though I have tried to keep this to a minimum and I have generally not provided cross-references as they would increase the length of an already long paper. References have been provided and in addition, where appropriate, I have cited the 14th edition of the *Handbook to the Roman Wall*, which contains basic information on the sites discussed and an extensive bibliography up to 2006. Many other comments exist in such as footnotes and I hope that colleagues will forgive me if I do not cite every reference. Inevitably, writing this article has sparked further thoughts and I have placed these in square brackets.

LOCATION

The location of Hadrian's Wall is usually taken for granted: it used the Tyne-Solway isthmus as a convenient narrow point across the island (fig. 1). In 2005, I considered its location in relation to wider questions (Breeze 2005). Groenman-van Waateringe (1980) had suggested that the Roman empire had stopped expanding when it reached tribes or states of insufficient

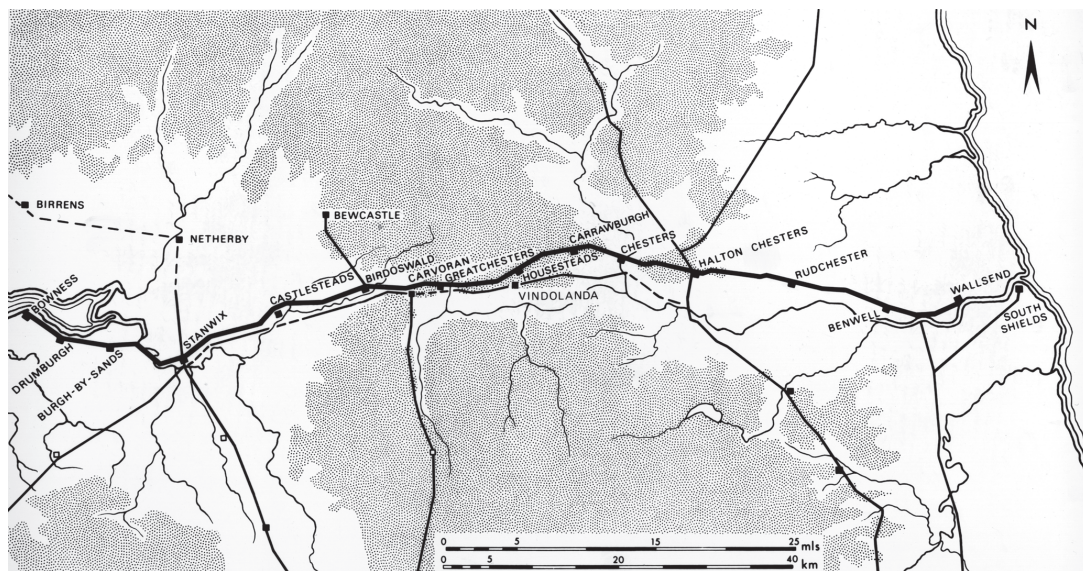


Fig. 1 Hadrian's Wall, locations, etc.

socio-economic development to allow Rome to impose a workable administrative structure. On that basis, the northern frontier of Roman Britain ought to have been on the Humber-Mersey line. This would have created a frontier about 250 km long. The British might regard such a length as an issue, but the Romans would not for the land frontier in Germany was twice as long.

The reason why Hadrian's Wall was erected on the Tyne-Solway isthmus, I suggested, was that politics were involved. The Brigantes, occupying much of northern England, appear to have formed a client state of the Romans since the earliest years of the conquest. They were formally incorporated into the empire in the 70s and about 15 years later the Romans were building forts on the edge of the Highland Line, over 200 km to the north. In 87/88 the army started the process of withdrawal, eventually stopping roughly on the Tyne-Solway isthmus, approximately the northern limit of Brigantian territory. To have continued as far south as the 'Groenman line', thereby abandoning territory long regarded as Roman, may have been regarded as too great a loss-of-face. Thus, geography and politics combined to halt the army on the Tyne-Solway isthmus.

SURVEY

The contribution of John Poulter to our understanding of the surveying of the line of the Wall has been remarkable (Poulter 2009; 2010). Poulter's conclusions were that 'long-distance alignments appear to have been set out first, and then deviations set out from these alignments where necessary to meet local objectives, such as the crossing of rivers' and that 'the directions of setting out seem to have been inwards from the extremities towards the crags' (Poulter 2009, 73). He also asserted that to the east and west of the crags, the Wall was not placed on the northern edge of the ridge or plateau along which it runs but the southern edge as if to aid the soldiers to retain contact with the military installations in the valleys to the south (Poulter 2009, 78).

LOGISTICS

Several publications have considered logistics. Kendal reviewed the building materials and calculated the quantities required before moving on to consider the transport logistics and related issues (Kendal 1996). Hill (2004) included such considerations, and more, including scaffolding and quarrying, suggesting that the early stages of the work could have progressed quicker than hitherto believed. It was partly Hill's emphasis on the requirement for scaffolding which led Graafstal to argue for a start on building the Wall before Hadrian's visit in 122 (Graafstal 2012, 129). Hodgson has undertaken a detailed analysis of the building of the Wall and Cumbrian coast (Hodgson 2017, 192–203).

THE EAST END OF THE WALL

The authoritative statement by those who examined the remains from Wallsend to Rudchester in the 1920s that the original intention was to end the Wall at Newcastle and that it was later extended to Wallsend has been accepted unquestioningly for many decades (Spain and Simpson 1930). The statement was based upon the perceived change in the foundations and width of the Wall at Newcastle. West of Newcastle the Wall was Broad, east it was

Narrow; to the west the foundations were placed on flags laid directly on the ground while to the east the foundations were of clay and cobble laid in a trench.

Bennett observed that it is possible that the Wall was always intended to end — or start — at Wallsend and not Newcastle (Bennett 1998, 30). He interpreted 'what to all intents and purposes [are] Broad gauge footings at St Francis' Church (about T ob) as raising the possibility, previously noted by Bidwell and Watson (1989, 26) that the sector east of Newcastle may have been begun before the decision to narrow the Wall was taken' (Bennett 1998, 25).

Hill also considered the question of the east end of the Wall (Hill 2001). He reviewed the relationship of the milecastles to the fort at Wallsend and concluded that 'it must be unlikely that, if Wallsend-Newcastle were an addition related to the fort decision, the milecastles would have been laid out with no regard to the new fort', noting that there was no attempt to divide equally the distance from Newcastle to Wallsend between the milecastles, and concluding that 'it is inescapable that the Wall was not designed to end at the bridge at Newcastle' (Hill 2001, 11; note also Bennett 1998, 30–32 on the spacing of the structures at the east end of the Wall).

Bidwell challenged Hill's use of the spacing of milecastles and turrets to determine the location of the original terminus of Hadrian's Wall observing that the broken terrain east of Newcastle 'would not lend itself to a regular spacing of milecastle and turrets' (Bidwell 2003, 18–9). He also stressed that 'west of the assumed original terminus at Newcastle only Broad Wall, and to the east only Narrow Wall, have been seen' (Bidwell 2003, 21). While the first part of this statement is correct, the second is open to challenge while it is worth stating that it has not been possible to measure the width of the Wall in Newcastle — the most easterly recorded measurement of the Broad Wall lies just short of T 7b (Denton), as Bidwell notes, that is, within the 15 Roman miles which we believe was the first stretch of the Wall to have been built (Hooley and Breeze 1968). The fact that MC 4 (Westgate Road) appears to have been built to Broad Wall specifications is neither here nor there as milecastles were built separately from the curtain wall (Harbottle *et al.* 1988). The nature of the foundations of the Wall play a part in this debate.

THE WIDTH OF THE STONE WALL

It has long been appreciated that Hadrian's Wall was originally planned to be 10 R ft wide (9 ft 8 in / 2.96 m), though widths vary from 10.3 to 12.2 R ft (10 ft / 3.05 m – 11 ft 10 in / 3.61 m) (Hill 2004, 22, 157–98). On the foundations was placed one or more courses below an offset. In 1932, the existence of two types of such footing courses were identified, Standard A, one course above the foundations, and Standard B with three or four courses of footings (Breeze 2006, 174).

During the building process, the Wall was narrowed in width to between 8 R ft (2.38 m) and 5 ft 7 in (1.65 m), with only one course of footings above the foundations (Hill 2004, 22). The lower measurement occurs in the wing wall to the east of T 26b (Brunton) with a similar width a little further to the east at Planetrees. Hill and Dobson pointed out that at Brunton the Narrow Wall relates to the Broad Wall below it in the same way as at T 29a and MC 48 and accordingly it would appear that this narrowest width is Hadrianic in date thereby making it difficult to distinguish Hadrianic from later work of similar width (Hill and Dobson 1992, 28). Graafstal emphasised the 'rigorous building specifications of Hadrian's Wall', arguing that the new standard width (the Narrow Wall) was 8 R ft (2.38 m) and, bearing in mind the

peculiarities of the wing wall at this turret, offered the possibility that it was 'a quite distinct, late gauge' or that the turret had been rebuilt (Graafstal 2012, 147, 174, n. 187).

The reasons for the original width of Hadrian's Wall has been the subject of considerable discussion, with several reasons offered. Richmond suggested that the 'building of the Broad Wall with clay and rubble as opposed to mortar and rubble entirely accounts for its curious proportions ... To make it thinner was to run risks with its stability' (Richmond 1950, 43). Hill firmly stated that 'any instability in a clay-bonded core would be greater in the broader wall, simply because with the broader wall there is a greater weight of unstable core against a given area of facing stone' (Hill 2006, 24). Usually, its width has been related to the possible existence of a wall-walk (Bidwell 2008: discussed below).

THE FOUNDATIONS OF THE STONE WALL

In 1930 it was stated that the Broad Wall was erected on foundations consisting of a thin layer of flags set in clay and laid directly on the ground surface or in a shallow trench while the Narrow Wall was placed on clay and cobble foundations laid in a deeper trench (Spain and Simpson 1930). Peter Hill and I brought all the evidence for the foundations together in 2013. We suggested that the situation was more complicated than the simplistic 1930 characterisation which was in any case sometimes based on unconfirmed evidence. The stone slabs underpinning the Broad Wall, for example, were in many cases assumed to cover the entire width of the curtain wall, but were often only visible at the edges of the superstructure, while the description of them as 'flagstones' was frequently erroneous. Also, importantly, in some places such stones underpin the Narrow Wall (Breeze and Hill 2013, 106).

The records such as we have indicated that from Wallsend to the river North Tyne the edges of the foundations were formed of flagstones or sandstone blocks (Breeze and Hill 2013, 111). In the sector from Newcastle to the river North Tyne the foundations were formed of rough flags, sandstone fragments or broken freestone, with some evidence that each legion had its own preferences. Between North Tyne and Irthing, the foundations were of whinstone or cobbles, except at the west end where kerbs of flagstones have been recorded. The re-examination of the Wall beside the Mining Institute in Newcastle in 2017 revealed the foundations were formed of sandstone blocks delineating stone rubble, on top of which the wall was offset (Alan Rushworth pers. comm.); such foundations have been recorded on both the Broad and the Narrow Wall.

East of Newcastle, the situation is now less homogenous. In some places flat stones were used in the core of the wall as well as to support the facing stones, while in two places foundations as wide as those in the Broad Wall have been recorded. In one case, the width was due to subsidence and this was presumed in the second case. However, even taking into account the fissure in the foundation at this point, the calculated width of the wall is 2.85 m, greater than the normal 2.44 m wide Narrow Foundations east of Newcastle and it is therefore possible that this is a length of Broad Wall (Breeze and Hill 2013, 109–10).

Breeze and Hill (2013, 110) argued that it would not be surprising if flagstones were sometimes used east of Newcastle nor that the foundations could vary in width as there is considerable variation in the nature and width of the foundations of the Wall throughout its length (Hill 2004, 156–97).

Many earlier writers stated that puddled clay was used in the construction of the Wall but this was not the case (Bidwell and Watson 1996, 19). Puddled clay, used for example to seal canals, is clay mixed with sand and kneaded.

THE STONEWORK

A series of publications by Peter Hill has aided our understanding of the act of building the Wall. In his first essay, in 1981, Hill challenged the descriptions of the Wall by archaeologists as being carefully built of ashlar, stating that the 'majority of the Curtain Wall is in reality a text-book example of the style of walling known as Coursed Rubble' (Hill 1981, 14). The implications of this for the speed of building the Wall are obvious.

Hill also noted that the builders were content to use whatever stone was easily available even though it was difficult to dress, as evidenced by the north gate of MC 48 (Poltross Burn). The conclusion was that 'there is no evidence that the army was prepared to go to the trouble of transporting better stone simply for the sake of appearance' (Hill 1991, 33-4). Chesters Bridge Abutment, although impressive to the visitor, was characterised as 'high quality block-in-course work, but only the Benwell Vallum crossing gateway can be described as ashlar' (Hill 1981, 14-6; this statement was made before the discovery of the masonry used in the repairs to the west gate of Birdoswald: Wilmott 1997, 103-6). Hill concluded that 'by the Army at least, the Wall was regarded not so much as a superb monument to the Emperor as a gigantic exercise in utility civil engineering'.

Hill was invited to examine and report on several of the gates along the Wall, at milecastles and forts. He observed that the upper courses of the gates at MCs 37 (Housesteads) and 42 (Cawfields) and certain gates at Chesters, Housesteads and Birdoswald were not as well dressed as the lower stones. From this he concluded that during their construction there was a decision to reduce the level of craftsmanship in the execution of these gates in order to complete the work as expeditiously as possible (Hill 1991, 35-6; 2004, 149-51).

THE CORE OF THE WALL

Modern discussion of the nature of the core of the Wall started with Eric Birley's 1960 paper (Birley 1960, 52-60). He reviewed the evidence of antiquarians and excavators and concluded that 'within the Wall-miles 7 to 12 ... the Broad Wall's core was mortared and not set in clay, except for a few inches upwards from the foundations'. Subsequent work between Newcastle and Rudchester, and in the central sector, has shown that the core was predominantly clay bonded with a soft brown mortar used to bed the facing stones (Bennett 1998, 27; Crow 1991b, 44; Hill 2004, 22). In his review of the evidence for the Broad Wall, Bennett noted that no firm conclusion is possible, 'except to note that the practice is variable' (Bennett 1983, 44). At Denton, the rubble in the core consisted mainly of large angular sandstone fragments, probably won from the ditch, laid horizontally, and set in clay (Bidwell and Watson 1996, 19; 32-3).

A WHITEWASHED WALL

Excavations at Denton in 1987-9 revealed evidence for the collapse of the south face of the Wall (Bidwell and Watson 1996, 23-6). The evidence was in the form of the plaster from the joints between the stones lying on the Roman ground surface. The general width of the joints

was about 25 mm (1 in), with some still retaining score marks to simulate jointing. The excavators were careful to state that it was not possible to decide whether flush pointing or rendering was represented by the surviving plaster, though they added that in 'either case, the Wall would have appeared as a gleaming white line cutting across the landscape'.

At the same time, Crow was examining the Wall in the vicinity of MC 39 (Castle Nick). At Peel Gap he stated that the discovery of 'a single chamfered block on the north side of the Wall with a distinct whitened outside provides evidence for the use of whitewash' (Crow 1991a, 59).

Hill has stated that some of the evidence for 'the "whitewash" may be the result of sloppiness of both mortar and workmanship' (Hill 1991, 38, n 3). He noted that the excavation of the north gate of MC 37 (Housesteads) produced no evidence of whitewash on the stones of the piers where they were protected when the gate was narrowed, and that although a window head at South Shields had mock voussoirs marked out in limewash, the rest of the stone was unpainted (Hill 1991, 34). Hill also observed that 'over pointing' was the normal method of pointing rubble work until recent years (Hill 2004, 34).

The jury is still out on the 'white Wall'. There is plentiful evidence for the use of rendering and the over pointing of joints and the simulation of jointing on Roman buildings, but we have yet to find secure evidence for this on Hadrian's Wall: one stone does not create a white Wall.

THE HEIGHT OF THE WALL

There are only two pieces of archaeological evidence for the probable height of the curtain wall and both have come under scrutiny recently. The steps at MC 48 (Poltross Burn) have generally been taken as indicating a height of 3.66 m (12 ft) on the inside and 4.27 m (14 ft) on the outside of the milecastle. Hill and Dobson (1992, 46–7) reviewed this evidence, noting that: only three full steps survive; the risers are not all the same height; and, as the slope of the ground results in the external height of the Wall being different from the interior, we have no way of knowing which was the point of reference for the builders. Accordingly, they argued, the external height of the Wall could vary between 4.27 and 4.5 m (14.4–15.2 R ft). [It may be noted that the changes to the width of the Wall are all on its southern side indicating that the army wished to maintain a uniform appearance on the north front; in that case, as Symonds has pointed out to me, the 'point of reference' for the builders ought to have been the north face and the external height 15 R ft.]

The question of whether there was a wall-walk (see below) has also opened a discussion over the purpose of the stairs: were they for soldiers ascending to a walk-way along the top of the curtain wall; or along the top of the milecastle wall; or to the tower presumed over the north gate, and would the answer have any effect on the nature of the stairs? There are no stairs recorded in any other Stone Wall milecastle, while the interpretation of a 'rectangular mass of turf' in the north-east corner of MC 50 TW (High House) as the base for a timber staircase is challengeable as it is but half the length of the staircase at MC 48 (Simpson and Richmond 1935, 222). As a result, a question mark hovers over this evidence from MC 48 for the height of the Wall as opposed to the milecastle wall.

The other indicator of the possible height of the curtain wall is the north gate of MC 37 (Housesteads). It has been calculated that the height to a putative wall top or tower floor is likely to have been between 4.32 and 4.47 m (Hill and Dobson 1992, 47–9). The conclusion was

that the height of the milecastle walls was 15 R ft (4.4 m), closely matching the evidence from MC 48. It must be emphasised that this discussion of height refers only to milecastles and may not be relevant to the curtain wall, though, as Symonds has pointed out to me, the consistency between curtain wall and milecastle wall widths suggests that the height of both would be the same.

Although published before 1968, it is worth noting Birley's suggestion that 'the narrower Wall on the crags was probably less high than the Wall elsewhere', each reduction in width of the Wall being matched by reductions in height (Birley 1960, 59). Crow excavated a section of wall on Highshields Crags which stood 3.3 m high to 'a level mortared top' (Crow 1991a, 59); this, as Symonds reminds me, is not far short of the 3.55 m (12 ft) which Bede gives for the height of the Wall.

THE TURF WALL

Perhaps the greatest surprise in the last 50 years in this sector has been the discovery that parts of the Turf Wall were erected on a base of cobbles (Austen 1994; Breeze 2006, 60). A raft of cobbles about 5.7m wide has now been recorded at three separate locations, at MC 53 (Banks Burn), T 70a (Beaumont) and MC 72 (Burgh-by-Sands). There are advantages to a stone base in that it lifts the lowest courses of turf off the ground and protects them from damage resulting from the freezing of their water content (pers. com. Karen Milek).

The evidence for the width of the Stone Wall which replaced the Turf Wall has also been considered (Breeze 2012, 72–4). It was noted in the 1930s that there was a difference between the eastern five Roman miles and the remainder to the west (Simpson and Richmond 1934, 133–7). The latter was named the Intermediate Wall because its width lay between the Narrow Stone Wall and the Broad Stone Wall, MC 53 (Banks Burn) being identified as the point where the Narrow Wall to the east changed to the Intermediate Wall to the west. This conclusion was based on only 30 records of the width of the foundations of the Stone Wall throughout the 30 Roman miles from the Irthing to Bowness-on-Solway and even fewer measurements for the wall sitting on top of those foundations (Breeze 2012, 73). While it is generally true that the foundations in the eastern four miles are narrower than those further west, this is not always the case, and throughout there is considerable variation. Further, excavation at Hare Hill has demonstrated that the width of the foundations varied by as much as 130 mm but the wall above was the same width throughout (Hodgson and McKelvey 2006).

The perceived change in the width of the stone foundations also related to the conclusion, established in the 1930s and based primarily on the pottery evidence, that the Turf Wall was rebuilt in two stages, the first, from the river Irthing westwards to MC 54 (Randylands) under Hadrian, and the remainder later in the second century (Simpson and Richmond 1934, 141–4). The date of rebuilding the eastern sector has been confirmed through re-examination of the pottery from the turrets and milecastle immediately to the west of Birdoswald, MC 54 and T 54a (Garthside), where Welsby concluded that the date of the replacement of the Turf Wall in stone 'did not occur until late in Hadrian's reign at the earliest' (Willis 2009, 347–9; Allason-Jones *et al.* 1984; Welsby 1985, 76; Mann 1990 argued that this stretch was built by the Sixth legion). MC 54 and T 54a were at the most westerly points along the Wall investigated in detail by Simpson and Richmond in their campaign of excavation; nothing is known of the turrets throughout the next three Roman miles apart from their locations (Breeze 2012, 74). We know

even less about the structures from here until the most westerly miles of the Wall. Conclusions about the building and rebuilding of the Turf Wall are based on too few observations.

A WALL-WALK?

On the 1969 Pilgrimage of Hadrian's Wall John Mann observed that it was possible that there was no walk-way along the top of Hadrian's Wall, noting that other frontiers were manifestly incapable of bearing one because they were too narrow (Dobson 1972, 187). This was met with incredulity in some quarters; one Oxford professor described it as nonsense. In his Horsley lecture Dobson presented his arguments against a 'fighting platform' (Dobson 1986, 5–6). They were focussed on the fighting techniques of the Roman army. On the Wall itself, he stated that 'the fact that the units were not brought up to the Wall in the first scheme is decisive against any notion of fighting from the wall top'. Nor did he consider that the situation had changed after the move of forts onto the Wall line. He emphasised that the cavalry in Wall forts would not have been used to 'man the wall top', thereby leaving a gap in their sector (Dobson 1986, 6). He concluded that, 'Collingwood's [1921] points regarding weaponry, bastions, manpower and Roman tactics remain unanswered'.

In 1992 Hill and Dobson reviewed the archaeological evidence for and against a wall-walk (Hill and Dobson 1992, 28–32). They acknowledged that the Broad Wall was wide enough to accommodate a patrol walk but queried why it was then reduced to 8 R ft (2.38 m), and even less, arguing that 10 R ft (2.96 m) could hardly have been a guess at an appropriate width for a wall-walk by the experienced Roman army. They pointed out that a northern parapet is normally assumed while a rear parapet would have been an advantage bearing in mind that the soldiers would have been about 15 ft (4.4 m) above the ground [the walk-way along the top of the wall in Tripolitania is encased, as illustrated in Bidwell 2008a, 131, fig. 2]. Even a northern parapet would have resulted in a 'very considerable addition to the labour'. They concluded that 'if patrols were part of the original scheme, [the reduction in the width of the Wall] implies a change of use'.

Hill and Dobson (1992, 28) accepted that the provision of bridges at Chesters and Willowford of the same width as the curtain wall pointed towards a wall-walk in the original scheme, but that it is likely to have lost 'some, perhaps most, of its importance' when forts were added to the Wall line.

The blocking of the recesses in turrets following their demolition has been taken as indication of a wall-walk, though Hill and Dobson suggested a couple of timber beams placed across the gap would have led to the same result and have been easier. More significantly, they suggested that the blocking may have been more to do with consolidating a wall built 80 years earlier, and in particular ensuring stability of the structure following the act of demolishing the turrets. The stones in the recess were not well founded and could subside leading to an uncomfortable walk-way if the top was not repaired. Simpson noted that the nature of the blocking at T 39a (Peel Crag) was such that it 'is difficult to visualize how the patrol walk was carried over' (Simpson 1976, 101). Hill and Dobson also noted that the elimination of the turrets would have led to a reduction both in places of shelter along the Wall and points of access to the Wall top (Hill and Dobson 1992, 29). At Peel Gap tower, Crow recorded a platform, formed after the blocking of the tower door; he suggested that this was 'probably for steps or a ladder up to the wall-walk (Crow 1991a, 53–5). If this was the case, it is surprising that no other such platforms have been recorded (Hill and Dobson 1992, 29).

Bidwell offered the possibility of hitherto unlocated stairs, 'perhaps of wood' (Bidwell 2008a, 141).

In their joint paper, Hill and Dobson concluded that 'there was a strong suggestion that a wall-walk was provided originally; it is far from certain that an effective wall-walk could have been preserved when the wall was narrowed to 8' or even 6' as early as the time of Hadrian' (Hill and Dobson 1991, 33).

Paul Bidwell devoted his paper at the South Shields conference, 'Understanding Hadrian's Wall', to the issue of a wall-walk, concentrating on the structural and archaeological evidence but reaching different conclusions from Hill and Dobson (Bidwell 2008a). On the narrowness of the wall, Bidwell pointed out that all other Roman frontier walls were significantly narrower than the Broad Wall and that there were wall-walks narrower than the Narrow Wall at forts and cities in the Roman world; this had been countered by Dobson (1986, 6) who argued that the comparisons are not valid. Bidwell stated that the fact that the width of the original bridges at Chesters and Willowford was the same as the Broad Wall indicates that the walk-way across the rivers was continued in a wall-walk and he averred that the blocking of the recesses in the thickness of the Wall when the turrets were demolished has been taken to indicate a necessity to carry the wall-walk across the site of the demolished turret. He also argued that the 'thickness of the Wall certainly suggests that it would not have needed any reinforcement when the turrets were demolished', while the act of bonding the blocking wall into the south face of the Wall 'might have served to weaken rather than strengthen the fabric' (Bidwell 2008, 133). He stated that the chamfered stones fallen from the north face of the Wall in various places indicated the existence of a string course and 'parallels suggest that they were an architectural convention which was always employed when the top of a defensive wall was crenellated'. This had already been acknowledged by Hill and Dobson who had suggested that the 'existence of the string course does imply some sort of superstructure; neither the retaining wall for a sloping top nor a parapet wall would be out of place. The latter might be the more likely superstructure to merit a string course, but as this suggests a patrolled walk one would expect a ... rear parapet ... which ought to call for a string course at the rear', but no such stones have been found (Hill and Dobson 1992, 29–30). Bidwell considered stones which could have been from merlons, acknowledging that they could have been carried from forts.

Bidwell quoted Richard Bellhouse who had argued that as the Turf Wall was battered, unlike the replacement Stone Wall which was vertical, the north face of the Stone Wall was set back from the north face of the turrets so that access could be had from an upper door in the turret onto a wall-walk. Unfortunately, some of Bellhouse's figures were wrong and there are more cases where the north face of the Stone Wall is not set back to an appreciable degree than when it is (Breeze 2009, 100). Graafstal, however, pointed out that the eastern wing wall at T 26b (Brunton) widens as it meets the turret, which may indicate the existence of a doorway from the turret onto the Wall-top (Graafstal 2012, 174, n. 186).

Weaponry which could have been used by soldiers using the wall-walk as a fighting platform as well as the shape of the ditch in relation to the top of the Wall was also considered. Bidwell concluded that 'every aspect of the design of Hadrian's Wall, including its decoration and monumentality as well as its purely practical features, will reflect its purpose, and every one of those aspects is entirely consistent with the existence of a Wall-walk and a crenellated parapet' (Bidwell 2008, 142). However, as Bidwell's language implies, proof is not yet with us, and indeed there are some other points which may bear on the question.

Symonds and Breeze (2016) have argued that in the final stages of Wall building, some turrets (39a, 44b and 45b) were moved out of their measured positions to take advantage of the landscape. Graeme Stobbs (pers. comm.) subsequently pointed out that this implies that there was no wall-walk because if there had been one there would have been no need to move turrets to positions of improved observation.

The significance of weapons for this discussion remains obscure. Collingwood (1921) argued that Roman soldiers were not equipped for static defence, each being provided with only two throwing spears. Bidwell challenged that statement, pointing to the examples of throwing stones and arrowheads at forts. However, the soldiers at the forts would have been equipped to take care of themselves (as Brigadier Richard Holmes once pointed out to me), and it is to the smaller structures along the Wall that we must look for defensive weapons. These have been catalogued by Allason-Jones (1988). Eight turrets have yielded spearheads, three throwing stones (five from T 34a), one an arrowhead and a catapult bolt from Peel Gap tower, where also were found two piles of 'small rounded pebbles', possibly crude slingshot. This is not a large haul from the 74 turrets which have been examined and the 27 which have produced artefacts. From four excavated milecastles come spearheads, the chapes of sword scabbards from three, arrowheads, an artillery bolthead, a dagger, a clay sling bullet from one each. Allason-Jones concluded that weapons were limited in number, 'which may be of relevance in the argument as to whether or not Hadrian's Wall provided a fighting platform' and in another twist noted that some of the weapons at MC 35 (Sewingshields) were broken (Allason-Jones 1988, 218; 1984, 74). Our problem is compounded by the fact that we might expect that all soldiers would carry some weapons irrespective of any specific duties.

THE DITCH AND COUNTERSCARP BANK

The ditch and its attendant upcast mound has received long-deserved attention from Humphrey Welfare (2004). He examined the mound where it remains extant. He acknowledged that there are many places where, in relatively level ground, the mound retains its classic form, 10–15 m wide, smooth in profile and tapering to the north, also noting that in many places this work was unfinished. Welfare recorded other profiles. Several variations in the form of the ditch and bank occur in the central sector. The developed form is a 'counterscarp bank', a narrow bank on the north lip of the ditch. Sometimes, however, the line of the ditch continues beyond its end only in the form of its southern slope or as the outer side of the bank. In other places, only the top soil was removed from the line of the ditch while in one location there was no ditch at all. Welfare concluded that 'in the drive to complete the barrier with all speed this is not altogether surprising; the fact that the ideal was never returned to can only mean that the concept and the practice of the frontier had itself undergone modification' (Welfare 2004, 17). His observations also led him to query whether the ditch was 'an essential component in the defence of the Wall' (Welfare 2004, 21). The variations he recorded offer some challenge to Bidwell's view of the lines of sight from a putative wall-walk into the ditch, as Bidwell himself noted (Bidwell 2008a, 140–1).

In their report on the excavations at Denton, Bidwell and Watson observed that the 'volume of material in the Wall is less than that removed in forming the Wall ditch ... The thesis proposed here is that the Broad Wall at Denton represents nothing more than the re-assembled contents of the Wall ditch' (Bidwell and Watson 1996, 33).

Wilmott (2006b) reviewed the evidence for the 'ankle breaker' at the bottom of the Wall ditch and concluded that 'the idealised V-Shaped profile with a square basal channel does not exist anywhere'. Such a feature has, however, been recorded at Melbourne Street in Newcastle and at Walby in Wall mile 62 (Platell 2012, 193; *Britannia* 7 (1976) 31). The investigations at Melbourne Street also led to the suggestion that, as at Denton, 'in this location, the excavation of the ditch predated construction of the Wall' (Platell 2012, 195).

In 2014 I suggested that the small mound which can still be seen in some locations on the north side of the Wall ditch may have been a marking-out bank for the earthwork (Breeze 2014c).

THE BERM

In 1989 pits were discovered on the berm of the Antonine Wall in Falkirk and two years later at Wallsend on Hadrian's Wall (Bidwell 2005, 52). Since then more rows of regular pits have been found on the berm as far west as Throckley (about T 11b), but not in any excavations further west. Those examined at Byker consisted of three rows, the middle being set at right-angles to the outer two, with each containing the impressions of two uprights each from 120 mm to 200 mm in diameter (McKelvey and Bidwell 2005, 15). A low mound ran along the southern edge of the ditch. The pits were later recut and, although the evidence was not so clear, it would appear that the uprights were replaced. Bidwell compared these features to the *cippi* recorded by Caesar at the siege of Alesia: trunks or stout branches of trees secured in pits with the branches cut and sharpened (Bidwell 2005, 53–5).

In 2001 and 2002 the cutting of a trench along the berm at Throckley led to further discoveries. At about the measured location of T 11b (Throckley), which remains undiscovered in spite of three attempts to locate it, a hollow, 26 m long, and with a sharp southern slope, lay to the north (Frain *et al.* 2005, 33–6). It was suggested that the hollow was the Wall ditch, later filled in; it contained Roman pottery extending into the third century. A few metres to the east, two pits in the middle row lay at an angle to the line of the Wall, aligned south-west/north-east. It was suggested that these reflected a narrowing of the berm at the turret.

In his wider discussion of the significance of these observations at Throckley, Bidwell drew attention to the narrowing of the berm at T 26b (Brunton) and at nine turrets on the Turf Wall as well as the tower on Pike Hill (Bidwell 2005, 66–9). He concluded that 'narrow berms were perhaps originally to be found at all turrets, but at some they might have been widened at a later date. The obvious reason for the re-digging of the Wall-ditch at these points would be the abandonment and demolition of turrets in the late second or early third centuries' (Bidwell 2005, 69). His conclusion was that the berm was narrowed at turrets in order to allow the soldiers based there to command the ditch; 'this arrangement would also offer the best lines of fire for missiles' (Bidwell 2005, 70).

MILECASTLES

Our knowledge of milecastles has been extended by the complete excavation of MC 35 (Sewingshields) and of MC 39 (Castle Nick), limited investigations at several sites as part of an English Heritage conservation programme, and the discovery of a milecastle in Newcastle, MC 4 (Westgate Road), while geophysical survey at MC 73 (Dykesfield) revealed several external enclosures (Haigh and Savage 1984; Wilmott 2009, 137–202; Harbottle *et al.* 1988;

Biggins *et al.* 2004; MC 39 is, as yet, unpublished). The small part of MC 4 examined at its south-west corner revealed foundations 2.90 m (9 R ft 8 in) wide.

In 1911 J. P. Gibson and F. G. Simpson brought together the information relating to the gates of milecastles, noting three different types (Gibson and Simpson 1911, 407–8). Twenty years later Simpson added another characteristic to milecastle types, whether the axis was long (that is north-south) or short (Simpson 1931, 308–14). He was able to demonstrate that short axis milecastles had one type of gate (Type I), while long axis milecastles had either of the other two types. He also identified a fourth type which was later recognised as a variant of his Type II. Five years later, the different types of milecastles were allocated to legions on the basis of three inscriptions from MCs 37, 38 and 42 (legion II) and one found near MC 47 (legion XX) (Simpson *et al.* 1936, 272).

Hooley and Breeze drew attention to certain discrepancies about MC 47 (Chapel House). In our view, the excavators had mis-attributed the gate type. We suggested that this was a hybrid, started by one legion and completed by another (Hooley and Breeze 1968, 100). This was really an act of cowardice as we were unwilling to argue that the excavators were wrong in their account of the excavation. That proposition came in 1976 in the first edition of *Hadrian's Wall* (Breeze and Dobson 1976, 59–60). It was now clear that MC 48 (Poltross Burn) was the same type as MC 47 and therefore the attribution of milecastles and turrets to legions VI and XX was reversed.

In 1931 Simpson had noted that milecastles might have broad walls (corresponding to the first plan for the Wall) or narrow walls (usually assumed to date to after the decision to add forts to the Wall and narrow the superstructure). Ray Hunneysett explored this further in 1980. After drawing all known milecastles to the same scale, he noted that different setting out lines had been used by different legions (Hunneysett 1980). This was only noticeable when the original broad walls planned for milecastles were reduced in width. At that stage, the external or the internal setting out line was used, two legions using the internal line and the third the external. This provided a further form of identification for milecastle types.

Symonds in 2005 turned his attention to milecastles. He observed that MCs 10 (Walbottle Dene) and 48 (Poltross Burn) had broad walls; to these we can probably add 27 (Low Brunton) and 47 (Chapel House) (Symonds 2005, 72). The four milecastles from 23 to 26 all have broad east and west side walls, MC 9 (Chapel House) broad side walls and a narrower south wall. Symonds noted that MCs 9 and 10 lay either side of the Dewley Burn; 23 to 27 between Portgate and the North Tyne; while MCs 47 and 48 seal 'the topographical bottleneck between the Irthing and Tipalt Burn', all areas of strategic concern (for further discussion of priority milecastles see Hunneysett 2017).

The early construction of the north walls of milecastles has also been noted, and can be seen today at MC 42 (Cawfields). This suggests a wish to have a chain of towers in use at an early stage in the building process, and receives support from the early erection of T 27a (Chesters) and T 36b (Housesteads) (Breeze 2006, 197, 234). The excavation of MC 35 (Sewing-shields) revealed a unique situation, a milecastle without a north gate, for the foundations and north wall continued across the site of the gate (Haigh and Savage 1984, 36). However, the excavators went on to note that 'it is not possible to be certain that [a gate] had never been planned, since it seems likely that the north wall had been rebuilt, or at least extensively repaired at some time'. The south wall of the milecastle is unusually broad and, if there was no original tower over the north gate, this may imply the existence of a tower over the south gate which would then serve to maintain the chain of towers (Symonds and Breeze 2016, 3).

In comparing the plans of milecastles gates, in particular on the Stone Wall, Daniels noted that the plans of the north and south gates were identical and observed that 'unless the south gates also had a tower it is difficult to see any purpose for this similarity of plan' (Daniels 1978, 24).

Symonds emphasised the unusual nature of MCs 47 and 48. Both were larger than other Stone Wall milecastles; both contained, uniquely, two barrack-blocks; while 48 yielded 'luxury' features including stone steps, barracks with verandas, window glass and tiles. He concluded that these milecastles came 'early in the building sequence, before such provisions were considered to be an unnecessarily costly extravagance' (Symonds 2005, 74). Milecastles containing one barrack-block became the norm; their narrow side walls indicate construction after the decision to add forts to the Wall and to narrow the width of the curtain (see Graafstal 2012, 144 for a table detailing the widths of milecastle walls).

Symonds also noted a 'middle gauge' used at some milecastles. These include MC 43 below Great Chesters, a fort bonded into the Narrow Wall. The use of this gauge may reflect a stage in work between the early Broad Wall milecastles and the later narrow walls. Perhaps most importantly Symonds observed the prioritisation of milecastles at particular weak points. He isolated four stages in milecastle building: early Broad Wall structures; other milecastles with Broad north walls but Narrow side walls; middle gauge; narrow.

One of the long-term problems in understanding how milecastle worked has been the lack of causeways over the ditch in front of their north gates. Metalled surfaces leading towards the ditch from the north gates of MC 50 TW (High House), MC 50 SW (High House) and MC 54 (Randylands) had been recorded, but these were regarded as special cases (Breeze 2006, 310–1, 315, 324–5. In 2000 Welfare reported upon his examination of the Wall ditch in front of milecastles (Welfare 2000). He considered the evidence, both direct and circumstantial, and concluded that there was some evidence for causeways in 15 out of the 22 instances where the physical remains were sufficiently well preserved to determine the question one way or the other. He observed that the re-occupation of Hadrian's Wall following the return from the Antonine Wall would be a likely occasion for the removal of the causeways (Welfare 2000, 18).

TURRETS

T 33b (Coesike) was excavated and provided significant information about the type of turret and its history; the wall blocking the recess yielded an inscription of the Sixth Legion, dated by the excavators to the original construction, and by R. P. Wright to Antonine repairs (Miket and Maxfield 1970, 158; *RIB* 3320). T 10a (Throckley East), examined in 1980, was badly damaged (Bennett 1983).

Charlesworth undertook a review of turrets, including the evidence for the nature they might have taken, and noting the lack of roofing materials and window glass (Charlesworth 1977, 14–5). There has been other discussion of the form turrets might have taken, with three different reconstructions offered on paper with no clear choice between them possible (Hill and Dobson 1992, 38–43; Dobson 1986, 14; Hill 1997). Hill noted the unusual nature of Ts 48a and b at Willowford, linking them to the early erection of MCs 47 and 48 to propose them as 'possibly early design turrets' (Hill 2006, 29, 137).

Woolliscroft noted the vital role of turrets in maintaining watch over the frontier, but otherwise did not subject their locations to the same level of scrutiny as the milecastles (Woolliscroft 1989, 9–15). Foglia (2014), however, considered turrets in detail. He reviewed

the evidence for their structure and appearance as well as their location in the landscape, supporting his investigation by GIS analysis. He noted that the interval of 500 m between structures along the Wall was 'very close to the 450 m that is the maximum distance where military uniforms, and therefore friend / foe or civilian / militant, can be recognised' and concluded that their 'rigid spacing was probably designed to maximise the "resolution" of the observation screen' (Foglia 2014, 37; 43). It might be regarded that this damages Collingwood's argument that a walk was provided along the top of the Wall for sentries (Collingwood 1921).

The relevance of the length of the wing walls at turrets to the building sequence has again been discussed. Most turrets were provided with wing walls to each side ready to bond with the Broad Wall when its builders reached the site. Only three turrets, 39a (Peel Crag), 44b (Mucklebank) and 45b (Walltown West), are known not to have had wing walls; they lie in areas where there is no Broad Foundation (Symonds and Breeze 2016, 3). Both long and short wing walls have been recorded and Stevens suggested that those structures with short wing walls, all in the central sector as might be expected, were late in the building process, and this was supported by Hill (JRS 38 (1948) 84; Hill 2004, 144). Graafstal has stated that the considerable number of turrets with wing walls 'is a strong pointer to the advanced completion of turrets' and has argued that the height of the western wing wall at T 29a (Blackcarts) suggests that 'the turrets were completed before dislocation' (Graafstal 2012, 130).

THE LOCATION OF MILECASTLES AND TURRETS

In 1989 David Woolliscroft opened his programme of examining the location of structures along the frontiers of Europe with a view to helping our understanding of how they worked (Woolliscroft 1989). He examined the 28-mile-long stretch from MC 30 to MC 58. He was able to demonstrate that the Wall was not simply planned elsewhere and implemented in disregard of the circumstances on the ground. None of the 17 milecastles in his area of study for which figures are available was the 'correct' distance from its neighbour, but the average milecastle spacing is only inaccurate to 0.000072%. After considering a variety of possibilities for milecastles not being in their measured positions, Woolliscroft concluded that the 'deviation in milecastle spacing [was] consistent with an attempt to fit the Wall with a comprehensive signalling system orientated to the South' (Woolliscroft 1989, 9). Milecastles were moved out of their measured position in order to maintain contact with the troops on the Stanegate: 'every Wall installation [in the research area] can see a Stanegate site and each Stanegate installation overlooks a fairly clearly defined length of Wall' (Woolliscroft 1989, 15). Woolliscroft also noted that the sites of the new forts were well chosen to allow signalling now to take place along the Wall (Woolliscroft 1989, 15).

GATEWAYS

Dorothy Charlesworth undertook a limited excavation at the Portgate on Dere Street in 1966, locating four stones of the north face of the structure which lay 10–12 ft (3–3.6 m) north of the north face of Hadrian's Wall (Charlesworth 1967, 208). Charlesworth stated that the total length of the north face is 9 ft 5 ins (2.87 m) but she appears to have made a slip as she only examined the wall to the west of the gateway. Allowing for the same length to the east of the gate, and the width of the gate itself, the total width of the north wall of the Portgate is likely

to have been 7.74 m (Breeze 2015b, 236). Horsley (1732, 121) described the structure as square, Charlesworth as a projecting gateway. The word *Fragment* appears on two mid nineteenth century watercolours of this cross-roads. Assuming that the gate structure was square, it is not impossible that they refer to a stone(s) at its south-west corner (Breeze 2015b, 236).

BRIDGES

The bridges at Chesters and Willowford were examined and reported upon by Bidwell and Holbrook (Bidwell and Holbrook 1989). In both cases, the history of the bridge was traced, but for the purposes of this review, we may note that the piers of the original bridge were 2.8–3 m (9 ft 2 in–9 ft 10 in) wide, that is the same width as the Broad Wall, and accordingly the excavators concluded that the bridge carried a wall-walk across the river.

INSCRIPTIONS

The discovery of an inscription of the Sixth Legion at T 33b (Coesike), together with doubts about the statements of the excavators about the type of MC 47 (Chapel House), noted above, led to a review of the allocation of structure and wall types to the three legions. Further, Peter Hill pointed out that the inscriptions from the milecastles had all been placed over the gates and therefore may not have related to the legion which started building the structures (Hill 1991, 36–8). These two points led to a more cautious approach to the allocation of legionary lengths in the fourth edition of Breeze and Dobson (2000, 73). The Second Legion remained the same (short axis milecastles, gates with two pairs of responds (Type 1), turrets with broad walls and east doors, Standard A curtain, and internal setting-out lines), but the other two allocations were reversed. It was now suggested that the Twentieth Legion (represented by an inscription at MC 47) built milecastles with long axes and gates with two pairs of responds (Type 3), turrets with narrow walls and west doors, Standard B curtain, and external setting-out lines, while the Sixth Legion (represented by the inscription at T 33b, though note that Bennett 2002, 828 stated that the inscription need not come from the turret) built milecastles with long axes and gates with one pair of responds (Types 4 and 2), turrets with narrow walls and east doors, Standard A curtain, and internal setting-out lines. Graafstal has pointed to the unusual terminology of the inscription from MC 47, which does not bear the name of a governor, and suggested that it dates to before the governorship of Platorius Nepos rather than after, as has been usually supposed (Graafstal 2012, 150). Mann pointed out that the fragmentary timber inscription found at MC 50TW (High House) cannot be restored to refer to the Second Legion as it was a long-axis milecastle which was not the type built by that legion (Mann 1990b, 292).

Graafstal also has considered the implications of the Jarrow inscription (Graafstal 2012, 133–6). He has argued that its phrasing ‘perfectly fits the awkward situation Hadrian found himself in after he had taken imperial power’ and could refer to the war in Britain at the beginning of his reign while also hinting that Hadrian was acknowledging that he was changing the trajectory of Roman expansion by building frontiers.

Keppie has challenged the view that the use of the genitive case on building stones from the Wall recording ‘the work of the Emperor Hadrian’ implies that Hadrian himself designed the Wall (Keppie 2017). Drawing on ‘epigraphic texts from Rome and its provinces, [he] argues that the relevant inscriptions cannot bear this meaning’.

It is usually assumed that centurial stones were only placed on the south side of the wall. Centurial stones have, however, been found on the north face at Blackcarts, T 33b (Coesike), on Walltown Crags (one stone was upside down in the first course above the offset, while a further two stones were found fallen from the north face) and in the sector between MC 49 (Harrow's Scar) and Birdoswald two centurial stones were recorded fallen from the north face (RIB 3306, 3307, 3308, 3321, 3388, 3383, 3384, 3430 and 3433). Charles Anderson stated that the farmer at Sewingshields had informed him that three or four centurial stones were buried north of the wall beside the farm, but these were not located (Leach and Whitworth 2011, 82). The location of these stones is taken as evidence for the rebuilding of the Wall, not least as several are found in the lowest courses of the wall, as it has hitherto been assumed that the centurial stones were only placed on the south side of the wall, but Peter Hill has reminded me that this is an assumption and the discovery of centurial stones on the north face cannot therefore automatically be taken as evidence for rebuilding.

Fulford discussed the *civitas* stones on the Wall and stated that there 'is ... no reason not to propose that all the named *civitates* are associated with the initial construction of the stone Wall and the replacement of the Turf Wall in stone, and that they belong to the second century' (Fulford 2006, 68). In my study of the stones, I noted that, where known, they were all rectangular blocks unlike the centurial stones which were simple building stones with tails for bonding and therefore unlikely to be Hadrianic in date (Breeze 2012). In addition, the stones have been found on the Hadrianic Stone Wall and on the 'Intermediate', post-Hadrianic, section of the Turf Wall. My conclusion was that the inscriptions are unlikely to have been Hadrianic in date and perhaps dated to the reign of the Emperor Septimius Severus.

MEMORIALS

Graafstal argued that the unusual wording on the two inscriptions found at Jarrow relates to the difficulties Hadrian faced at the beginning of his reign, as noted (Graafstal 2006, 133–6). Bidwell has suggested that the inscriptions which, in some form, commemorate the building of the Wall, may have formed part of a monument which stood on a mole at the end of the Branch Wall running down to the river at Wallsend (Bidwell 2015, 9–13). Breeze brought together the evidence for possible commemorative monuments along the Wall at Rose Hill, Gilsland, and Carlisle as well as Jarrow (Breeze 2014b; cf Graafstal 2012, 151).

THE CUMBRIAN COAST

Our knowledge of the milefortlets and towers along the Cumbrian coast is largely due to the valiant efforts of Richard Bellhouse for the 35 years from 1954 (Bellhouse 1989 and Breeze 2004 which form the basis of the following account). Building on the limited earlier work, Bellhouse established the site of ten milefortlets and ten towers and sought at least ten more sites in vain. Subsequently two milefortlets were separately excavated (Potter 1977; Turnbull 1998). The system is now known to extend from Bowness-on-Solway to a little south of Maryport with the spacing between the structures varying from 540 to 546 yards (494 to 499 m). The towers are all of stone while the walls of the milefortlets were of turf enclosing timber buildings, the same materials as the Turf Wall, and about the same size, though without the linking barrier. Possible merlon caps have been found at two towers, Ts 16a and b. Two

milefortlets were larger than the others, MF 5 (Cardurnock) and MF 9 (Skinburness) on each side of the Moricambe Estuary. The former was at first larger than the latter but later reduced to be the same size. On the basis of this Ian Caruana has suggested that the installations might have been laid out in two stages, Bowness to Cardurnock, and later from Skinburness southwards (cited in Breeze 2004, 80).

Barri Jones identified on aerial photographs parallel ditches flanking the structures from just north of MF 1 (Biglands) intermittently to Cardurnock and further south at Sillioth (Jones 1976; 1982). A final report on his excavations has not been published but David Woolliscroft has confirmed that one so-called palisade slot is in fact a deep field drain (Woolliscroft and Jones 2004, 187–90; the discussion between Jones and Bellhouse about the ditches is chronicled in Breeze 2013, 2). Dubiety also surrounds Jones' identification of two towers, his 2b (Campfield) and 4b (Cardurnock) (Jones 2004, 174–83; Caruana 2004, 185).

Coins, pottery and an inscription indicate the foundation of the forts at Beckfoot and Moresby under Hadrian and probably earlier in the case of Maryport (Shotter 1997, 136; Breeze 2006, 387, 398, 412). At Maryport, excavations south-west of the visible fort have revealed features which may be part of a predecessor to the visible fort (Flynn 2006a and b). Woolliscroft has pointed to the difference in location between the two northerly forts, Beckfoot and Maryport, which sit in places with wide views, and the two southerly stations, Burrow Walls and Moresby which sit lower in the landscape with restricted outlooks (Woolliscroft 1994, 57–60). He suggested that the latter two are not forts in the Cumbrian coast system, a proposal that fits well with the ending of the smaller installations just south of Maryport, at least as currently perceived.

In passing, we may note that no tower has yielded any pottery later than Hadrian's reign though structural changes at MFs 1 (Biglands), 5 (Cardurnock), 12 (Bitterlees), 17 (Dubmill Point) and 20 (Low Mire) suggest re-occupation on the return from the Antonine Wall about 160, though of limited duration. The fact that most of the complex would not be re-occupied on the return from the Antonine Wall raises questions about the purpose of the system.

Symonds reviewed the smaller structures on the coast (Symonds 2017). He suggested that the lack of the linear elements of the Wall along the coast may be consistent with the lack of a ditch where there are steep crags in the central sector. He noted that the structures were not as rigidly spaced as Bellhouse argued (Symonds 2017, 210). Symonds also drew attention to the unusual nature of MF 5 (Cardurnock) which 'displays numerous features that are hard to reconcile with "standard" milefortlet, or even fortlet, design' (Symonds 2017, 208).

THE START POINT OF BUILDING

Breeze and Hill (2001) suggested that the building of the Wall started at the point where the legionaries arrived at the end of their march from their bases to the south. One obvious point was where Dere Street crossed the Wall at Portgate, near MC 22, the western end of what is generally accepted as the first stretch of Stone Wall to have been built. On the basis of this, they suggested that the building of the Turf Wall commenced at Carlisle. It may also be noted that Symonds' identification of MCs 47 and 48 as the earliest structures to be built, to which Hill added Ts 48a and b at Willowford, led to Graafstal noting the proximity of this stretch to the Stanegate (and, we may add, to the point where the Maiden Way terminated at Carvoran), suggesting that this sector may have been a show-piece for Hadrian when he visited the Wall in 122 (Symonds 2005, 73–4; Hill 2006, 137; Graafstal 2012, 150–1). Graafstal also elaborated

on Symonds' suggestion that the purpose of the early work in the Irthing area was to block access by suggesting a similar arrangement in the valley of the North Tyne (Graafstal 2012, 146–9). His conclusion was that while the basic building project followed a programme of work allotments, this was overlain by a concern for the terrain resulting in 'individual structures and stretches to be prioritised according to their topographical sensitivity' (Graafstal 2012, 148).

THE FORT DECISION

It has long been appreciated that the first plan for the Wall (and probably the Cumbrian coast) was not completed before it was overtaken by an event which disrupted work; this was the decision to add forts — and the Vallum — to the Wall. The effects of the decision can be seen in the points of reduction from Broad Wall to Narrow Wall. Although the evidence is circumstantial, the fort decision is the most obvious reason for this change.

Hill has provided a vivid image of the position at this point: 'the widespread, though not uniform, occurrence of Broad Wall in all legionary lengths between Newcastle and the River Irthing indicates that small gangs were at work simultaneously at very many points' (Hill 2006, 146). Work on the milecastles, turrets and curtain wall stopped, leaving structures part completed. In most cases, the breaks in the curtain resulted in vertical points of reduction, as at Planetrees, but even in the section of the Wall which it is argued was started first, that from about 46a/b to the river Irthing, little work had been undertaken on the curtain as we can see from the horizontal points of reduction still visible at Willowford (Hill 2004, 21). It is clear, as we shall see, that the pause in the building programme was of some duration.

FORTS

Barri Jones undertook aerial reconnaissance in the Burgh-by-Sands area, recording two new military installations to the south of the Wall. He suggested that one was Hadrianic in date and therefore concluded that the Wall fort at Burgh was later (Breeze and Woolliscroft 2009, 59, 71–4). This seems unlikely as only the earlier Hadrianic forts lay astride the Wall while there is Hadrianic pottery from locations close to the Wall fort at Burgh (Breeze and Woolliscroft 2009, 77). There seems to be no reason to doubt that the fort astride the Wall at Burgh is Hadrianic in date.

Birdoswald has seen two major campaigns of excavation under the direction of Tony Wilmott (Wilmott 2000; 2009). He was able to trace the building sequence though he was hampered by difficulties surrounding the interpretation of the early 1930s excavations. Smaller scale excavations have taken place at Bowness-on-Solway which have confirmed the size of the fort (Austen 2009).

The discovery of an inscribed altar of a cavalry unit at Chesters provided valuable evidence for a unit at a fort in the Hadrianic period (Breeze and Austen 1979). Archaeology has provided other evidence in the form of the complete excavation of the fort at Wallsend and the identification of cavalry barracks at that site and South Shields (Hodgson 2003; Hodgson and Bidwell 2004; Rushworth and Croom 2016). Fort types on the Wall were reviewed by Breeze and Dobson (1970).

In the last volume of this journal I discussed the different reasons offered for the location of the forts on the Wall (Breeze 2017). Swinbank and Spaul (1951) had argued that the primary

motivation was regular spacing of $7\frac{1}{3}$ or $7\frac{2}{3}$ Roman miles, that is about half the distance marched by a Roman army in a day. Richmond, followed by Daniels, however, preferred the location to be based on defensive concerns (Richmond 1947; 1966; Daniels 1978). I supported Swinbank and Spaul's argument for the site of the forts to be based on spacing, with the final location tweaked to relate the fort best to the landscape. I suggested, prompted by Symonds, that the placing of forts for movement north could be as valid as the Richmond/Daniels view that they were located primarily with defence in mind. Some commentators have suggested that forts were located where there was a good supply of water, but several are not so positioned.

Crow averred that the intention had always been to place forts on the Wall line but that the action had been delayed, though without offering any substantive support for this suggestion (Crow 2004, 18). Hodgson has offered an explanation, that urgency 'explains the absence of forts at the outset', the building programme being hindered by shortage of manpower and presumably by active threats (Hodgson 2017, 67). However, the fact that no gaps were left for these forts and that stretches of wall, milecastles and turrets had to be demolished and the ditch infilled might be thought to mitigate against the suggestion.

The date of the building of Great Chesters has been challenged by Bennett who argued that we should not trust the appearance on the inscription of *pater patriae*, accepted by Hadrian in 128, as the title sometimes appears on earlier inscriptions and coins (Bennett 1984). Uniquely on Hadrian's Wall, the fort has four ditches, at least to the west of the fort. Also uniquely, the Broad Foundation here was not used by the builders of the Narrow Wall who erected their superstructure immediately to the south of the existing foundation. As a result, the northern ends of the western ditches respect the Broad Foundation but not the Narrow Wall which crosses their butt-ends. Charlesworth (1971) examined the west ditch of Housesteads discovering that it cut through the Broad Foundation and ended at the Narrow Wall.

The publication of Simpson's 1925 excavation of the Great Chesters ditches included the information that the two outer ditches were the deepest and therefore likely to have been the widest, while the berm between the two inner and two outer ditches was the widest of the three spines, thereby providing some support for the possibility that the outer ditches were the earliest to have been excavated with the inner two dug when it had been decided to construct a smaller fort at the site (Heywood and Breeze 2010, 5–7). The fact that the fort does not sit astride the Wall in spite of the topography is a further indication of a late date for its construction. Such a date for the building of this fort would fit with the prior existence — and apparent occupation — of MC 43 on the site and the way the builders of the Narrow Wall ignored the Broad Foundation suggesting a significant gap between the two activities (*JRS* 30 (1940) 161–4). A further possibility is that it had been intended that Great Chesters would replace Carvoran, which does not conform to the spacing 'rules', but was retained until the time that Great Chesters was built to plug the gap in an as-yet-unbuilt sector of Wall (Symonds and Breeze 2016, 10). When Great Chesters came to be constructed, however, it was decided to have two small forts rather than one large one.

The date of the foundation of Carrawburgh has long been problematic. It lies over the Vallum but it is not clear whether the fragmentary building inscription from the site refers to Julius Severus, governor in the early 130s, or his nephew Julius Verus 20 years later (*RIB* 1550). Sherds of a jar of Hadrianic date found in the clay backing of the strong room in the fort supports the earlier date (Breeze 1972, 127).

THE VALLUM

The archaeological excavations of Brenda Heywood (née Swinbank) on the Vallum all took place before 1968, but were not published until the 2000s (Heywood 2009; Heywood and Breeze 2008; 2010). At MCs 23 (Stanley Plantation), 30 (Limestone Corner) and 42 (Cawfields) she found no evidence for an original causeway across the Vallum ditch south of the milecastle, though only at the last site was the evidence conclusive (Heywood and Breeze 2008). Nor was there an original gap in the south mound of the Vallum at these sites. A small gap in the north mound was found at MC 23, but it was later blocked. The conclusion was that the Vallum ditch could only be crossed at forts and that there was no gap in the south mound opposite milecastles though one in the north mound might be presumed.

On this basis, it might be presumed that access across the causeways at forts could lead to the north berm and through gaps in the north mound south of milecastles to these structures. The possibility of one or other of the berms of the Vallum being used for traffic has been considered at various intervals over the last 130 years. It might be thought that the last word had been said in 1892 when it was pointed out that the large stones scattered on the berms at Limestone Corner would prevent movement thereabouts. Excavations have provided evidence for metalling on the north berm at Black Carts, Appletree, Knockupworth and Burghby-Sands. The evidence from the southern berm at Down Hill, Grindon, High Shield, Carvoran, High House and Millbeck Farm is not of the same quality and must be regarded as problematic. Swinbank sought but failed to find metalling on the south berm at MCs 23 and 42 (Breeze 2015, 5–8). There is some support therefore for the north berm being used for movement along the frontier complex.

At Great Chesters, Heywood had examined the causeway over the Vallum ditch south of the fort confirming that it was of boulder clay revetted with stones and was original (Heywood and Breeze 2010). At Cawfields, Swinbank found an inscription reused in a later context, but apparently originally recording the construction of the Vallum (Heywood and Breeze 2008). Although the reading of the inscription is difficult, its identification as a Vallum stone is indicated by its slight width, as in the other Vallum stones; Tomlin regards it as recording the activities of the *civitas* of the Durotraces (*RIB* 3376).

Geophysical survey of Rudchester revealed a southern turn in the line of the Vallum to the west of the fort so as to avoid the fort while to the east the Vallum ran south of the fort (Goultly *et al.* 1990). It was argued that the normal assumption that the forts preceded the Vallum may be more complicated and a 'logical argument might be that the deviations of the Vallum at forts show that its course was determined and that parts of it were constructed before the forts were located or built' (Bowden and Blood 1991, 30). Welfare surveyed the earthworks of the camp and Vallum at Shield-on-the-Wall, teasing out a complicated sequence (Welfare 2013). He noted that the camp respected the corridor which had been reserved for the Vallum but which had not yet been constructed. Quarries on the line to be adopted by the Vallum provided 'the facing-stones of Hadrian's Wall'. On the basis of this sequence, Welfare argued that the Vallum was part of the original plan for the Wall.

In his review of the way that Hadrian's Wall was surveyed, Poulter argued that the Vallum was laid out from each fort (Poulter 2009, 74). This might be regarded as further evidence that the construction of the Vallum followed the fort decision. Poulter also argued that in some cases the Vallum appears to have been aligned on existing structures, including Ts 35b, 42b, 49a, and MC 79, which implies that these towers were standing when the Vallum surveyors

started work; the fact that T 49a is in the list indicates that it had not yet been replaced by the fort at Birdoswald (Poulter 2009, 49–50, 53, 73).

It has generally been assumed that the marginal mound found on the south berm of the Vallum dates to the re-commissioning of the earthwork on the return to Hadrian's Wall after the abandonment of the Antonine Wall. This was partly based on: the logical assumption that the asymmetric mound was likely to have been an addition to the symmetrical earthwork; that the marginal mound was differently constructed from the north and south mounds; that at Cawfields the marginal mound sat on a stony layer which did not extend under the south mound; and that at Cawfields there was a second phase to the marginal mound which yielded a fragment of samian dating to the late second to early third centuries (Breeze 2015, 13). Excavations by Wilmott at Black Carts and at Appletree, however, produced evidence to suggest that the south mound and the marginal mound had been erected on the same surface (Wilmott 2009, 134–6). The conflict between the different evidence remains unresolved.

The purpose of the Vallum remains a matter of debate. Among the suggestions proposed in the last 50 years are that: it was a second line of defence (Woolliscroft 1999, 63–6; Welfare 2013, 97); it served as the equivalent of a tank trap; existence would have made it more difficult for raiders to return north with their booty; it may have been a substitute for the Wall if there was a time when it had been decided not to complete the linear barrier (Bennett 2002, 828–9); it was a temporary measure because there was delay in completing the Wall (Poulter 2010, 129–31); it provided protection for soldiers moving along the Wall zone (Shotter 1996, 66); and it served as a boundary marker at the rear of the Wall (Dobson 1986, 18). I reviewed these and earlier suggestions and offered the thought that it may have been no more than a way of improving the control of movement in the frontier zone (Breeze 2015, 25).

THE LATER STAGES OF BUILDING THE WALL

Symonds suggested that the narrowing of the curtain wall and of the walls of milecastles after the fort decision took place in two stages, the first being to a middle gauge of 2.44 m (8 ft), a width recorded at a small number of milecastles, most lying between MC 37 (Housesteads) and MC 43 (Great Chesters), three of which have produced inscriptions of Platorius Nepos (Symonds 2005, 77). However, as Symonds' own table shows, there are wide discrepancies in the width of milecastle walls, with variations from 3.25 to 2.74 m (10 ft 8 in to 9 ft) in the Broad Wall and from 2.63 to 2.41 m (8 ft 7 in to 7 ft 11 in) in the Narrow Wall (Symonds 2005, 78–9).

Another change was the reduction in the level of craftsmanship noted earlier. This occurred while gates at MCs 37 (Housesteads) and 42 (Cawfields) and at the forts of Chesters, Housesteads and Birdoswald were being constructed (Hill 2004, 149–50).

Archaeological evidence exists for the slow progress of building the Wall. At Peel Gap, after the laying of the Broad Foundation, through which passed a culvert, and at least one course of wall, work was abandoned long enough for the culvert to be blocked by peat and silt and the foundations to be overgrown before the soldiers returned and completed this section to the narrow gauge (Crow 1991a, 53). At Birdoswald, Wilmott recorded a layer of soil covering incomplete buildings (Wilmott 1997, 73, 79). The Broad Foundation laid down near MC 39 (Castle Nick) and from Great Chesters to T 43a (Allolee) was ignored by later builders who erected the Narrow Wall on a new line (Crow 1991a, 55; Breeze 2006, 214–6). At Chesters, Haverfield recorded a layer of peat, branches, leaves and objects of leather in the bottom 450 mm (1 ft 6 in) of the Wall ditch beside T 27a implying a gap between the digging of the ditch

and the construction of the fort (Haverfield 1901, 85–6; 1902, 15–7. The sequence also appears to be lengthy at Great Chesters, as already noted. Welfare's interpretation of the sequence at Shield-on-the-Wall suggests that the curtain wall had not been built in this sector before the decision had been taken to construct the Vallum, while he has also pointed to the incomplete state of the Wall ditch in parts of the central sector (Welfare 2004; 2013). All this evidence implies a lengthy building programme, but not necessarily one which extended beyond the reign of Hadrian.

Symonds noticed that unusual things were happening in the crags sector, and in particular the western crags (Symonds and Breeze 2016). Here, Ts 39a (Peel Crag), 44b (Mucklebank) and the destroyed 45b (Walltown) are smaller than usual and are not in their correct locations. T 44b is well east of its measured position while T 45b sits a little west of its. Both are in commanding positions by wide gaps in the crags. T 39a lies in a Wall mile where the distances between the structures are particularly inconsistent. Symonds argued that MC 39 (Castle Nick) was planned to be located a little to the west of its final position but was moved eastwards from the crags into a gap. His conclusion was that all these structures were moved to control access points and that after the change to Narrow Wall the Wall builders were allowed to relax the 'rules' which governed the regular spacing of structures along the Wall in order to allow them to adopt a closer relationship with the landscape.

There is a hint that in addition the superstructure of these last turrets was changed from that pertaining in earlier days. Allason-Jones noted that in the report on his excavation of T 44b (Mucklebank), Gibson stated that 'the number of very large iron nails ... seem to indicate that a great proportion of the upper part of the turret would have been constructed of wood' and she went on to note that although nails are found at other turrets, 'they are neither particularly large, i.e. masonry nails, nor numerous enough to warrant the suggestion that the upper parts of all turrets were built of wood' (Allason-Jones 1988, 218). This may suggest that T 44b had a different form of superstructure from its fellows, though this could relate to later repairs, as indeed could other aberrations elsewhere (Hill pers. com.).

Dockerill's analysis of the pottery found in the milecastles and turrets led him tentatively to suggest that 'the section of Wall and structures west of Carlisle be possibly of a later date of construction than that to the east (5–10 years), and that the Cumberland coast scheme be considered as a slightly later addition still (c. A.D. 130+)' (Dockerill 1969, 320–2). It seems doubtful if such chronological precision can be obtained from the available pottery assemblages.

WAS HADRIAN'S WALL COMPLETED WHEN HADRIAN DIED?

We have assumed that Hadrian's Wall was finished at his death. In 2012, I argued that this might not have been the case (Breeze 2012, 5). There are several items of evidence, both archaeological and epigraphic which can be brought into play. Mann identified four of the 'centurial' stones from the Wall, three from Denton but the fourth found near MC 78 (Kirkland), as Antonine in date on the basis of their style and size, arguing that they were 'set up by the same building (or rebuilding) party, working at a single period in time' (Mann 1992). Mann related them to the stone recording the building of Hadrian's Wall in 158 (*RIB* 1389). The use of the word '*perfecit*', to be translated as 'completed', on one stone (*RIB* 1388, thought to have been found at Heddon-on-the-Wall) implies that the Wall had not been finished under Hadrian. Hodgson conducted an in-depth investigation of the find-spot of the Benwell inscription (*RIB* 1389), concluding that it was probably found in Wall mile 9, though

possibly the mile to the east (Hodgson 2011, 66). He linked this stone to similar stones in the area, already discussed by Mann, and concluded that these stones all related to the 'repair of the Wall following the abandonment of Antonine Scotland' (Hodgson 2011, 68). Such repairs may have been required because the nature of the original wall, which consisted of a largely unmortared and therefore unstable core bounded by facing stones of roughly squared rubble bedded in soft mortar, would have required regular maintenance (Hill 2004, 153), or because the Wall at Benwell/Denton had been demolished after the Antonine advance into Scotland (Mann 1992, 238), or, perhaps, because the Wall was not complete at Hadrian's death.

Some support for the last suggestion comes from the forts. There are several building stones from forts dating to the 160s, that is, just after the return from the Antonine Wall, that may also indicate that work on their construction had not been completed when the army marched north to build the new Wall. The excavations of Wilmott at Birdoswald led him to conclude that the primary stone fort ditches were not provided until after about 160–70 while the granaries there were not built until the Severan period, that is about 200 (Wilmott 1997; Wilmott 2009, 392). The building of Hadrian's Wall may have been a longer programme of activity than hitherto appreciated. (The rectangular shape of the Sixth Legion building stone found at T 33b (Coesike) suggests an Antonine date: see p. 18 above.)

REBUILDING THE WALL

Although the original plan called for a wall 10 R ft thick, as we have seen, it was narrowed during Hadrian's reign to 8 R ft, while even narrower stretches are known, especially in the central sector. It has been argued that the 'extra-narrow wall' recorded in the central sector is Severan in date (eg. Crow 1991a, 53–5). This is largely based on what might be called tradition. The suggestion seems to have been originally made by Simpson in 1911 when he linked it to 'the ancient record', that is, to the many references to Severus building the Wall (Simpson 1976, 77; Breeze 2014a, 100). This statement arose from his excavation of T 39a (Peel Crag). In his report, Simpson identified two second century phases followed by the blocking of the recess 'set in large quantities of good mortar'; no pottery was found later than the late second century (Simpson 1976, 98–108). His conclusion, therefore, was that 'the built-up recess was ... clearly associated with the Severan re-build of the Wall' (Simpson 1976, 77). But this was an assumption based on the lack of third century pottery. Crow's work a little to the east at Sycamore Gap led to the recovery of 'broken pottery and other rubbish ... on the north side of the Wall [which] allowed us to date a limited repair to the later second-century' and again 'hard mortar typical of Severan work' was recorded (Crow 1991a, 55).

Such mortar has been found elsewhere. Simpson and Richmond noted 'very good hard white mortar' in the wall blocking the recess at T 54a (Garthside), suggesting that it dated to before the early third century as there was no pottery later than the second century recovered from the turret (Simpson and Richmond 1934, 142). However, the date was explicitly tied in to their current hypothesis that the Wall had been overthrown in 197 and rebuilt under Severus. What was particularly interesting was the observation that the 'almost total reconstruction of the Great Wall, marked by the characteristic white mortar, extended for nearly three hundred yards eastwards' (Simpson and Richmond 1934, 142). In short, the hard white mortar was not just used in the blocking wall but also in the rebuilding of a stretch of the Wall itself, as at Sycamore Gap, with the plan showing the rebuilding running over the side walls of the turret (Simpson and Richmond 1934, 139, fig. 6).

Hard white mortar was used to bond the facing stones of the second bridge at Willowford (Bidwell and Holbrook 1989, 81). Unfortunately, this phase at the site cannot be easily dated. The excavators offered a date bracket of the second half of the second century with the possibility of a closer date range of about 160–80 (Bidwell and Holbrook 1989, 96). They concluded that the use of this mortar in an Antonine context suggests 'that it was not confined to a single period of building on the Wall'. To date, such mortar has not been recorded in a Hadrianic context, but in any case Hill has firmly stated that 'there is no way in which the style of the mortar can be used to date work' (Hill 2004, 86).

THE CIRCUMSTANCES OF THE BUILDING OF THE WALL

The biography of Hadrian, written perhaps 250 years after his death, stated that when he inherited the empire, 'the Britons could not be kept under control' (*Historia Augusta, Life of Hadrian* 11.2). Later in the second century, the senator and courtier Cornelius Fronto likened the deaths in a British war under Hadrian to those in the Jewish War of the 130s when Roman losses were considerable; unfortunately, he did not date the war in Britain (Fronto, *Letter to Marcus Aurelius*, dating to 162). A coin showing *Britannia* 'armed and at rest', is dated to 119 or shortly after (*RIC* 577a), indicating the end of the fighting. In Hadrian's reign, two reinforcements of troops, one containing 3000 legionaries, were sent to Britain, each in an *expeditio*, presumably the same event (*ILS* 2726, 2735). This word is normally only used in relation to the presence of the emperor, who we know came to Britain in 122. Finally, a soldier was buried in the early years of the second century at Vindolanda having been killed in a war (*RIB* 3364).

The evidence for warfare is considerable. There are, however, problems. There is disagreement about the date of the *expeditio*. One issue circles round the dating of the career of one of the officers participating in the event, Pontius Sabinus (Breeze, Dobson and Maxfield 2012). Another, the difference in dating between the trouble at the beginning of Hadrian's reign and the *expeditio* which, if related to the presence of the emperor in 122, ought to have been five years later. Tony Birley has reviewed all previous arguments as well as the evidence and argued powerfully that there was only one war, that recorded at the beginning of Hadrian's reign, but that, while the fighting may have been completed by the time of Hadrian's visit, the emperor still took the credit for its successful conclusion (Birley 2014). The reinforcements would have accompanied the emperor (Birley 2016, 132). Hodgson pointed out that the 'war, or at least one phase of the conflict, was presumably over by 17 July 122 when soldiers were honourably discharged ... from no fewer than fifty auxiliary units then serving in Britain'; Birley linked the discharge to the arrival of Hadrian (Hodgson 2017, 41; Birley 2016, 132).

The reason for the construction of the western 30 Roman miles in turf rather than stone also remains a matter of disagreement. Some see it as a rapid response to threats from beyond the Wall in that area, Hodgson arguing that the Turf Wall could have been completed before work started on the Stone Wall (Graafstal 2012, 136–8, 141; Hodgson 2017, 53; 67). I have suggested that the use of turf might simply reflect its availability, the north of Britain having been largely denuded of trees by this time (Breeze 2009, 92).

The nature of the Stone Wall is relevant to arguments based on a threat from the north. The Wall was a massive undertaking, even just its original plan. This is reflected not only in the width and height of the curtain wall but also in the stones used in its construction. Hill has pointed out that some of the stones in the milecastle and fort gates weighed over 600 kg (half a ton), while a stone in the north gate at Chesters is over twice as heavy (Hill 2004, 75–6); some

turrets were provided with monolithic stone jambs. These all point to the Wall being built in an unhurried manner, not as a quick response to an unsatisfactory military situation (cf Horsley 1732, 123–4 for the Wall not having been erected in the face of the enemy). It would be strange if the Turf Wall was built to deal with a short-term issue if the Stone Wall followed a relaxed timetable.

We have already touched on a variety of actions which changed the original plan for the Wall. The first appears to have been the addition of forts to the Wall; this has been put down to the need to improve the mobility of the army in the frontier zone (Breeze and Dobson 2000, 62). This was accompanied or followed by the decision to construct the Vallum, the purpose of which has been discussed. Other measures included the narrowing of the wall and a reduction in the level of craftsmanship. Hill sees most changes as relating to a wish to speed up the building process (Hill 2004, 150). There are, however, other aspects, the slow progress in completing various sections of the frontier and the hiatus in the building programme at Birdoswald in the form of a layer of soil overlying partially completed structures. Do these disruptions in the building programme indicate opposition to the construction of the Wall? (Breeze 2003).

It remains to consider the reason for the original width of Hadrian's Stone Wall and indeed the unusual nature of the frontier. Various reasons have been offered for the former, the most significant being the existence of a wall-walk (Bidwell 2008). Crow has suggested that the philhellene Hadrian was 'likely to have been aware of the Greek tradition of long walls. It would appear that in Britain the local conditions favoured an isthmian wall built in stone according to the Greek model, rather than the traditional Roman materials of turf and timber' (Crow 1986, 727). Stevens (1955) and Breeze (2009) also saw the hand of Hadrian in the design of his Wall, noting the width of the Wall, the regularity of its planning, and the invention of milecastles and the Vallum.

We then move into the realms of symbolism. After stating that the construction of the frontiers was 'a symbol of abdication and failure' — failure that is to continue with the historic mission of Rome to conquer the whole world — Mann proposed that when the Roman army was deprived of its main task, conquest, 'it was given instead a necessary but much inferior role. Flinging its great energy and an enormous amount of time into the work, is it surprising that it could produce over-elaborate and unnecessary structures like Hadrian's Wall? Is this not what psychologists define as "displacement activity"?' (Mann 1974, 727). Janet DeLaine continued along a not dissimilar line, offering the following comment: 'The building of permanent defences at the boundaries of the Empire can also be read as symbolic statements, city walls writ large marking the edges of civilization; the act of building Hadrian's Wall may have been as important as finishing it. The care with which these walls were decorated confirms the fact of their presence mattered as much as their defensive capability' (DeLaine 2002, 220–1). DeLaine cited Aristides' speech about the protection of the Roman Empire probably given in 144, that is, when the Antonine Wall was being built: 'you ... placed [walls] around the empire ... An encamped army like a rampart encloses the world in a ring ... as far as ... the great outermost island towards the west. All this one can call a ring and circuit of walls. They have not been built with asphalt and baked brick, nor do they stand there gleaming with stucco. Yet these ordinary works too exist, yes, in very great numbers, and, as Homer says of the palace wall, "fitted close and accurately with stones, and boundless in size, and gleaming more brilliantly than bronze".' (Aristides, *Orations* 26.80–3). Hingley also related the building of the Wall to imperial identity, but in a different way

(Hingley 2008, 26–7). He suggested that the 'construction and character of Hadrian's Wall may relate to a need to define the limits of a hybrid and transformational Roman identity in the context of territory outside imperial control that was occupied by "barbarians"'. Further the 'construction of the Vallum meant that the fortification effectively faced both north and south, an expression of the uncertainly and potentially unstable margins of imperial control'. The frontier expressed the insecurity of the emperor and the imperial elite which led to the formation of barriers.

It is worth noting that this is a long running discussion, in which the nature of other Roman frontiers plays a part. In 1885 Mommsen argued that the threat from the north led to the construction of a frontier stronger than that in Upper Germany (Mommsen 1968, 165). Symonds has offered some support in suggesting that the scale of the Wall relates to the high population densities to both the north and south, especially in the east and west sectors, in contrast to the Upper German and Raetian frontier where there are few indigenous settlements beyond the frontier (Symonds 2018, 176).

THE BUILDING PROGRAMME

Fifty years after the publication of Hooley and Breeze, the programme for the building of Hadrian's Stone Wall has become more complex; unfortunately, we have relatively little new evidence for the Turf Wall. The main points may be summarised as follows:

- It seems likely that the structures in the sector from about MC 46 to the river Irthing at MC 49 were erected early with a start made on the curtain wall with up to six courses laid; a sculptured stone which may commemorate the building of the Wall was found close to MC 48; the eastern end of this 'primary' stretch presumably lay east of the short length of Broad Wall between T 46a and T 46b, perhaps at the Tipalt Burn/Thirlwall;
- Graafstal has drawn attention to the unusual width and unusual nature of the Broad Foundation at MC 27 and T 27a, suggesting that this was also an early planned stretch of Wall and ditch (Graafstal 2012, 146);
- milecastles were simplified and the number of men based there reduced;
- MCs 7 to 22 together with their turrets were all started to broad gauge, though not all were completed before the decision to narrow the Stone Wall; the start point for building this sector may have been the Portgate where Dere Street reached the Wall; from about T 11b (Throckley) eastwards to Wallsend, pits have been found on the berm;
- MCs 23 to 27 were also all started to broad gauge, though we do not know how many, if any, were completed to that width;
- Broad Foundation was laid in the central sector with turrets and parts of milecastles erected (including MCs 37, 38 and 42 all of which have produced building inscriptions of Platorius Nepos), except on Peel Crags and from T 43a to a point east of the Broad Wall between T 46a and T 46b; the fort at Carvoran beside MC 46 may have been retained in order to control the gap; there is evidence that MC 43 and Ts 27a and 36b were occupied before they were demolished; Poulter argued that Ts 35b, 42b and 49a were used by the Vallum surveyors for sighting implying their construction to full height;

- Some evidence suggests that the Turf Wall was divided into six sectors each 5 Roman miles long; a fragmentary timber building inscription found at MC 50 TW records the name of Platorius Nepos indicating that the building of the Turf Wall was underway in his governorship;
- The decision was taken to add forts to the Wall while Platorius Nepos was still governor, that is before about 126;
- The decision to construct the Vallum would appear to have post-dated the fort decision;
- There is evidence to suggest that there may have been a longer break in the building process than might be implied by the fort decision;
- The Stone Wall was narrowed, and the standard of workmanship was reduced while MCs 37 and 42, and Chesters, Housesteads and Birdoswald forts were being built; the ditch was not completed;
- The Stone Wall was finished between Wallsend and the river Irthing; structures on Peel Crag and some from T 43b to MC 46 moved to locations with better views;
- Great Chesters, which appears to have been planned to be larger, was completed and it is possible that Carvoran was retained (and rebuilt) as a result of that decision; conventional interpretation of the Hadrianic building stone at Great Chesters would place work at this fort after 128;
- Carrawburgh was built over the Vallum to fill the gap between Chesters and Housesteads, probably in the 130s;
- At some stage it was decided to retain Corbridge, Vindolanda, Carlisle and probably Nether Denton on the Stanegate rather than abandon them which is likely to have been the earlier plan (Breeze 2006, 49).

TOWARDS AN ABSOLUTE CHRONOLOGY

The hard evidence to date the construction of Hadrian's Wall is slight. In his biography written about 250 years later, we are informed that Hadrian came to Britain in 122 and built the Wall (*Historia Augusta, Life of Hadrian* 11.2). Platorius Nepos, governor of Britain, was in the province by 17 July 122 when he is recorded on a diploma, having taken over from Pompeius Falco (*CIL* XVI 69). Four inscriptions from three milecastles and two forts (Benwell and Halton Chesters) on the Stone Wall and one milecastle on the Turf Wall record building during his governorship (*RIB* 1634, 1637, 1638, 1666, 1340, 1427 and 1935). However, we do not know when his governorship ended, though 'he had been replaced at latest in the summer of 127' (Birley 2005, 123). An inscription from Great Chesters bears the title *pater patriae* for Hadrian, which he did not take until 128, but which was sometimes mistakenly used earlier in his reign (*RIB* 1736).

C. E. Stevens argued that work on the Wall began before Hadrian's arrival (Stevens 1966, 86–7). Stevens was struck by the unique elements of Hadrian's Wall, and in particular the Vallum and argued that the decision to construct it was taken by Hadrian when he visited work in progress in 122. Hill made two significant points: how little Wall may have been

constructed before the fort decision and how quickly the legions could work (Hill 2004, 119–37). As a result, I argued that it was possible that the first plan was started when the emperor was in Britain and then, when he saw the issues on the ground, he made the changes of adding the forts and the Vallum (Breeze 2009, 97). Graafstal, challenged Hill's timetable and returned to the Stevens position, though offering considerably more elaboration of the argument (Graafstal 2012; Graafstal 2018; also Hunneysett 2017, 51).

The coin commemorating victory in Britain was issued in or close to 119. Building would not have started before victory was achieved. If one year is allowed for planning and surveying, perhaps building started in 121 (Graafstal 2012, 159). This would allow time for the first building work to have been undertaken before Hadrian's visit in 122, a visit which probably led to the fort and Vallum decisions. Graafstal cites the lack of the name of a governor on the building inscription at MC 47 (Chapel House) together with the distinctive terminology of the inscription to argue for a pre-122 date for its construction which would, of course, fit with the early date of this section of Wall, as argued by Symonds and Graafstal (Symonds 2005, 72; Graafstal 2012, 150). Hunneysett has the change from Broad to Narrow construction occurring shortly after July 122 (Hunneysett 2017, 52). Hodgson argued for a start of building in 122, with the Turf Wall and a trial section of the Broad Wall built in that season (Hodgson 2017, 65–6).

THE PURPOSE OF THE WALL

There remains disagreement on the purpose of Hadrian's Wall. Much of the disagreement relates to the underlying views of the interpreters. To take the function of the milecastle. Dobson noted that 'it provided a passage-way and accommodation', 'it could be exclusively for military use, or for civilian use, or both'. He came down, tentatively, on military use as the primary reason for milecastle gateways. But he also stated that to 'provide one [gate] every Roman mile argues for ... considerable confidence [on the part of the army]' (Dobson 1986, 11–12). For him, the Wall was not a fighting platform. Mann went one step further, arguing that the Roman soldier 'prevailed because he could and did outmanoeuvre his opponents. Almost always, in order to do this, he needed the open field. He worked better if he was not confined by set-place artillery, or by set-place defences. Roman commanders in the Wall area would expect to have ample warning of any serious attack from the north, ample enough to allow them to deploy forces well in advance of the Wall, in open country, where manoeuvrability would really count. ... The strictly military defence of the Roman occupied area would have been just as efficiently secured if Hadrian's Wall had never existed' (Mann 1990a, 54). Donaldson argued that the first plan for the Wall 'seems like a mechanical response to a perceived threat ... but something happened which made the Romans modify the Wall ... to give them both the facility for hot pursuit and the capability for rapid reaction on the Wall itself. It is not difficult to suppose that this was an unexpected major incursion' (Donaldson 1988, 136).

Woolliscroft's paper is one of the most important of the last 50 years because it challenged our perception that the milecastles and turrets were regularly planned without any relationship to the landscape and offered an explanation for structures being pulled out of their measured or 'correct' location: it was to enable the soldiers based there to maintain contact with the troops in the bases along the Stanegate road to the south (Woolliscroft 1989). One implication of this is that there was intended to be a close watch, even a 24-hour watch, along

the frontier. Poulter noted that east and west of the central sector from Sewingshields to Walltown (34–46) ‘the turrets and milecastles ... tend to be disposed along the southern edge of the higher ground’ (Poulter 2009, 78–9). His conclusion was that it ‘might appear ... that Hadrian’s Wall possessed little or no defensive function and that it was principally intended to be a barrier to traffic, linking a chain of observation and signalling towers that were sited so as to communicate with the main bases to the rear’, thereby supporting Woolliscroft’s proposition (Poulter 2009, 80). Foglia, however, stated that ‘in four of the five Test Groups, more was visible to the north than to the south by an observer raised above ground level’ (Foglia 2014, 38, 44). Three of Foglia’s sectors lie outside the crags. In the sector between 15 and 19, the view to the south was better than the north at ground level, though ‘from the top of the curtain wall, an observer could see marginally more to the north’; between 22 and 26, ‘hills blocked the views both to the north and to the south, but the views to the north were noticeably better’; while between 51 and 55 ‘the view to the south remained better than the view to the north, even as the height of the observer was raised’ (Foglia 2014, 41). The situation was not uniform and cannot be said to give unqualified support to Poulter’s observation that the Wall was located so as maintain communication to the south. The analysis of Woolliscroft and Poulter led on to the implication that ‘a handful of new forts [were required] in those sectors where the existing Stanegate system did not provide them’ (Graafstal 2012, 129).

The discovery of pits holding uprights, presumably obstacles, on the berm led to renewed discussion of the purpose of the Wall. Bidwell stated that the obstacles bedded in the pits ‘were intended for defence, strengthening the Walls and holding up an attack so that reinforcements could be brought up. They would incidentally have served to hinder smaller-scale or individual incursions’ (Bidwell 2005, 74). He saw the discovery of the pits as confirming the existence of a wall-walk. Allason-Jones, in discussion, asked whether the existence of the pits made it more, or less, likely that there was a wall-walk. There is, of course, a difference between a wall-walk for observation or movement and its use as a fighting platform. Bidwell has argued for the possibility of the Romans firing arrows from it (Bidwell 2008, 139–40). Crow, drawing parallels from walls in the eastern provinces of the Roman Empire in late Roman and Byzantine times, suggested that ‘the mural barriers represented a considerable deterrent to barbarian invasions and there is every reason to assume that Hadrian’s Wall was intended to function in a very similar way’ (Crow 1986, 728). Symonds and Graafstal stressed the need to control weak points like the valleys of the major rivers crossing the Wall, and the discovery of an extra tower in Peel Gap, presumably to cover a blind spot, underlines a basic need for security (Symonds 2005, 76; Graafstal 2012, 145–9).

The divisions in modern scholarship are primarily between those who see the Roman army as a mobile fighting force that at the same time sought to impose its control over the landscape and therefore the movement of people, and those for whom a strictly defensive function is primary. In both scenarios, there is no reason to reject the role of the Wall as a deterrent and there is general agreement that one important function for the Wall was the prevention of low intensity threats, raiding and illicit entry.

CONCLUSIONS

How far have we moved from the 1968 position? The basic building programme appears to be still accepted, but is more nuanced. It is now recognised that the building work proceeded

in an even less orderly fashion than hitherto believed. The unusual nature of MCs 47 (Chapel Hill) and 48 (Poltross Burn) and the turrets in between have led to the suggestion that these were erected very early in the programme, possibly to block the Tipalt/Irthing valley, or as a show-piece for Hadrian; here also a start had been made on building the curtain to broad gauge. Other milecastles and turrets on the Stone Wall conformed to different, simpler, and more uniform plans. It has also been argued that there was an intention to prioritise the building of the structures in the North Tyne Valley. The erection of the north walls of milecastles as well as turrets also appears to have been prioritised, presumably in order to create a chain of observation towers. It has been suggested that in the final phase of erecting milecastles and turrets, that is, in the western part of the central sector, more attention was paid to their relationship to the landscape. It has been argued that the eastern terminal of the Wall was always planned to have been at Wallsend and not Newcastle. The proposal that the soldiers marched up Dere Street and started building the Wall from the Portgate could be seen as support for this. But the proposal has not been accepted by all. While the start date for the building process is still a matter of debate, though with evidence growing for a start before Hadrian's visit in 122, there seems to be general acceptance that the process of building was long and drawn out; I have argued that it may not have been completed by the time of Hadrian's death.

Improved recording of the various elements of the Wall, not least in excavation reports, has also highlighted differences between the original simple plan for the Wall and the subsequent changes. These include the reduction in the facilities at milecastles, the placing of forts on the Wall, the construction of the Vallum, the narrowing of the Wall, the lowering of the standards of workmanship, the ditch being incomplete in parts, the addition of a tower, the move of turrets to take greater advantage of the landscape, and possibly the failure to complete the revised plan before Hadrian's death. Running like a thread through his papers of the last 30 years has been Hill's insistence that Hadrian's Wall was not a high quality product, hence the need for 'large scale rebuilding under Severus' (Hill 2004, 153). This has led to a certain polarisation between Hill's consistently arguing for mundane reasons for actions on the Wall while us archaeologists offer more imaginative proposals. For example, from a builder's perspective it is a straightforward necessity in the crags to start building at lowest levels, that is in the gaps, the start of building at these points having nothing to do with plugging gaps to ensure the security of the province.

Finally, it will have been noted that in spite of excavations on Hadrian's Wall for nearly 200 years, we still have to rely upon very limited evidence to make sweeping statements. We often do not even meet the criteria established by Dorothy L. Sayers. In the case of the height of the Wall there is no evidence from the curtain wall itself. We base our conclusions on the evidence at one unique milecastle and otherwise hypothesise based on the height of milecastle gates. Bidwell and Hill (2009, 40) have reminded us how little of the Wall has been examined (well less than 10%), a point emphasised by the discovery of an entirely new element on the Wall, the pits on the berm in the eastern sector, in recent years. Hadrian's Wall offers a wide field for further research on aspects relating to its building as well as the whole of the later history of the frontier.

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ABBREVIATIONS

CIL *Corpus Inscriptionum Latinarum*
 ILS *Inscriptiones Latinae Selectae*
 RIB *Roman Inscriptions of Britain*
 RIC *Roman Imperial Coinage*

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Postscript: While this paper was in press two important publications appeared:

- BIDWELL, P. T. 2018 *Hadrian's Wall at Wallsend*, Arbeia Society, Roman Archaeological Studies, 1, South Shields.
- GRAAFSTAL, E. 2018 'What happened in the Summer of A.D. 122? Hadrian on the British Frontier — Archaeology, Epigraphy and Historical Agency', *Britannia*, 49, 79-111.

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