

## XV.—HADRIAN'S WALL, 1938

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It is well known to all readers of *Archæologia Aeliana* that the investigation of Hadrian's Wall has advanced rapidly during the last few years: so quickly, indeed, that it has not been easy for those deeply immersed in the subject to keep pace with the inquiry. Not a few important points have been settled, and the correlation of new results with old has required considerable adjustment of ideas. Again, the removal of old difficulties has raised new questions. Thus, a statement of how knowledge of the subject now stands is desirable, so that all who read it may share in the thoughts and inquiries of those at work on the problem.

1. *The structure of the Wall.* It is now known that in its earliest form the Wall was designed in two sectors, wherein were employed two distinct materials. The eastern sector ran from Newcastle, presumably from the bridge-head of *Pons Aelius*, to Irthing, and was built in stone, with stone milecastles and turrets. The western sector ran from Irthing to Bowness-on-Solway, and was built in turf, with turf-and-timber milecastles and stone turrets. The nature of the materials employed is intimately connected with the geology of the countryside through which the respective works pass. The 45-mile sector from Newcastle to Irthing is everywhere associated not only with good building-stone but with limestone for burning as the chief ingredient of its mortar grouting. The 31-mile sector from Irthing to Solway runs almost entirely through sand-

stone country devoid of limestone: and although the Irthing does not coincide exactly with the geological boundary, which occurs over four miles further west, it is nevertheless the convenient point at which to make the change. Thus, it came about that the eastern sector was designed as a Stone Wall, ten feet thick at foundation, while the western sector was furnished with a Turf Wall, twenty feet thick at the base. Both Walls were protected where necessary by a large ditch.

The initial building of the Stone Wall was organized as follows. The foundation of the work was laid down everywhere from Newcastle to Irthing, except on the top of the crags, and was linked with the foundations for milecastles, at every 1,620 yards, and turrets at every 540 yards between them. The work of building the superstructure was organized so that turrets and milecastles were built by one set of detachments, while another set began work on the Wall. As might be expected, the milecastle-and-turret builders soon outstripped the wall-builders; with the effect that by the time the work on the minor structures had reached Irthing the wall-builders had not yet reached turret 26*b* at Brunton, east of North Tyne. Thereupon, the gangs whose work was done were set to the task of building the Wall, and began to work back from Irthing eastwards, to meet those whom they had left far behind.

We should not know that this had been the order of events, if it were not for the fact that just at this moment the decision was taken to reduce the thickness of the Wall from ten feet to seven and a half feet. In Gilsland vicarage garden the change took place when the ten-foot Wall was just rising above the foundations. Between that point and Brunton, the superstructure had not been begun; and, when it came, it was laid almost everywhere upon the front of the ten-foot foundation, leaving two and a half feet of foundation projecting behind it. At the milecastles and turrets, where ten-foot wing-walls had been already erected, ready to bond with the Wall as first designed, the effect was even

more curious; for the new narrow Wall bonded, in the same way, with the front of the wing-walls only, leaving their backs projecting like "expansions," as they were actually first called when their meaning was not understood. Thus, the change of plan which enables us to detect the most salient feature of the order of building also shows how the mile-castles and turrets were first planned on the Stone Wall, with wings to bond them easily with the Wall as it was built. Finally, it is a fact that between Newcastle and Wallsend the narrow Wall rests upon no broader foundation; and this is the basis of the accepted view that the Wall as first designed began from the bridge-head at Newcastle, the eastward extension across the denes to Wallsend being added only when the change to narrow Wall had been made.

The Turf Wall exhibits, so far as is known, no change of thickness. Thus, we cannot tell how it was bonded with its turf-walled milecastles. But its stone turrets were from the first designed to fit this structure and not a stone wall, for, unlike the normal Stone-Wall turrets east of the Irthing, they have no wing-walls. They are towers twenty feet square against which the Turf Wall abuts with a straight joint, and it has been observed in one turret (52a) that the lateral masonry, destined to be covered with turf, was less well built than the exposed stonework at front and back. It is this fundamental difference in design between Stone-Wall turrets and Turf-Wall turrets that enables us to say that the Stone Wall was not at first designed to pass west of Irthing and that the Turf Wall ran to Bowness: for the Turf-Wall type of turret has now been traced at so many points between these two limits as to make the conclusion certain.

One significant change in the character of the Turf Wall should, however, be noted. It has been said that the change from stone to turf was made because local geology did not provide a necessary component of the Stone Wall in the sector chosen for turf construction. But even good turf

was not everywhere available. Between turrets 53*a* and 54*b* the Wall crosses the well-known sand-and-gravel belt, called the Brampton Kame, where scrub might be expected to exclude good turf. Here turf is replaced by beaten clay, an interesting reaction to a minor difference in conditions.

The date of the two works as first designed is well known. Four inscriptions have come from the Stone Wall milecastles, 37, 38, 42 and 47, all mentioning the emperor Hadrian and the first three adding his legate, Aulus Platorius Nepos, whose period of office opened shortly before July 122 and continued until late in A.D. 124. Turf-Wall milecastle 50 has produced a fragment from a wooden inscribed tablet, originally conceived in the same terms as the Platorian inscriptions. There can thus be no doubt that the work on the Wall had begun shortly after A.D. 122, and is to be looked upon as the principal result of Hadrian's visit to the province, as his biographer states.

It is, however, well known that the Turf Wall was subsequently replaced in stone. The structural features of the stone wall which took its place show that this operation was carried out in two distinct phases. The first act was to extend the narrow Wall westwards, almost to the true limit of the limestone, beyond turret 52*a*. Between milecastles 49 and 51 this extension did not take the same line as the Turf Wall, but ran to north of it; leaving two miles of Turf Wall virtually intact, with an original milecastle (50 *rw*) and three original turrets (49*b*, 50*a*, 50*b*, *rw*), which were systematically demolished after a short occupation marked by the minimum traces consistent with a measure of use. It is thus clear that the replacement by the narrow Wall took place soon. From milecastle 51 to beyond turret 52*a*, the narrow Wall and its milecastles obliterated the Turf Wall. The Turf-Wall turrets, 51*a*, 51*b* and 52*a*, were embodied in the new work, showing by their distinctive design their original connexion with the Turf Wall, of which demolished remains have been noted at turret 52*a* and at Pike Hill signal-tower (discussed below, p. 269).

The second act of replacement involved the rest of the Turf Wall, from milecastle 53 to Bowness. This is marked by the construction of a Stone Wall over eight feet wide, which obliterates the Turf Wall almost completely, embodies its stone turrets and is equipped with new stone milecastles. It is evident, however, that this change did not take place so quickly as the extension of the narrow Wall; and the fact that it is due to a different enactment explains why this westward Wall should be built to a different thickness.

Evidence for some considerable time having elapsed before the change is provided by turret 54*a*. Here a Clay-Wall turret was built, as is normal in the Turf-Wall sector further east, some eight feet from the lip of the great ditch in front of it. The ditch, however, is at this point dug through unstable sand; and the turret, after a period of use long enough to wear its threshold and to demand a new hearth, collapsed into the ditch. Repairs took a novel form. A new turret was built behind the old one as an isolated tower. A new Wall (this time of turf) and ditch were constructed to north of the old ones, diverging from their line some distance to east and west. Only when all these changes had taken place did the Stone Wall arrive, being run up to join the new turret. An absolute date for the conversion to Stone Wall cannot be offered on the basis of such evidence. It is plain, however, that there was considerable delay. We know, too, that the change came before the end of the second century. For in the disaster of A.D. 197 the turret was destroyed and never rebuilt, the repaired Stone Wall being carried right across its demolished remains. The dating of the replacement of the Turf Wall beyond milecastle 53 thus remains one of the major points upon which evidence is still required before a history of the Wall can be written: and the way in which to get it is by excavating thoroughly the Turf-Wall level of a milecastle in the required sector.

Before leaving the travelling works of the Stone Wall

and Turf Wall some minor points may be noted, as bearing upon their structure. The Stone-Wall milecastles have three principal types of gate, and an attempt has been made to associate these types with the three legions known from inscriptions to have been engaged upon their construction. Type I, a gate with jambs at front and back fitting the ten-foot Wall, is linked at milecastles 37, 38 and 42 with the Second Legion. Type II, a gate with rearward projection but no rearward jambs, is connected with the Twentieth Legion at milecastle 47. This might seem to leave type III, a projecting enlarged version of type I, to the Sixth Legion, but here evidence is lacking : and, indeed, more is required to substantiate the other points, however attractive the hypothesis.

A second point concerns bridges upon the course of the Wall. It will be recalled that both the Stone-Wall bridge across North Tyne at Chesters and the bridge which connects the Stone Wall and Turf Wall across Irthing at Willowford were at first designed no wider than the Stone Wall which they served, and to which they are alined. It is evident that their task was to carry the rampart-walk of the Wall across these streams, at a height not now evident from their reconstructed remains.

A third point is worth bearing in mind in connexion with the collapse of turret 52*a*, on the Clay Wall. While it was the common rule to place the Turf-Wall and its turrets only some eight feet away from the ditch in front of them, the Stone Wall is regularly placed twenty feet behind the ditch. There is some evidence, notably between turrets 56*b* and 57*a*, that the Stone Wall which subsequently embodied the turrets did not hold to a straight line between them, but retired in a very gentle re-entrant to a safer distance from the ditch.

Finally, the provision of at least one special signal-tower on the line of the Wall is to be noted. At Pike Hill, the most notable eminence between Irthing and Solway, a tower once twenty feet square lies askew at an angle of

45 degrees to the line of the Turf Wall, which, accompanied by its ditch (and later by the Stone Wall which replaced it), makes a zigzag in order to include it. The tower is not placed thus at random: it faces, when turned this way, both Gillalees watch-tower, on the road to Bewcastle north of the Wall, the fort on the Stanegate at Nether Denton, and Walltown Crag, the next high point eastward on the line of the Wall. The position of the tower is thus explained by its objectives, and there is no need to suppose that it began life outside the Wall-system. In any case that system specifically included it, for the adjacent milecastle 52 is designed half as large again as the normal milecastle in order to accommodate, in addition to guards for two turrets, those who served the tower. When it is borne in mind that turret 44a on Walltown Crag was also designed as an isolated tower, yet embodied in the Wall, the idea of a long-distance signalling-system, cutting across the short-distance patrol-work of the turrets, is seen to be worth a pigeon-hole, pending further discoveries.

2. *The forts.* While milecastles and turrets are seen to have been from the first an integral part of the Wall's design, the case of the forts is less clear; and the question is complicated by the fact that the forts do not follow a uniform design. There is, however, no doubt whatever that by the time the design of the Wall had reached its final stage these forts were included as part of its equipment. Thus, Wallsend fort is known to be bonded with the narrow Wall, and so also is Great Chesters, while Birdoswald and Housesteads were undoubtedly already there before it reached them, for it abuts upon the northern angles of both.

We have already seen, however, that Birdoswald lies in the Turf Wall sector, and its relation to the Turf Wall is very different from the simple later arrangement. The ditch of the Turf Wall passes below the fort immediately beyond the main cross-street (*via principalis*), so that the northern half of its main east and west gates lie on top of

the ditch, and are carried upon masonry and a rubble raft. This arrangement is repeated elsewhere. Both Halton and Chesters forts overlie the ditch of the Stone Wall in exactly the same way: it has been thought that Rudchester did so also, and it is likely that the same is true of Benwell and Burgh-by-Sands which bestrode the Wall in similar fashion. If these facts stood alone they would appear to speak decisively for the absence of forts in the initial scheme of Wall-building. But there are points which appear to contradict this view. At Chesters the foundation of the ten-foot Wall was laid across the tips of fort-ditches already dug, as if a fort had certainly been already planned. At Great Chesters the fort's western ditch-system is specifically planned in relation to the ten-foot Wall and disregarded by the narrow Wall with which the fort is bonded. Nevertheless it is incontestable that in all these cases some element of the Wall, whether ditch or foundation, preceded the fort. Only at Housesteads does the fort appear to be first; and even there the ditch-system is known to make allowance for a Wall, whether existing or to be, nor is the relation of the fort to the ten-foot foundation so clear as might be desired. More evidence upon these points is therefore needed. Yet it must not be forgotten that both Halton and Benwell have now furnished evidence of erection by Platorius Nepos, in the shape of inscriptions which in both cases are directly associated with the forts as we know them and not, for example, with earlier forts on the same site. Thus, whatever the tangled evidence may eventually prove to mean, it is already certain that we are dealing only with complications attending the building of the works. The final form of the forts was laid down under the very governor who built the earliest works.

To pursue further the question of relationship between forts and Wall might therefore seem an academic inquiry, the archæologist's substitute for the school-man's exercise: but such an estimate hardly does justice to the importance of the question, when it is put in another form. If there



were at first no garrison forts on the patrol-line of mile-castles and turrets, then the Stanegate must have been expected to play a part in the scheme, supplying from its forts the reserve garrison for defence. If, on the other hand, forts were planned from the first, then the apparently contradictory evidence must be regarded only as representative of lack of co-ordination among the working gangs. It will be seen that there is an important difference between these two points of view, and further evidence is required as the basis of a decision between them.

Two forts deserve special mention as standing outside the usual type and arrangement. Carvoran and Castlesteads are both detached from the Wall. In the case of Carvoran this would seem to be because it is reckoned as a Stanegate fort, deliberately excluded from the military zone of the Wall by the Vallum, which runs to north of it. At Castlesteads the reason would appear to be that the Wall runs in a particularly awkward position. But this fort is included by the Vallum. It should be noted that excavation has recovered the outline of a small stone fort on the site, which overlies a still earlier turf-built fortification on a different alinement. The date of the change from turf to stone building appears to fall in the second century, and may coincide with the replacement of the Turf Wall in stone. Only further excavation can answer the point.

3. *The Vallum.* The place of the Vallum in the scheme of frontier works has for long defied criticism. This is due partly to the ambiguity which has surrounded the relationship of forts and Wall. For the relation between the Vallum and these forts has for long been known, in the sense that the Vallum has been found to avoid them by a more or less symmetrical diversion from its straight course; as at Benwell, Halton, Birdoswald and Castlesteads. The further requirement has been to find a point where the travelling works of Wall and Vallum impinge upon one another at a point dissociated from a fort.

This condition, long sought in vain, is to be found west

of Birdoswald, where the Vallum has been found to deviate at Turf-Wall milecastle 50 rw. Further, not only does the Vallum avoid the milecastle by a deviation resembling that at a fort in miniature, but further east, where it approaches the Turf Wall too closely, the north mound is omitted and its material placed in a south mound of twice the normal width. It is thus evident that the Turf Wall must have been there first. While the lack of a north mound in this sector shows that the Vallum need not be older than Birdoswald fort, which would have obliterated a north mound in normal position but escapes obliterating the ditch. This leaves us with a coherent state of affairs, in which the Vallum figures as part of the Wall frontier and contemporary with the Stone Wall from Newcastle to Irthing and the Turf Wall from Irthing to Bowness. Two facts may be adduced in support of its early place in the scheme. First, the Vallum is not known to have accompanied the secondary extension of the Wall from Newcastle to Wallsend. Secondly, the Vallum has now been proved to run below Carrawburgh, a fort joined (actual bonding awaits proof) to the secondary narrow Wall in such a way that it cannot antedate it.

The duality of Wall and Vallum is by no means a new conception. It has figured, before becoming a proved fact, in not a few theories. More recent study of the structure of the Vallum, however, has very sharply emphasized its non-defensive nature while emphasizing its effectiveness as an obstacle. Thus, the contrast of military and civil type of boundary provided the basis for a suggestion that the Wall was a military barrier under the war department, while the Vallum was a customs bar, under the fiscal administration. This view wins no support from continued inquiry, and the organization of the Vallum may now be demonstrated as intimately linked with that of the Wall. At forts the evidence is not conclusive. The Vallum was here crossed by a public road which passed its north and south mounds through original gaps and crossed the ditch by a

causeway of undisturbed subsoil with vertical sides revetted in stone. On the middle of the causeway an undefended gateway served to bar access, if required, by means of doors closed from the north. Thus, public traffic across the Vallum was here permitted under conditions permitting complete control. At the milecastles a very different state of affairs obtained. The north mound, if not in actual contact with the milecastle (as at milecastle 50 TW), was pierced by a revetted gap. This gave access to a narrow stone-revetted causeway, of which precise structural details are lacking owing to later demolition of the known examples. By means of this causeway the milecastle's garrison reached the south side of the ditch. Here was no gap in the south mound, showing that the causeway was not for public use. The function of the causeway was to give access to a patrol-track on the south side of the ditch. This trackway eluded archaeological search for over a generation because of its slight construction. On a hard clay subsoil, it is no more than a thin sprinkling of river-gravel: only in sandy soil does it assume the character of a well-founded road. Its character is thus now clear, and it will be perceived that the discovery brings the patrolling of the Vallum, and therefore its function, into the closest possible connexion with the milecastles of the Wall. The Vallum takes its place as a prohibited zone delimiting the south side of the military area, an unmistakable belt one hundred feet wide, in which an obstacle is provided by the great ditch. Neither commerce nor interference with the soldiery could take place across it unchecked.

Structurally, the effect of recent research has been to underline the emphasis placed upon the ditch of the Vallum as the main obstacle. The mounds, however, were always sharply and clearly defined, being made to stand boldly by means of the turf revetment or kerbing now recognized as almost everywhere normal: in sandy soil an example of stone revetment is known, on the south mound at High House, west of Birdoswald. The discovery of the revetted

causeways at forts, and of their demolished remains at mile-castles, has shed new light on the original form of the ditch, which emerges as a narrower structure than usually appears with very steep sides. The method of retaining these sides in the work at large still requires study.

The wide Vallum ditch now almost everywhere visible along the course of the work owes its form to recutting, marked by the well-known marginal mound. This operation did not take place until after the Vallum had been subjected to a systematic obliteration, marked by cutting gaps in its mounds at approximately every forty-five yards, and by using the earth thus obtained to form an earth causeway across the ditch. An absolute date for the obliteration is not yet obtained, though it is thought that it occurred not very long after the work had been constructed. This conclusion is consistent with the fact that at certain forts, for example, Birdoswald, the Vallum-ditch was quickly filled up, its causeway arch dismantled, and the whole work for ever obliterated. The treatment, however, was not uniform; at Benwell the Vallum-gateway continued in use for a very long time. At the milecastle crossings obliteration (presumably contemporary with the general demolition, but not yet proved to be so) took the form of dismantling the original narrow causeway, and replacing it by a newer and much wider causeway carrying a road which led across the south mound. Whatever the historical context of these changes may some day prove to be, their structural significance is plain. There came a time when the Vallum was regarded as no longer required.

An impression that the obliteration of the Vallum may coincide with a time when emphasis upon the organization of Hadrian's Wall was less sharp, may be thought to win confirmation from the fact that in due time an attempt was made to put the Vallum into commission once more. On this occasion the whole emphasis was placed upon the ditch, for no attempt was made to fill up the gaps in the mounds. But the ditch was cleaned out afresh, creating the wide bold

obstacle so conspicuous to-day. The causeways were not cleared out everywhere, often meres or marshes rendered this unnecessary, and the new operation is thus revealed to have been sensitive to local conditions.

One structural point in connexion with the original design of the Vallum may be mentioned now, lest its interpolation should have impeded earlier the flow of argument. The original form of the ditch, narrow, deep and steep, demands that it should have been kept dry: for water, running or stagnant, would soon have played havoc with the stability of the sides. How this effect was obtained when the Vallum came into contact with some streams is demonstrated at Poltross Burn, where the sides of the ditch were built artificially in stone, and were, it is presumed, carried across the stream over a culvert. But how was a similar effect obtained where the level of a stream lies above the bottom of the ditch, as at High Shield and many other points? Again, what happened when the Vallum and its patrol-track reached large rivers like North Tyne, Irthing or Eden? These related questions await an answer before a complete structural account of the work can be written.

4. *The Military Way.* The parapet walk of the Wall provided the first and most essential link for patrolling its course. It was soon followed, as has been seen, by the patrol-track of the Vallum, which, in its more heavily constructed portions approaches the standard of a Roman military road. So far as is known, however, no attempt was at first made to provide the immediate line of the Wall with a through road capable of bearing all weights of traffic. All heavy traffic, for example the grain-convoys, was first expected to move along the existing line of the Stanegate, reaching the individual forts from it by branch roads.

The Military Way is an attempt, highly skilful in its engineering, to simplify this somewhat tortuous system of communication. It comes late in the scheme of things, for it is known not merely to run on top of the north mound of the Vallum in some sectors, for example, Limestone

Bank, Cawfields and Banks, but to do so after the Vallum had been obliterated by cutting gaps in the mound. These gaps are filled up to carry the Military Way. It may be expected that the enlargement of the bridges at North Tyne and Willowford also coincides with the coming of the Military Way, but the point is not yet proved.

The foregoing view is consistent with all the evidence at our disposal. But it must not be disguised that it breaks down in one important particular. The Stanegate is known to have existed between North Tyne (whence it is now presumed to have run eastwards to Corbridge) and Carlisle. But if no Military Way existed in the original scheme, how were the eastern and western forts supplied? In the west, the situation might be met by branch-roads from the West Cumberland road between Carlisle and Maryport. Between Newcastle and Halton the situation is much more complicated, and possible arrangements are not clear.

In conclusion, it is desired to state that these notes are not intended as a substitute for excavation reports. The material which they summarize is to be found in the pages of *Archæologia Aeliana* and of the *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, covering the last decade: and specific references to the context of each point have been omitted, in the belief that those who desire to enter more deeply into the matter either will have read, or will now take opportunity to read, the reports in which evidence for the statements here made is described in detail: for the purpose of this article is to eschew controversy, and to state evidence rather than to state a case. If the words of a famous historian may be applied to this series of foot-notes to history, "with self-denial it has been written: with self-denial let it be read."