

XI.—EXCAVATIONS ON HADRIAN'S WALL  
BETWEEN HEDDON-ON-THE-WALL AND  
NORTH TYNE IN 1930.

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CONTRIBUTION BY ERIC BIRLEY, F.S.A.

[Read on 25th February, 1931.]

- AA *Archæologia Aeliana*.  
Bruce *The Roman Wall*.  
CW *Cumberland and Westmorland Transactions*.  
JRS *The Journal of Roman Studies*.  
NCH *A History of Northumberland*, vols. I-XIII.  
PSAN *Proceedings of Society of Antiquaries of Newcastle*.

INTRODUCTION.

Sir George Macdonald, in the closing paragraph of *The Roman Wall in Scotland*,<sup>1</sup> exhorted his fellow Scottish antiquaries not to lay down the spade until the whole of that *limes* had been subjected to a thorough examination. For their encouragement, he added that their difficulties were not "anything like so serious as those that English antiquaries have to face in Northumberland and Cumberland." For students of the Scottish Wall, the problem of outstanding interest has been the interpretation of the records of its construction preserved by the "distance-slabs." Responding to his own appeal, Sir George returned to that problem in 1911—to produce its solution, by means of epigraphic evidence alone, twelve years later.<sup>2</sup>

Students of the epigraphic remains from Hadrian's Wall have long been familiar with the idea that some

<sup>1</sup> p. 403.

<sup>2</sup> JRS XI, p. 1 ff.

such scheme of sectional construction as that recorded by the distance-slabs had probably been adopted by Hadrian's engineers, but their progress towards the recovery of its details has been hindered by the tantalizing brevity of the evidence. This inadequacy is only too apparent when the centurial stones from the Wall of Hadrian are compared with the building records from the Antonine Wall. Nevertheless, as the excavation of the Wall itself advanced during the third quarter of the nineteenth century, the idea of sectional building was supported by the appearance of minor differences in the thickness of the Wall structure.<sup>3</sup> During the past twenty years, the occurrence of much greater variations in the thickness of the Wall has been demonstrated, and the meaning of those existing in the original structure has now been explained by the theory of the "broad" and "narrow" Walls.<sup>4</sup> While this considerable advance in our knowledge of the structure of the Wall has been in progress, epigraphic evidence has quite failed to fulfil its earlier promise of providing at least a partial demonstration of a sectional building scheme. The first three milecastles to be excavated (by John Clayton: no. 42 in 1848, no. 37 in 1853, and no. 39 in 1854) each produced a legionary building inscription, but the next four (no. 40 excavated in 1908, no. 48 in 1910, no. 50 in 1911, and no. 9 in 1929) have not yielded between them one inscription of the period of the Wall's construction. Further, during the present century, the finds of centurial and similar inscriptions have been too few in number to represent measurable advance in our knowledge. But this passing of the capacity for further advance, for the time being at any rate, from the study of inscriptions to that of structures, had not, until 1930, brought a solution within the range of probability; for both branches of study were faced with an insuperable barrier to ultimate success, owing to the removal from the field of research of that quarter of the whole length of the Wall covered by the Newcastle-

<sup>3</sup> Cf. Bruce, 3rd ed. (1867), p. 207.

<sup>4</sup> Cf. NCH XIII, pp. 535-6.

Carlisle road for eighteen out of the twenty-three miles west of no. 8 (West Denton) milecastle.

In 1925, the Northumberland County Council began to widen this road from Denton Burn westwards, and at certain points to reduce the gradients. The first opportunity of studying the Wall hitherto covered by the road occurred in 1926, when the surface of the road at Great Hill, between Throckley and Heddon-on-the-Wall, was lowered, and the Wall removed for over sixty yards.<sup>5</sup> The remains were, however, only two courses high. Though the evidence at this point was insufficient to prove what had been the thickness of the superstructure, this information was most fortunately secured in 1927 only 300 yards to the west, from the fragment of the Wall not covered by the road, east of Heddon-on-the-Wall, the property of this society.<sup>6</sup> Though poorly rewarded in the first effort at Great Hill, the North of England Excavation Committee decided to pursue the inquiry at the next stage of the County Council's operations, encouraged by the well-preserved remains of several turrets, partly covered by the road, located during that committee's work for the thirteenth volume of the *Northumberland County History* in 1928 and 1929.

Early in 1930, through the kindness of Mr. J. A. Bean, the county surveyor, the committee obtained the permission of the County Council to undertake excavations in the roadway in advance of the council's forthcoming road operations between Halton Chesters and Portgate, and between Heddon-on-the-Wall and Rudchester. In these sectors attention was to be directed to each milecastle and turret, and to the structure of the Wall between them. Before the work began, Mr. Bean retired, but the committee's plans were confirmed by Mr. H. E. Pitt, the chairman of the Roads and Bridges Committee of the County Council, and by Mr. Bean's successor, Mr. Alexander Cheyne. During the progress of the work, the

<sup>5</sup> AA, 4th ser., IV, p. 113.

<sup>6</sup> *Op. cit.*, p. 118.

committee received such consideration and help from Mr. Cheyne and his assistants, his foremen and workmen, as call for the warmest appreciation of all students of Hadrian's Wall.

As a preliminary to these operations, the committee employed Mr. Thomas Hepple to ascertain the exact positions of the six milecastles between Halton Chesters and North Tyne (nos. 22 to 27), and to discover the seven, out of the ten turrets between them, that were not yet known (nos. 22a and b, 24a and b, 25a and b, and 26a). The names of these milecastles and turrets are given in Mr. R. G. Collingwood's *Hadrian's Wall: A System of Numerical References*.<sup>7</sup>

Before describing the structures excavated in 1930, it will be well to consider the character of the structural evidence already in our possession, to which additions could reasonably be anticipated from further research in milecastles and turrets, and upon the Wall between them. The evidence falls into two main sections: that relating (1) to the building of the Wall, and (2) to later alterations, or to reconstruction due to enemy action. The first section has two all-important subdivisions: the first (a) covering such indications of a sectional building scheme as relatively minor but recurring differences in plan or section, in structures otherwise identical in function and of similar size (*e.g.* in the milecastles); and the second (b) the major differences in the thickness of the Wall (and also of the side walls of the milecastles) associated with the alteration from "broad" to "narrow" standard during construction, and therefore superimposed upon the original minor differences of subdivision (a).

*Section 1a.*—The minor differences in detail of section 1a presumably indicate the liberty of action permitted to local engineer officers, and it is reasonable to expect them to persist throughout the period of construction, unaffected by the alteration from broad to narrow standard. When, therefore, particular details reappear at widely separated

<sup>7</sup> PSAN, 4th ser., IV, pp. 179-187.

points, it may be presumed that they represent the recurring activity of the same unit, transferred from one point to another as the building of the Wall advanced.

Among the various details available for comparison, the plans of milecastle gates first claim attention. Before 1911 five milecastles had produced three gateway plans sufficiently different to represent distinct types (fig. 1). Their distinguishing features are described in the Poltross Burn report.<sup>8</sup> In type I, the gateway is constructed throughout of very massive, well-dressed, and carefully laid masonry; the passage is arched at both ends, and its total length (including the piers) does not exceed the thickness of the milecastle wall through which it passes by more than a few inches at each end. In type II, the whole gateway is built of ordinary masonry, the stones of the piers being no

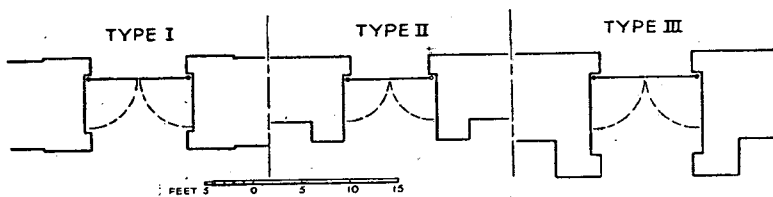


Fig. 1.

larger than lower course facing stones; the passage is arched at the outer end only, and is lengthened by a buttress-like projection of the inner face of the milecastle wall. In type III, the above plans are combined; the passage is arched at both ends as in type I, and at the same time lengthened as in type II. At Poltross Burn there was also a combination in construction, of massive (though badly finished) masonry in the piers, with ordinary facing work in the passage walls. No further type of plan appeared before 1929, the gates at High House (no. 50) being of type III; but in 1929, the south gate of Chapel House (no. 9) was found to differ from the foregoing types sufficiently to represent the first example of a fourth type.<sup>9</sup>

<sup>8</sup> CW, 2nd ser., XI, pp. 406-8.

<sup>9</sup> AA, 4th ser., VII, p. 154.

In this case, the passage is arched at the outer end only, and its length is the same as the thickness of the wall through which it passes. This gateway was constructed throughout of massive masonry.

Another detail of the milecastle plan appears to be emerging as a significant feature, namely the proportionate length of the axis (the centre-line through the gateways). The average internal dimensions of a milecastle (apart from the three "large" examples, nos. 48-50) are 60 by 50 feet. Out of the eleven "small" examples available for comparison before 1930, the axis was the longer dimension in nine cases (as well as in the "large" milecastles); in two only, Housesteads (no. 37) and Cawfields (no. 42), was the axis the shorter dimension. The plan of Housesteads milecastle is here published for the first time (fig. 2) to illustrate the "short axis" type. It may be pointed out that these two milecastles also have gates of type I—the only examples known until 1930.

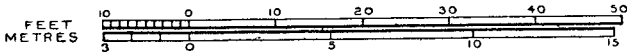
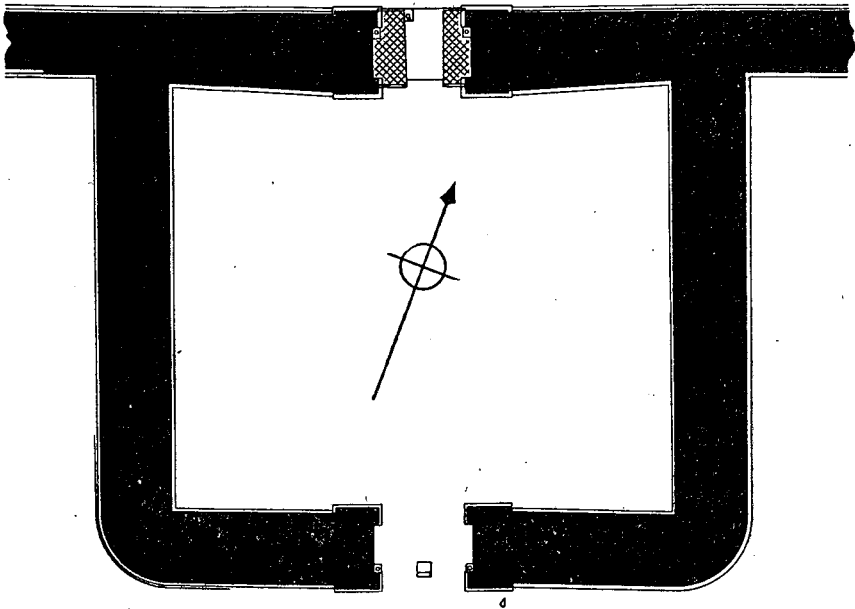
Whether the great difference in area between the thirteen "small" and three "large" milecastles scheduled on p. 321 below has any significance for the hypothesis of sectional building is still uncertain. There is no sign of a large example east of Carvoran (no. 46), which may itself be large; it is notable, however, that Poltross Burn (no. 48), which is large, has broad walls throughout, and must therefore be early in the order of construction.

Neither the turrets nor the cross-section of the Wall had, before 1930, exhibited sufficient evidence of recurring differences in detail to attract attention.

*Section 1b.*—Under section 1b, the evidence available before 1930 was as follows: The Wall between Wallsend and Newcastle had been proved in 1928 and 1929 to be narrow throughout.<sup>10</sup> The broad Wall had been found at Denton Burn and Heddon-on-the-Wall in 1927. Neither of these sections being in the neighbourhood of a milecastle or turret, it was presumed that "the whole Wall from Newcastle to Rudchester Burn was finished at this 'broad'

<sup>10</sup> NCH, *cit.*, p. 493.

standard.”<sup>11</sup> In April, 1929, at the east end of Harlow Hill, the lower courses were found to be broad, but the height, as at Great Hill in 1926, was insufficient to show the thickness of the superstructure. In the same month, a “point of reduction,” at which the thickness was reduced from 9 feet to 6 feet 5 inches, was found 12 feet



HOUSESTEADS MILECASTLE No. 37. *J.G.S.*

Fig. 2.

(the normal distance) east of Brunton turret (26b), proving that the broad Wall here had become “narrow Wall on broad foundation.” Beyond this point, except at Low Brunton milecastle (27), the work of 1930 was

<sup>11</sup> *Op. cit.*, p. 535.

outside the scope of this report; it will be convenient, however, to describe the general situation westwards to Bowness on Solway as it is understood at the time of writing.

West of Brunton turret, except at certain milecastles and turrets (the known examples are nos. 27 and 48, and nos. 29a and b, 39b, and 48a and b), the building of the broad Wall does not seem to have advanced above the lower courses; at no point is it known to exceed a height of 2 feet 6 inches. This broad lower stage, termed the "broad foundation," with the narrow Wall upon it, is the rule as far west as the river Eden, opposite Carlisle. The exceptions to this rule may be quoted from the *Northumberland County History*:<sup>12</sup>

"Where the line follows the crest of the Great Whin Sill between Sewingshields and Greenhead the broad foundation is absent and the Wall is built throughout to the narrow standard. Across the wide gaps between the crags, however . . . the broad foundation with the narrow Wall upon it is usually found. In one case . . . the broad foundation and the narrow Wall run side by side for nearly a mile.<sup>13</sup> . . . Throughout the [Turf Wall sector] between the Irthing at Harrow's Scar and the Banks Burn, near Lanercost, the Wall is narrow. . . . Across one wide gap in the Whin Sill, that of Walltown, the broad foundation is absent."

West of Carlisle, the Wall is narrow, perhaps as far as Burgh Marsh; beyond the marsh to Bowness, the thickness is intermediate between the two standards.<sup>14</sup>

Returning to Brunton turret and the Wall eastwards to St. Oswald's, the question arises whether the available evidence belongs to section 1b or to section 2. Judging by the cross-section on Warburton's map of the Wall,<sup>15</sup> an unusually narrow Wall, less than 6 feet thick, standing upon the broad foundation, was found near St. Oswald's c. 1753 (fig. 3). The fragment at Planetrees, saved by

<sup>12</sup> XIII, pp. 535-6.

<sup>13</sup> From Great Chesters-Æsica to Cockmount Hill. (AA, 4th ser., II, pp. 199-202.)

<sup>14</sup> Cf. Eric Birley, *Three notes on Roman Cumberland: Bewcastle, Bowness on Solway, Petriance*, in CW, 2nd ser., XXXI (forthcoming).

<sup>15</sup> *Vallum Romanum*, Frontispiece.



William Hutton in 1801, also exhibits a similar cross-section, and is only 5 feet 6 inches thick above the broad foundation. In view of the discovery of the "point of reduction" at Brunton turret in 1929, this evidence from Planetrees and St. Oswald's would seem to belong properly to section 1b. On the other hand, "This 6-foot Wall may have an entirely different historical explanation. It may represent total reconstruction above ground. Such total reconstruction has already been proved at one other point, namely Steelrigg Gap . . ."<sup>16</sup> This example is referred to below under section 2. The solution of the Planetrees—St. Oswald's problem awaits further research.

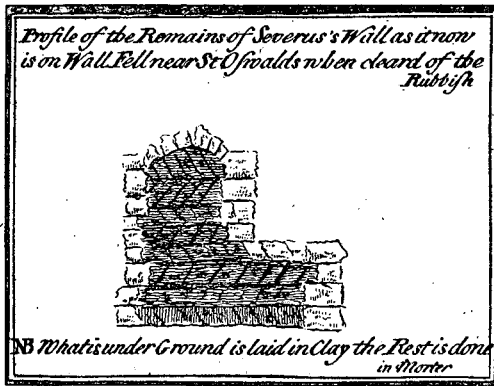


Fig. 3.

Section 2.—Before 1929 such evidence as could reasonably be regarded as dated within narrow limits had been recovered from barely twenty miles of the Wall—from the central, upland sector between North Tyne and Irthing (actually, between turrets 29b and 50b). Until that year, therefore, there was nothing to show whether the history of the frontier, as indicated by evidence of enemy action, was more or less uniform from the building of the Wall to its abandonment; or whether (as was the case in mediæval times) conditions were more

<sup>16</sup> NCH *cit.*, p. 536.

unsettled in the central than in the eastern and western sectors. The first milecastle and turret to be excavated near the east end of the Wall, Chapel House (9) and Denton Hall (7b), produced satisfactory evidence of the stratification familiar in the central sector.<sup>17</sup>

Since 1907, milecastle gateways have supplied a remarkably consistent record of stratification, the details of which are illustrated by figures 4, 5, and 6, reproduced from the reports on Poltross Burn and High House milecastles,<sup>18</sup> and supported by the earlier evidence from Housesteads milecastle (fig. 2). The sequence is briefly as follows:

*Level 1a.*—The original Hadrianic road surface is numbered 1a.

*Level 1b.*—Later in the second century, the road surface was raised and new pivot-stones fitted at the higher level, the original width of the gateway being retained. This alteration probably represents renovation having no historical significance.<sup>19</sup>

*Level 2.*—The road surface was again raised, and on this occasion the width of the entrance was considerably reduced by solid masonry built out from one or both sides of the passage. These additions (crossed-hatched in figs. 2 and 4-6) are usually alike in plan at both gateways, but may differ considerably from one milecastle to another. Evidence of date consistently indicates that these alterations followed the disaster of c. A.D. 195.

*Level 3.*—Following a second disaster, that of c. A.D. 297, the road surface was again raised; at this level the reduced width of the entrance was maintained.

The same sequence of stratification has been observed in the turrets.

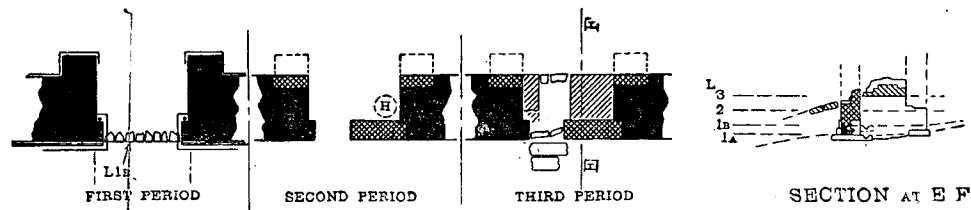
Structural remains of still later occupation following the disaster of A.D. 368 have now been identified in the forts of Birdoswald-Camboglanna<sup>20</sup> and Chesterholm-

<sup>17</sup> AA, 4th ser., VII, pp. 143, 152.

<sup>18</sup> CW, 2nd ser., XI, plate II (facing p. 428); *id.* XIII, p. 318.

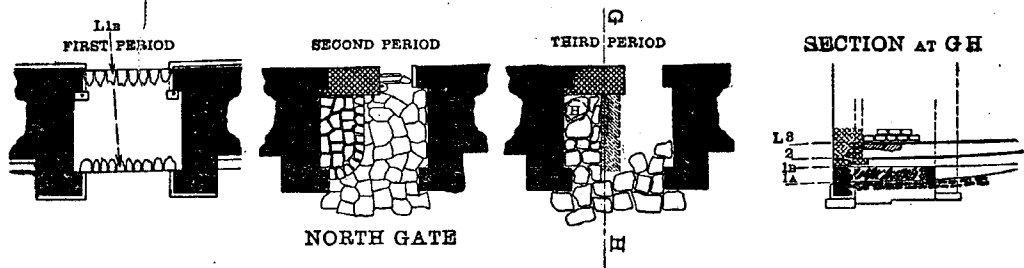
<sup>19</sup> AA, 4th ser., VII, p. 169 ff.; CW, 2nd ser., XXX, pp. 203-4.

<sup>20</sup> CW, 2nd ser., XXX, p. 169 ff.



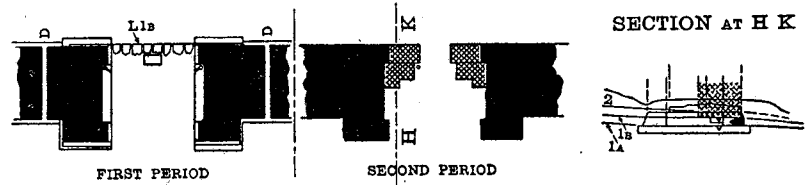
SOUTH GATE

Fig. 4. Winshields milecastle (40).



NORTH GATE

Fig. 5. Poltross Burn milecastle (48).



NORTH GATE

Fig. 6. High House milecastle (50).

Vindolanda,<sup>21</sup> but in no milecastle or turret as yet. The third period pottery from Poltross Burn milecastle includes types represented in the fourth period only at Birdoswald; a coin of Valentinian I was found at Chapel House milecastle (no. 9) in 1929, and one of Valens at Mucklebank turret (44b) by J. P. Gibson in 1892.<sup>22</sup> The above evidence, however, is inconclusive: it may indicate that a fourth period floor had existed, but had been removed before the days of archæological investigation; on the other hand, both pottery and coins may have been in use by the time of the disaster.

The turrets have produced one important piece of evidence that has no parallel in the milecastles, namely the permanent elimination of some of their number following a disaster. In the three excavated examples, nos. 39a and b and 50a, the walls of the turret have been levelled to the ground, the recess built up, and the Wall then carried across the site "as if its existence had been forgotten."<sup>23</sup> In the case of Steelrigg turret (39b), the Wall itself had been entirely rebuilt above ground-level, and the thickness reduced to about 6 feet, for half a mile across the gap between Winshields and Peel Crag. Here the wide foundation is also present. Plate LVIII, fig. 1, shows the three stages of the Wall's structural history in this sector: the lowest "step" is the wide foundation, the second the footing of the narrow Wall, and the third the footing of the Wall rebuilt *a solo*, only 6 feet thick. In 1913 this wholesale destruction of Wall and turrets appeared to be associated with the disaster of c. 195;<sup>24</sup> now, however, the evidence of date seems hardly conclusive.

It was with such information for guidance that the search below the road began in 1930.

<sup>21</sup> Cf. art. VIII above.

<sup>22</sup> AA, 2nd ser., XXIV, p. 13. In AA, 4th ser., VII, p. 166, this coin is wrongly attributed to Valentinian I.

<sup>23</sup> CW, 2nd ser., XIII, p. 308.

<sup>24</sup> *Op. cit.*, p. 350; AA, 3rd ser., IX, pp. 62-3.

## THE EXCAVATIONS.

In ascertaining the exact positions of milecastles 22-27, the east to west dimension and the details of the east and west walls of each were recovered. All six milecastles are "small": nos. 23-27 have long *axes* and broad east and west walls, while no. 22 has narrow east and west walls (the length of its axis is not yet known). From east to west no. 22 measures 55 feet within the walls, and 71 feet (8+55+8) overall. The average dimension, east to west, of nos. 23-27 is about 70 feet (10+50+10): no. 22 would therefore seem to be the first instance of a milecastle laid out to the broad Wall standard of overall dimensions, the side walls of which were finally built narrow, thereby increasing the internal area beyond the normal 60 feet by 50. It may be noted here that as yet there is no example of a milecastle having side walls "narrow on broad foundation." The thickness of the north walls of nos. 23-26 cannot be ascertained until the road is widened; but at no. 22, in July, 1930, the north wall, and the Wall adjoining (well beyond the normal position of points of reduction), were found to be broad, the average thickness being 9 feet 3 inches. It may be presumed that the north walls of nos. 23-27 are broad, like their side walls.

Work at the seven new turrets (nos. 22a and b, 24a and b, 25a and b, and 26a) was confined to locating their exact positions. The approximate position of another, 21b (Halton West) was also determined; this turret stood on a prominent natural mound, where scattered pottery showed that it must have been entirely removed during earlier road operations, if not at the time of the road being made.

*Milecastle 22.*—The north gateway (fig. 7) was found to be of type III. The piers are constructed of massive masonry, the passage walls of ordinary facing stones, with larger stones here and there among them (plate LIX, figs. 2 and 3): the whole of the masonry, though clearly

original, is badly finished. The original (1a) pivot-stones are in position (plate LIX, fig. 1), the holes being well worn; there is no threshold stone. Immediately above the

MILECASTLE NO 22.

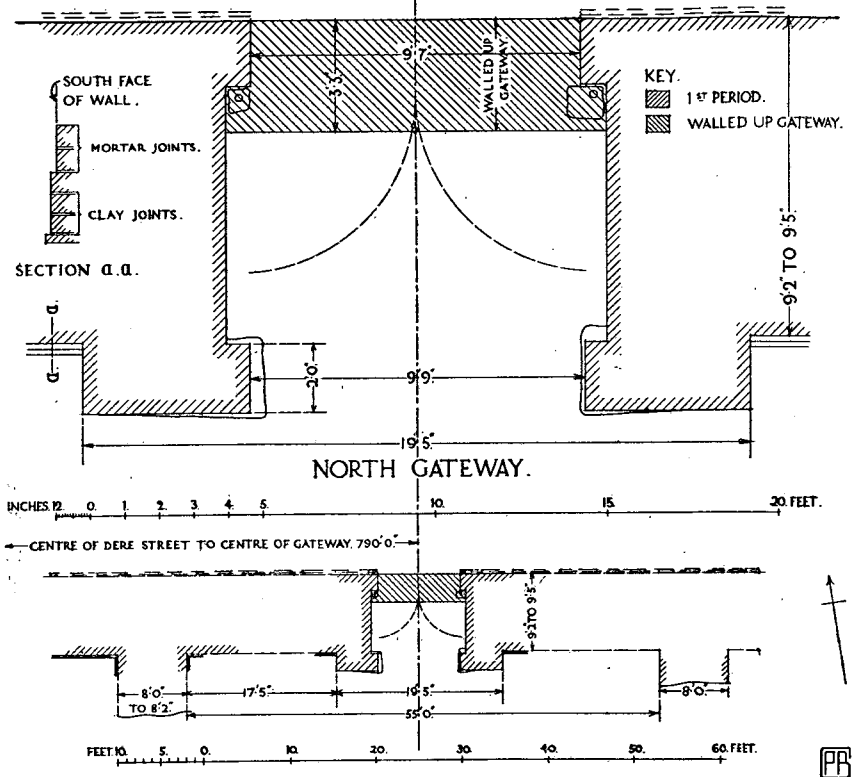


Fig. 7.

west pivot was another pivot-stone, shown in position in plate LIX, fig. 2, and removed in plate LIX, fig. 1; the pivot-hole was very little worn. On the east side, no corresponding stone was found.<sup>25</sup>

<sup>25</sup> The absence of the second pivot-stone at this level is paralleled at the south gate of no. 40, where it had clearly been removed before the building of the reducing wall. (CW, 2nd ser., XIII, p. 321.)

The entrance had been completely built up with a wall 3 feet 3 inches thick, set flush with the outer face of the gateway (plate LVIII, fig. 2): this wall was one piece of masonry, founded upon the consolidated road metal. Hitherto, no milecastle gateway had been found completely built up. The sequence of alterations follows that of the gateway stratification described on p. 314: the upper pivot-stone at the west side corresponds to level 1b, and the building up to the partial building up, in period 2, at nos. 37, 40, 48, and 50. The complete closing of the north gate of no. 22 was a natural step, in view of the existence of Dere Street gateway only 263 yards to the west, at a time when milecastle gateways were being partly built up over many miles, if not along the whole frontier.<sup>26</sup>

The north, east, and west walls, and the Wall adjoining, afforded a second example of a structural feature previously known only in the walls of no. 48 (Poltross Burn)<sup>27</sup> and in the Wall thence as far west as Willowford Bridge.<sup>28</sup> This feature is illustrated by section a-a, fig. 7: there are three courses of walling above the footing flag offset, and a second offset between the third and fourth courses, instead of between the first and second courses (the normal construction; cf. sections a-b and c-d, fig. 8, and a-b, fig. 9). The Poltross Burn example is shown in plate LX, figs. 1 and 2.

The presence of this feature at nos. 22 and 48 recalls that at both milecastles the gates are of type III, and that the masonry of the piers is massive, of the passage walls smaller, and the whole badly finished.<sup>29</sup>

*Milecastle 13.*—Rudchester Burn milecastle presents an almost complete contrast to no. 22. Internally, it measures 59 feet 9 inches from east to west, and 50 feet from north to south; here, then, is a third example of a

<sup>26</sup> This step may, however, have been taken very soon after the 1b renovation, because of the nearness of Dere Street gateway. This would explain the little-worn 1b pivot-hole.

<sup>27</sup> CW, 2nd ser., XI, pp. 400-404.

<sup>28</sup> *Ibid.*, XXVI, p. 429.

<sup>29</sup> *Ibid.*, XI, p. 403.

short axis. The north wall is broad, but the east and west walls are narrow; the Wall is known to be broad as far west as turret 13a, the average thickness being 9 feet 3 inches.

In plan and construction, the north gateway of no. 13

### MILECASTLE NO 13.

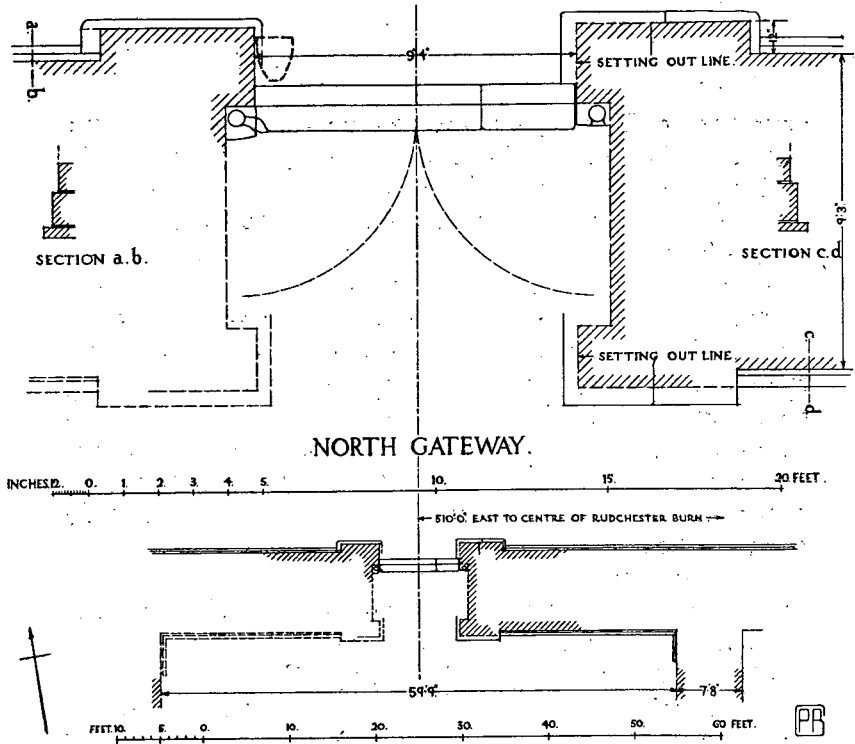


Fig. 8.

(fig. 8) is of type I. The massive stones of the piers are rock-faced within chiselled margins, carefully bedded and laid to setting-out lines. (Plate LXI, fig. 1.) There is a dressed stone threshold let into the footing stone of the east pier (plate LXII, fig. 1); and the original pivot-holes



## MILECASTLE SCHEDULE

No.	Name.	Size.	Axis.	Walls.		Type of gate.
				N.	E. and W.	
9.	Chapel House	Small	Long	Broad	Broad	IV
10.	Wallbottle Dene	"	"	"	"	?
13.	Rudchester Burn	"	Short	"	Narrow	I
22.	Portgate	"	?	"	"	III
23.	Stanley	"	Long	Broad ?	Broad	?
24.	Wall Fell	"	"	"	"	?
25.	Codlawhill	"	"	"	"	?
26.	Planetrees	"	"	"	"	?
27.	Low Brunton	"	"	"	"	?
37.	Housesteads	"	Short	Broad to narrow	Narrow	I
39.	Castle Nick	"	Long	Narrow	"	II
40.	Winshields	"	"	"	"	II
42.	Cawfields	"	Short	Broad	"	I
48.	Poltross Burn	Large	Long	"	Broad	III
49.*	Harrow's Scar	"	"	Narrow	Narrow	?
50.*	High House	"	"	"	"	III

\* In the Turf Wall sector.

NOTE.—Mr. Birley has pointed out to me from the Air Survey photograph that No. 36 (King's Hill) probably has a short axis.

are sunk in the footing stones. The east pivot-hole contains a flat bed of lead, bearing the impression of a roughly circular iron ring (no doubt the base of the actual socket) which had been forcibly removed; no lead was found in the west pivot-hole. Nine inches above the latter was another pivot-stone (plate LXI, fig. 2); tool marks in the pivot-hole proved that it was entirely unworn. At the same level was a single facing stone, laid against the west pier and set back three inches within the outer face (fig. 8, and plate LXI, fig. 2); this is presumably the last of a single course forming a threshold at the higher level, and acting as a kerb to the 1b level road metalling. Plate LXIII, fig. 1, shows a complete example of such a threshold at the 1b level, found at the north gate of no. 50 (High House) in 1911.<sup>30</sup> As at no. 22, the upper pivot at the east side was missing; here, however, its absence was due to the masonry of the pier being one course lower than at the west side. There was no evidence of building up, either partial or complete, but the 1b surface was too near that of the modern road for any remains of masonry built upon it to have survived.<sup>31</sup>

*The Turrets* (fig. 9).—Nos. 12a and b could not be excavated completely. At 12a the walls were reduced to ground level beyond the edge of the roadway (plate LXII, fig. 2), and 12b lay largely below the road, which at that point was too narrow for the whole of the interior to be opened up. At none of the turrets was the north face of the Wall exposed, but a thickness of 9 feet 3 inches was measured between 12b and 13, and again between 13 and 13a, and may be taken as the standard for this sector.

The three turrets are nearly uniform in plan, their external measurement being the normal 20 Roman feet square: a new feature in turret construction is the

<sup>30</sup> CW, 2nd ser., XIII, p. 319.

<sup>31</sup> The nearness of this milecastle to the fort of Rudchester-Vindobala (with a gateway additional to those provided by the milecastle system), and the unworn state of the 1b pivot-hole, admit the possibility that this entrance was closed soon after the 1b renovation. (Cf. footnote 26.)

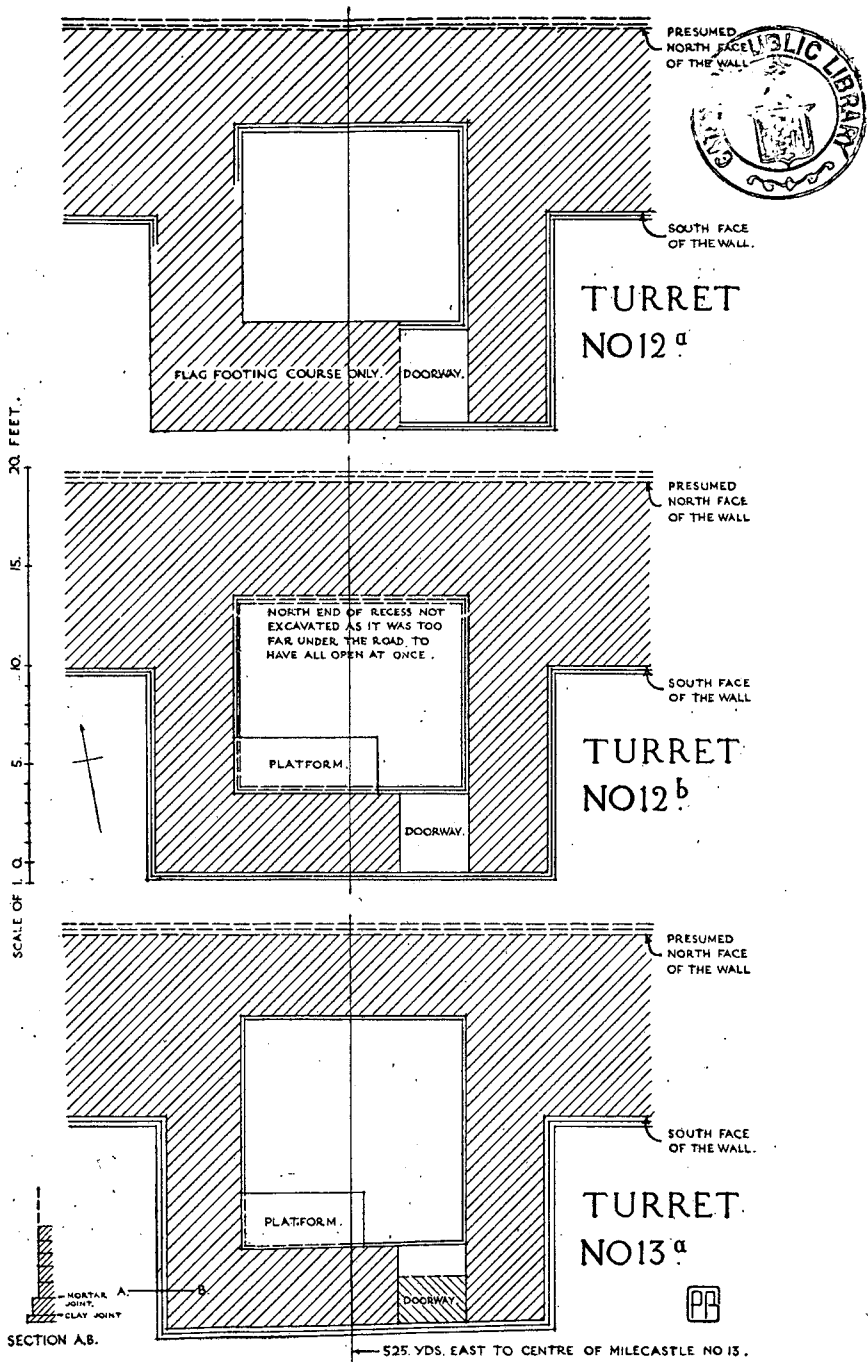


Fig. 9.

finished thickness of 4 feet throughout the side walls, as opposed to the normal thickness of 3 feet or thereabouts. One turret (29a, Blackcarts) has walls 3 feet 7 inches thick;<sup>32</sup> otherwise 3 feet 3 inches is the greatest thickness.

The doorways are in the normal position; the jambs have not been faced with stone slabs such as were found at 26b (Brunton), 29a, and 29b (Limestone Bank). In 12b and 13a rectangular platforms occupied the south side of the interior; 12a was too badly robbed for any trace of a platform to survive. The masonry of all three turrets is of similar quality, roughly finished, but solidly built with an abundance of good mortar.

#### CONCLUSIONS.

What alone needs to be emphasized at this stage of the inquiry is the fact that the structures examined in 1930 furnished further evidence of the recurring differences in detail of plan and section referred to in the introduction. It may be added that the new evidence strengthens the impression that the differences between the milecastles may finally identify the mile as the larger unit of length in a scheme of sectional building. The Vallum crossings, which are now generally believed to have been made to facilitate the building of the Wall, have already furnished evidence in support of the mile unit. In the Shield on the Wall (west) to Cawfields sector, a series of thirty-two normally spaced crossings is interrupted in both directions by irregular spacing—to the west by one short interval, and to the east by three long intervals—beyond which normal spacing begins again. The full length of the thirty-two normal intervals, plus the three long ones, is 1,617 yards; that is, a Roman mile all but one yard.<sup>33</sup> The significant feature is the position of these odd lengths: they are almost due south of the milecastles terminating

<sup>32</sup> AA, 3rd ser., IX, p. 70.

<sup>33</sup> CW, 2nd ser., XXII, pp. 408-9.

that particular mile length, nos. 41 and 42, which on the less direct course of the Wall are 1,641 yards apart. Equally significant is the evidence from the unique "long mile" of 2,058 yards between milecastles 7 and 8:<sup>34</sup> in this "mile," the number of crossings was the same as in a standard mile, the intervals being increased from about 45 to about 60 yards.

I am grateful to Mr. Birley for helpful criticism of my part of this report, and to Mr. Parker Brewis for the surveying and planning of the milecastles and turrets. Mr. Birley directed the excavation of the interior of each turret, and his report follows.

## THE STRATIFICATION.

BY ERIC BIRLEY.

At neither milecastle were stratified deposits recovered, but each of the three turrets produced some stratification. At 12a and b, the whole area of the interior could not be examined, whilst the upper levels had been destroyed; 13a, however, was better preserved: the second-period floor remained, with the lower part of its "platform," and a few scraps of pottery lying on it. (Plate LXIV, fig. 1.) Below was a mass of *débris*, including a number of fallen facing stones, covering and in places partly piercing the earlier occupation levels. The original floor had been made up with layers of clean clay three or perhaps four times during the first period. Before the first making up, there had apparently been no "platform," for an occupation layer (containing some scraps of pottery) underlay the structure of this period; the purpose of these "platforms" remains uncertain, though their invariable proximity to

<sup>34</sup> NCH XIII, pp. 528 and 538.

hearths suggests that they were in some way connected with cooking (as seats, dressers, or the like) rather than the traditional "bases for ladders." (Plate LXIV, fig. 2.)

As at 7b, the first floor of each of these turrets was formed by a layer of clay, nearly a foot thick; this covered a layer of masons' chippings. The foundations of the walls rested on undisturbed clay, down to which the foundation trench had been dug; elsewhere inside the buildings, the soil had not been removed, and the layer of chippings covered it.

*The Pottery.*—The total yield of pottery was not very great, and only three pieces require illustration (fig. 10):

1. (12a; unstratified.) Part of a small cup or bowl, with faint reeding on its inward sloping rim. Hard, blue-grey ware.
2. (13a; period I.) About half the rim, and part of the wall, of a wide mouthed jar. Lightly fumed, grey ware.
3. (13a; period I.) Three fragments from a somewhat similar jar. Hard, fumed ware. This vessel is similar in general type to one from milecastle 10 (cf. AA, 4th series, VII, plate LIII, no. 43), like which it might be taken as providing additional evidence of that "Celtic revival" that has been recognized as occurring in the second century. The type was not represented in the pottery of this period at Birdoswald.

12a. Little pottery was found here. Samian was represented by two fragments of 18/31, "rustic" ware by one fragment; a cooking pot rim similar to no. 15 from turret 7b (AA, 4th ser., VII, plate LI, a third century piece), and a chip from a mortarium of the hammer-head type, indicate third and possibly fourth century occupation; but no Huntcliff ware was found. There was also part of the base and wall of a cooking pot in the usual fabric, but, unusually, completely wheel made.

12b. The pottery from this turret has unfortunately been mislaid; it included part of a samian platter, 18/31, with potter's stamp, and a fragment of Antonine figured samian.

13. The digging done here on 23rd February, 1931, produced a rim-fragment from a cooking pot of the early fourth century type figured, and discussed in my report on the excavations at Chesterholm-Vindolanda (p. 199 above).

13a. Apart from nos. 2 and 3 above, there was little pottery of note from this turret, except the greater part of an amphora without neck or handles, similar to one found at the Haltwhistle Burn fort (AA, 3rd ser., V, p. 265); also of the first period was



FIG. 1—SOUTH FACE OF THE WALL BETWEEN TURRET NO. 39B  
AND MILECASTLE NO. 40.

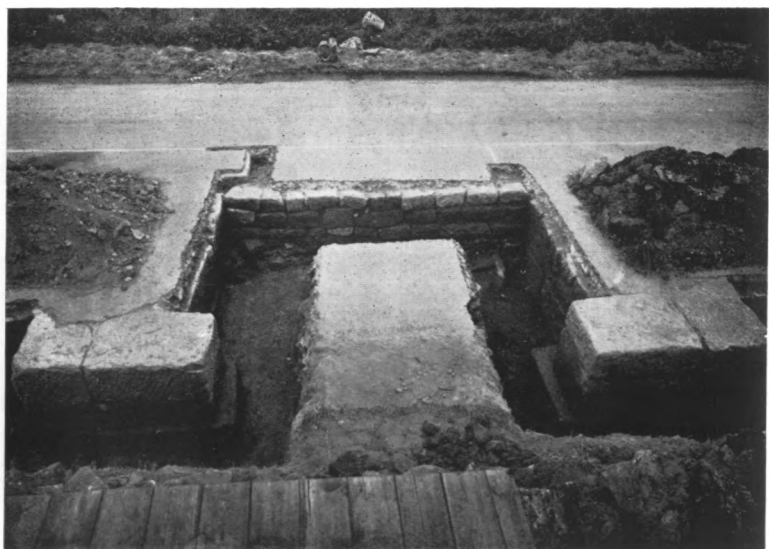


FIG. 2—MILECASTLE NO. 22 : NORTH GATEWAY WITH ENTRANCE BUILT UP ;  
FROM THE SOUTH.

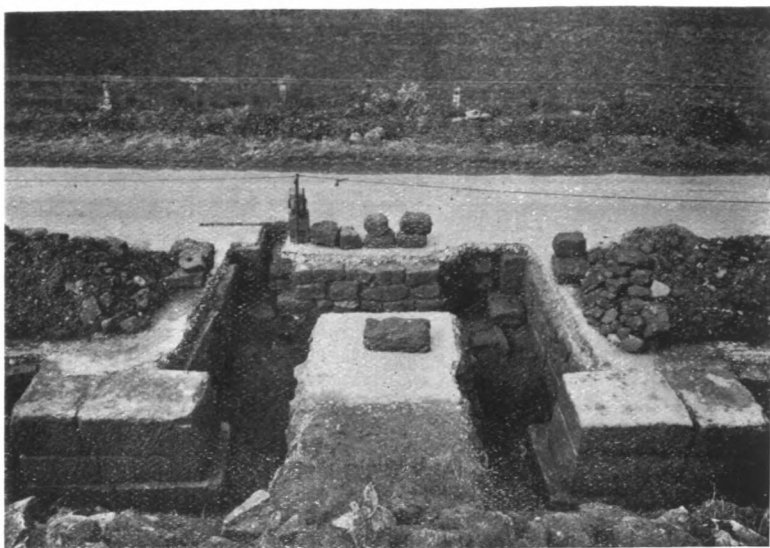


FIG. 1—MILECASTLE NO. 22 ; NORTH GATEWAY, SHOWING 1A PIVOT-STONES.



FIG. 2—MILECASTLE NO. 22 ;  
1B PIVOT-STONE AT WEST SIDE.



FIG. 3—MILECASTLE NO. 22 ;  
1A PIVOT-STONE AT EAST SIDE.





FIG. 1—NORTH FACE OF THE WALL WITH OFFSET THREE COURSES ABOVE FOOTING FLAGS, EAST OF MILECASTLE NO. 48.



FIG. 2—INNER FACE OF WEST WALL OF MILECASTLE NO. 48, WITH A SIMILAR OFFSET TO THAT IN FIG. 1; AND WEST BUILDING; FROM THE NORTH.



FIG. 1—MILECASTLE NO. 13 ; NORTH GATEWAY, FROM THE NORTH-WEST.



FIG. 2—MILECASTLE NO. 13 ; 1B PIVOT-STONE AND REMAINING STONE OF THRESHOLD.

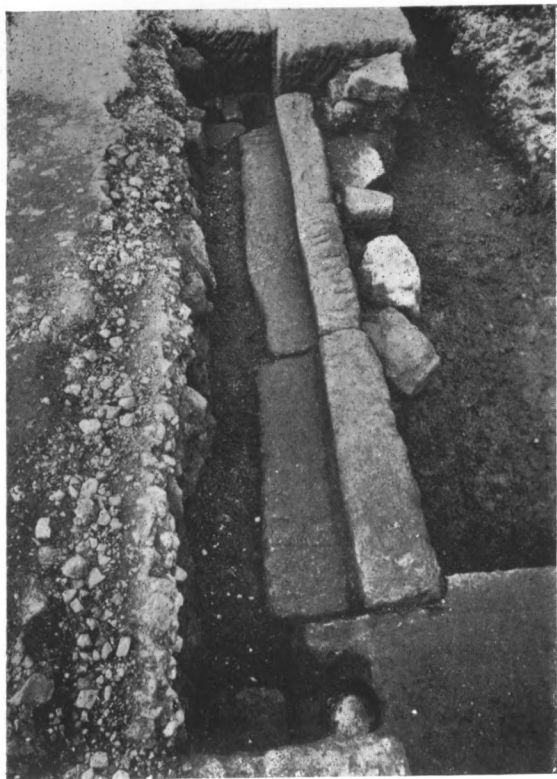


FIG. 1—MILECASTLE NO. 13 ; IA THRESHOLD AND PIVOT-HOLES.



FIG. 2—INTERIOR OF TURRET NO. 12A,  
FROM THE WEST.



FIG. 1—MILECASTLE NO. 50 ; NORTH GATEWAY, FROM THE NORTH-WEST.



FIG. 2—TURRET NO. 13A, FROM THE SOUTH-EAST.



FIG. 1—TURRET NO. 13A ; REMAINS OF SECOND PERIOD PLATFORM.



FIG. 2—TURRET NO. 13A : FIRST PERIOD PLATFORM.



part of the base and wall of a jar in very coarse, gritty ware, slightly pitted on the outside, and at first sight resembling Huntcliff ware; the occurrence of such a fabric in a second-century level is noteworthy. Two samian platters, 18/31, were represented, and from outside the turret came part of the rim and wall of a hard, grey "rustic" cooking pot.

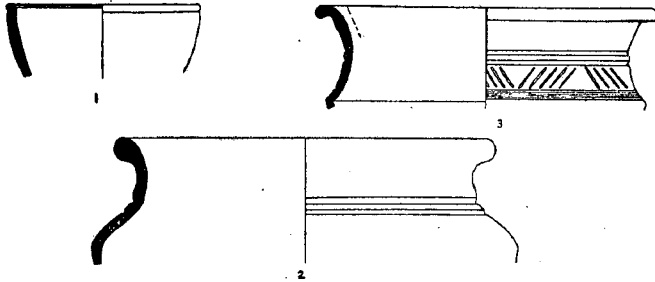


Fig. 10 (4).

Mineral coal was found at each of these sites, with the exception of 12a; at 13a the coal had been in use in the first period.

22. Very little pottery was found here, and none of it requires publication.