X.—THE ROMAN FORT ON THE STANEGATE AT HALTWHISTLE BURN.

By J. Pattison Gibson, a vice-president, and
F. Gerald Simpson.

[Read on the 25th November, 1908.]

HISTORY.

The Fort is situated on the east or left bank of the Haltwhistle burn, the centre of the Fort being 150 yards to the north of the Newcastle and Carlisle road, made by General Wade in 1751, and 100 yards to the east of the burn. The site is naturally strong, notwithstanding the fact that the platform of the Fort is lower than the surrounding country, especially that to the south-east. The steep bank of the Haltwhistle burn forms the western defence, the platform being 65 ft. above the normal level of the stream. A small tributary of the burn, flowing in a deep cutting, is the natural defence on the south. On the north is a similar watercourse, which has been widened and deepened to form the north ditch of the Fort. The east side is undoubtedly weak, and that this was the view of the builders seems proved by the fact that the ditch is nearest to the rampart on this side. The centre of the Fort is 619·5 ft. above sea-level. The modern history of it is short, but of sufficient interest to us to call for its reproduction here in full. Warburton alone of the early antiquaries makes reference to it, the probable reason for this neglect being the trackless state of the Haltwhistle common before its enclosure in 1844. Although Warburton's *Vallum Romanum* was not published until 1751, we find from the preface that his map is of much earlier date. He surveyed the Wall district, evidently with great care, in 1715, publishing the report and map in 1716. It is a surprise to find that a map, so much

superior to Horsley's, was in existence nearly twenty years before the *Britannia Romana* was published. In it the course of the Stanegate is well shown and the Fort marked as 'A Roman Fort.' There is no reference to it, however, in the text.

Horsley evidently did not traverse this portion of the country, for the course of the Stanegate, called by him the Military Way, is shown on his map of the Wall, published in 1732, in a very conventional manner. Even the rev. John Hodgson makes no reference to it in his *History of Northumberland*, published in 1840, although he points out the course of the Stanegate very carefully. The Ordnance Survey of 1849 must be credited with its re-discovery. In the first edition (1851) of *The Roman Wall*, on p. 252, Dr. Bruce says—'A road leads from the vicinity of the mile-castle [Cawfields] to the town of Haltwhistle . . . . . At the point where the path joins the modern military road, a Roman camp will be observed. On the sides which are most exposed, double and triple lines of earth-works have been raised. The rock on the western face of the ground where the camp stands, has been wrought by the Romans for stones, and the camp has given them temporary protection. It was here that the inscription on the face of the rock, LEG·VI·V, was discovered in 1844, . . . The quarry, not being required for the use of the district, was shortly afterwards closed.' The site is also shown on the plan of the watercourse near AESICA, facing p. 257. It is here called '*Temporary Camp.*' There is a slight indication of the course of the Stanegate at the south-east angle, which may have suggested the idea of extra defensive earthworks. For details of the discovery of the sixth legion inscription, we must refer to a paper by Mr. John Clayton in the *Archaeologia Aeliana*, 1st S., vol IV, p. 57. Mr. Clayton says—'In riding over Haltwhistle Fell, before its enclosure in the summer of 1844, I came upon some workmen employed in re-opening an old quarry; they told me they had met with a "written stone." I dismounted

from my horse, and climbed the face of the rock, where I found inscribed in letters very clear and fresh, LEG·VI·V. From its position on a wide waste, far removed from any abode of man, but in the immediate vicinity of the Roman Barriers, this quarry could not possibly have been used for any other purpose than for the supply of stones for them, and from the freshness of the letters of the inscription, must have been filled up with earth

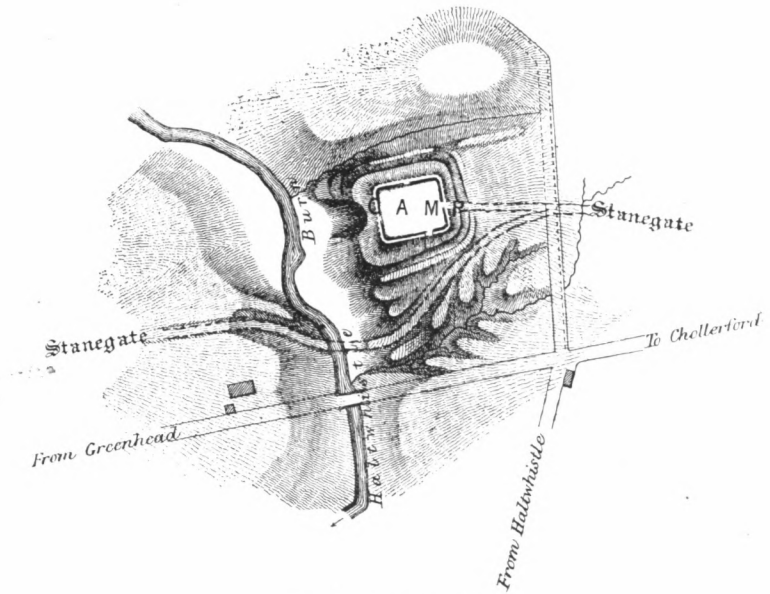


FIG. 1. PLAN OF FORT.

so soon as the Roman soldiers ceased to use it. The workmen promised to spare the written rock; but the next time I rode that way, it had been shivered to atoms.' It will be observed that Mr. Clayton makes no allusion to the existence of a camp. We come next to the most important source of information, the *Memoir of the Survey of the Wall*, made by Maclauchlan, in the

years 1852-1854. On p. 46, we read 'The camp is not very perfect, but enough remains to show that it was probably made by the Romans, being rectangular, with the north and south fronts about 66 yards each side, the east and west about 55, containing about half an acre. The defences on all sides, except the east, are natural and good, but that side has undergone so much alteration as to make it difficult to ascertain the number of ditches precisely. As the Roman Way runs towards the camp from the eastward, and there are traces of a gateway, it is probable that a branch entered on that side; the continuation of the way, descending the side of the burn, on the south of the camp and a similar oblique flexure ascending the opposite side, a little above the bridge, seem to point to a connection between the camp and the road; some traces also of a road from the south gate appear to confirm the supposition. It does not seem that there was any gate either in the west front, or the north.' The map accompanying the *Memoir* gives us further information. On sheet III, an enlarged plan of the site is given, the scale being 10 ins. to the mile (see fig. 1). The ditch on the north front is shown at 50 ft. from the rampart, with the north mound on its outer edge; the watercourse being considered as a natural defence only. As will be shown, the reverse is the case; the watercourse being the north ditch, nearly 100 ft. from the rampart, with the mound on its inner edge. In the third edition of *The Roman Wall*, 1867, on p. 231, Dr. Bruce again refers to the site, quoting Maclauchlan and Mr. John Clayton, as above. The next reference will be found in a paper by Mr. Sheriton Holmes, entitled 'The Roman Bridges across the North Tyne River near Chollerford,' in *Archaeologia Aeliana*, vol. XVI, 1894. On p. 336, we read 'The earliest line of works would appear to be the "Stanegate" and the camps on its line which were probably those instituted by Agricola about the year 78. . . . it [the Stanegate] passes to the north of Fourstones and through Newbrough, and

PLATE 1

GENERAL PLAN OF FORT AND DISTRICT

SCALE
208·33 FT. = ONE INCH

F. 0 100 500
M. 0 50 150

TO AESICA

WATER-MILL
1907

THE WALL

CAWFIELDS
MILE-CASTLE

O.S. COURSE

TRACED 1908

TO BORCOVICUS

THE VALLUM

THE MILITARY WAY

HALTWHISTLE
BURN

NO. 1

NO. 2

1

2

TRACED 1907

TO VINDOLANA

O.S. COURSE

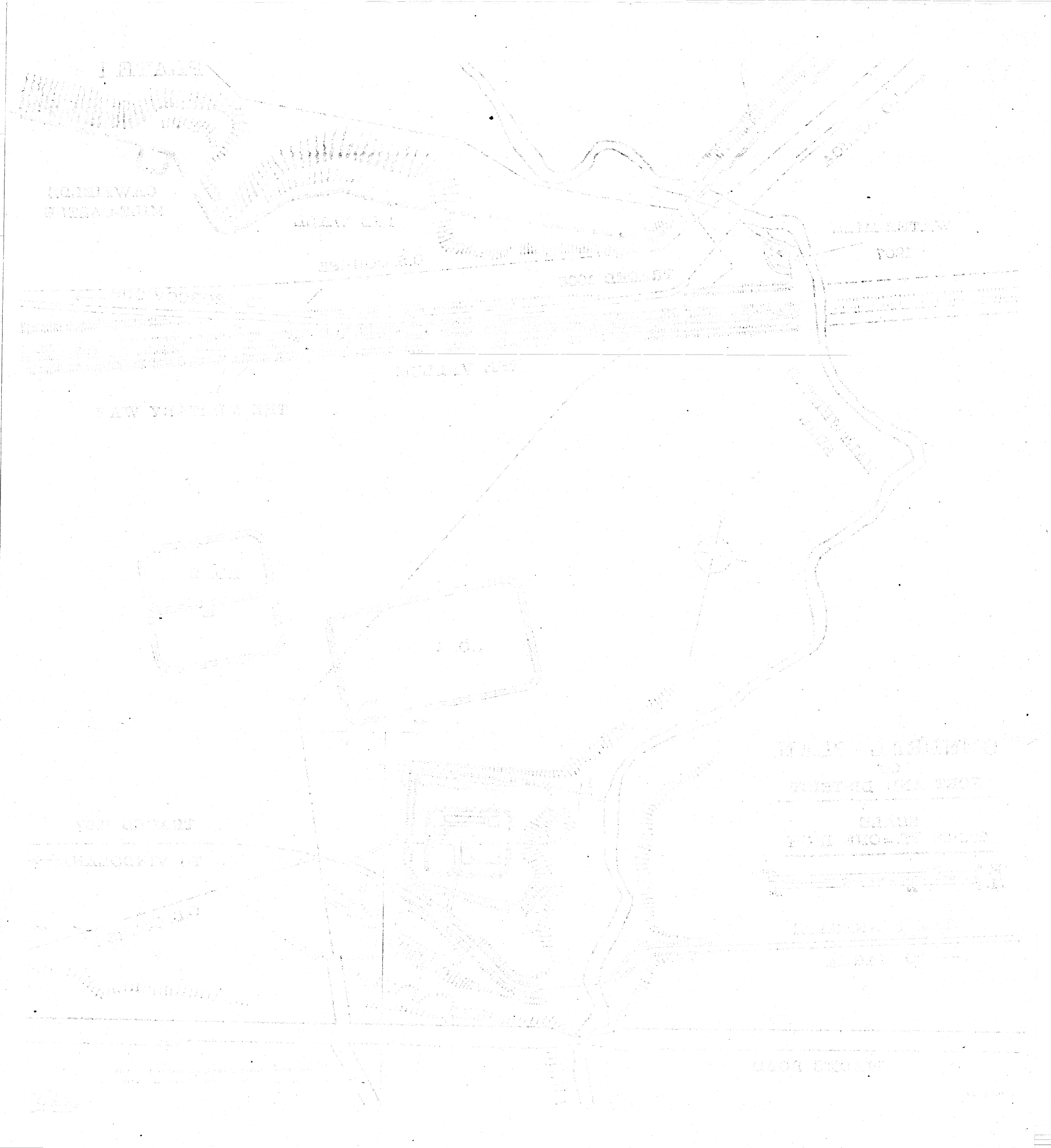
THE STANEGATE

TO MAGNA

WADE'S ROAD

1907-8

F.G.S.



in a very direct course to Chesterholm, where is the important station of *Vindolana*, and hence along to a considerable camp which is seated on the eastern edge of the Haltwhistle burn. Crossing this it goes over the summit of the hill at Sunnyrig. . . Then falling down it makes direct for Caervoran (*Magna*).' That Dr. Bruce held the same opinion as to the date of the Stanegate, is shown by his statement to that effect on p. 77 of the *Roman Wall* (third edition). A further reference will be found in the *History of Northumberland*, by Mr. C. J. Bates, 1895. In discussing the tables of the Ravenna Geographer, as affecting the north of England, on p. 19, Mr. Bates gives the following list:—

Valteris	...	...	Brough
Bereda	...	...	Old Penrith
Lugubalum	...	...	Carlisle
Magnis	...	...	Carvoran
Gabaglanda	...	...	On Haltwhistle Burn (?)
Vindolande	...	...	Little Chesters
Lineojugla	...	...	Settlingstones (?)
Vinovia	...	...	Binchester
Lavaris	...	...	Bowes

He then says 'The two of these forts that are positively known to be in Northumberland, Magnæ and Vindolana, lie on the Roman road known in the Middle Ages as the "Stanegate" or "Carelgate" . . . . There seems no more reason for confounding Gabaglanda with Amboglanna, the other name of Birdoswald, than with Glannibanta . . . . ; many of these barbarous names have much the same ring above them, and the interesting camp that guarded the bridge by which the Stanegate crossed Haltwhistle Burn certainly deserved a name.'

The last reference is taken from an article in *The Builder*, vol. LXXII, no. 2837, June 19, 1897. On p. 543, there is the

following paragraph: 'Deep down in the glen below, the Haltwhistle burn rushes dark and full of the peaty waters from the moorland wastes where it takes its source. Close to the bridge by which Wade's road crosses the stream are seen the lines of an important Roman camp yet unexcavated, which may furnish future explorers with interesting evidence as to the nature of the Roman occupation of the north of England before the building of the Wall, it having been made to defend the defile of the Haltwhistle burn before the erection of the Wall and the camp of AESICA on its north side, which would render it useless and cause its abandonment. Passing alongside the steep southern rampart of this camp, and crossing the burn at a ford, may be traced the line of the Stanegate, an early Roman road in existence long before either Vallum or Murus.'

SITE AND SURROUNDINGS.

The Ordnance Survey, ed. 1896, section LXXXIII, no. 13, scale 25 ins., gives a careful plan of the site. The course of the Stanegate is clearly indicated, except that to the east, where following Maclauchlan, the line is shown to the south of its true position. The watercourses on the north and south are not indicated, having been enclosed in pipes since the time of Maclauchlan's survey, but the north ditch is correctly shown with the mound on its south edge. The irregularity of this mound is clearly indicated. The rampart is continuous, the position of the gates not being given. Lastly, the 'marching' camps, lying to the north and north-east, are not laid down.

The appearance of the site and surroundings before the excavations were commenced may now be described. The mound and ditch of the Stanegate, with the double curve designed to minimize the gradient, on the east bank of the burn, cannot fail to attract attention. The most notable feature of the Fort is the size and perfect state of the ditch on the south

side. Between the south causeway and the west end of the ditch, it is from 23 ft. to 25 ft. wide and about 6 ft. 6 ins. deep. Between the causeways it is badly silted up (section c d, plate III), there being no outlet for water until drains were recently cut. The north ditch, which is of still larger size, is also silted up on account of the washing down of the mound on its south edge (section KL, plate III). The formidable appearance of the ditch contrasts strongly with the slight remains of the rampart. Within the Fort, slight mounds indicated the position of site I and site II. Examination of the quarry on the west side of the Fort showed that the extent of the Roman workings was much greater than that of the operations of seventy years ago. The undisturbed portion is entirely overgrown, the rock being nowhere visible; but in the re-opened portion the rock can be seen in several places. The sides have slipped considerably since 1844, almost exposing the foundations of the west rampart. The southern half of the quarry has been deepened, the remainder being covered by two heaps of 'baring.' The details are shown on the plan (plate II). The position of the inscription may thus be very nearly ascertained.

A few yards higher up the burn and also on the east side, is another quarry where, before the enclosure of the common, an outcrop of coal, ironstone and limestone, locally called 'blackband,' was worked. The same outcrop has been more extensively worked a quarter of a mile to the east. Coal was found in the Fort at the Roman level, from which we may safely infer that this or another local outcrop was worked by the garrison. Other mounds in the vicinity of the Fort are modern, with one exception, and testify to the wealth of limestone, freestone and minerals in the neighbourhood. This one exception is a continuation of the mound of upcast on the south side of the north ditch. It appears to have extended originally to the edge of the stream and to have served as a protective rampart for those

working in the quarry. This will be further considered on p. 228. Many well-known landmarks can be seen in the various illustrations. Winshields (1,230 ft.) and Cawfields Crags, over which the Wall is carried, appear in figs. 4, 9 and 12. AESICA, at a distance of three-quarters of a mile, is indicated by the white farmhouse of Great Chesters, in figs. 5, 6, 10 and 15. The 'Nine Nicks of Thirlwall' can also be seen in figs. 5 and 6.

GENERAL ACCOUNT OF THE EXCAVATIONS.

About four years ago the question of excavation was discussed, but the matter was not proceeded with until early in 1907, when the excavation committee was re-appointed. Mrs. Clayton very kindly and readily gave permission for the work to be undertaken. The tenant of Cawfields farm, Mr. William Oliver, gave us every assistance, and our best thanks are due to him for his kindness.

It was resolved, before commencing operations, that no work should be done except under personal supervision. To ensure this, work was suspended entirely on two occasions, for intervals of two months. The periods of work in 1907 were from April 8th to 20th, from June 17th to July 17th, and lastly from Sept. 24th to Oct. 27th. Excavations inside the Fort were completed on the latter date. The work of filling-in was commenced on Nov. 15th, and finished on Feb. 7th, 1908.

During the first and second periods four men were employed and afterwards one only. In the summer of 1908 attention was given to the ditch, the roads, and to several other points which required explanation. Throughout, local men have been employed, who have given every satisfaction. During the earlier periods, Mr. John Smith of Broomshaw hill, near Haltwhistle, was our foreman; his experience gained during the excavations at AESICA in 1897 was very valuable. A large amount of work was done during the first period. The existence of stone in the

ramparts and internal buildings was made clear after two days' work. Sites I and II were located, and the former completely excavated. The whole of the inner face of the north rampart-wall was cleared, proving that no gate existed on that side. A trench across the west rampart laid bare the south return or side-wall of the west gate. Both the south and east gates were discovered by working along the inner face of the rampart-wall. In the same way the whole of that wall between the gates, including the south-east angle, was opened out. Trenches were cut across the roads approaching the gates, and a large section made through the Stanegate opposite the south causeway. A barbed wire fence was erected, entirely surrounding the Fort, in order that we might suspend work without fear of damage by cattle. During this period, no trace of the outer face of the rampart-wall was found, the cobble foundations alone remaining. Time was found for the excavation of a small building which abuts upon the south face of the Wall on Cawfields crags, 140 yards west of the mile-castle. It is obviously a medieval or later erection, and not a wall-turret, as hitherto supposed. A separate report of this building will be published. During the second period much more information was gained with less labour. Sites III, IV and V were located and further work done at site II. The scanty remains of the outer face of the rampart-wall were found at the south gate, at the south-west angle and on the north face. The gateways were completely excavated, enough remaining at the south gate to make clear its original form. At the east gate, though many of the details remaining in that at the south were absent, an additional feature of great interest was a wall which had been built across the roadway during the occupation of the Fort, entirely closing the entrance. The drains at the north-west and south-west angles, as well as the hearth at the latter, explained the absence of the usual angle towers. The west gate was also fully opened

out. Work was done outside the Fort, including the discovery of the true course of the Stanegate towards VINDOLANA; and the examination of the 'marching' camps lying to the north and north-east. Lastly, a water-mill of Roman date was found between the lines of the Vallum and the Wall, on the east bank of the stream, at Burnhead, a report of which will appear shortly.

In September, professor Haverfield, at a meeting of this society, urged that further search for internal buildings should be made, especially in the middle of the Fort. In the last period we were successful in the discovery of site VI, but no trace of any building could be found in the south-east portion of the Fort. During further attempts to complete site V, the buttresses on the west side of site IV were laid bare. The last discovery was that of the oven. In September, during our absence, portions of the remains were wantonly thrown down, among them being the drain at the south-west angle, and the south return of the west gate. Fortunately the photographs and measurements had already been taken.

In 1908, a further attempt was made to discover buildings in the south-east portion of the Fort, but again without success. Sections of the ditch were then made and afterwards the course of the road from the south gate was traced. Finally, two further sections of the Stanegate were cut. It may be stated here that no well was found, nor were traces of a water supply of any kind. This is not to be wondered at, considering that an ample supply of water is furnished by the burn, running close under the west rampart, only a few yards distant from the west gate.

The work done at the 'marching' camps was as follows: In the larger camp (no. 1, plate I), a section was cut through the rampart and ditch (YZ, plate IV) and another through the gateway and traverse. In the smaller camp (no. 2, plate I),

the junction of the ditches of the inner and outer enclosures, on the east side, was examined. These camps are now planned for the first time on plate I.

DIMENSIONS AND PROPORTIONS.

The form of the Fort is a slightly irregular oblong. The east and west faces are equal, 167 ft. 6 ins. long. The north face is 212 ft. long, but the south face is 203 ft. only. The angles of the Fort are rounded in the usual manner, the radius of the outer face of the wall being 27 ft. 6 ins. in each case. The area, including the ramparts, is thus 3 r. 1 p. or ·758 ac. The above irregularity was unknown before the excavations and it was not very evident during their progress, but it is clearly seen when planned. No reason can be advanced to account for this feature. There is a similar irregularity at the west angle of the Fort at South Shields (*Arch. Ael.*, vol. X, p. 230). The proportion of length to breadth is almost the same as in the case of AESICA, the breadth being four-fifths of the length. The east gate is exactly in the centre of the face, and is the praetorian gate of the Fort. The west gate is rather to the south of the centre, being 82 ft. from the south face. The south gate is 76 ft. from the east face, and there is no north gate. The *Praetentura* or area enclosed between the *via principalis* and the east rampart is therefore 36·6% of the whole area of the Fort. This may be compared with 31·6 % in the case of AESICA, and 35·1 % at BORCOVICUS. In his report on the Roman Fort of Gellygaer, Mr. J. Ward, F.S.A., gives (p. 8) a much fuller list of comparative dimensions. It will be seen from the plan (plate II) that the ditch, though regular in itself, is extremely irregular in its relation to the rampart. At the south-east angle the berm is 18 ft. wide, which is its narrowest measurement. At the south causeway it is 29 ft. wide. Its width increases so rapidly that opposite the south-

west angle it is a gently sloping platform 60 ft. broad. On the east side the ditch is more nearly parallel to the rampart. The berm is 28 ft. wide at the east causeway and 24 ft. at the north-east angle. It will be observed that the portions of the ditch on each side of the causeway are not in a straight line. The space between the north rampart and the ditch can hardly be called a berm. It is 87 ft. wide opposite the north-east angle and 65 ft. opposite the north-west angle. About one-third of this space is occupied by the mound on the south side of the ditch. On the west face no ditch was required on acount of the steep descent to the burn. Apparently, before the quarry was worked, there would be a level space about 40 ft. wide along the whole of that side. The area enclosed by the ditch on three sides and by the steep bank on the west, is 1 ac. 3 r.

Over the greater portion of the area the subsoil of the site consists of stiff greyish clay, containing water-worn stones which have been largely utilized for the foundations of walls and roads, and which are termed 'cobbles' in this report. The clay is particularly strong over the eastern portion of the site, and consequently the surface of that portion is very damp except in the driest weather. Towards the south-west, the subsoil changes from clay to a brownish sandy gravel containing, like the clay, a large proportion of 'cobbles.' A line drawn from the west side of the south causeway to a point about 20 ft. south of the west gate, roughly denotes the end of the clay. Underlying both clay and gravel is the freestone rock which has been worked on the west side of the Fort. It is about 8 ft. below the surface at the face of the quarry. The freestone used in the Fort appears to have come from this quarry. It is of poor quality and is much decayed in the damp eastern portion of the Fort. The thinly-bedded flagstone so largely used in the inner face of the rampart-wall (p. 231), has probably been derived from an outcrop lower down the burn, where a large 'flag' quarry is worked at the present day.

PLATE II.

ROMAN FORT
ON THE STANEGATE AT HALTWHISTLE BURN.

DRAIN
III
II
OVEN
W
X
I
PAVED AREA
WEST GATE
PATH
VI
G
S
T
QUARRY
V
IV
R
Q
HEARTH
DRAIN
FLAGGING
EAST GATE
SOUTH GATE
g
h
H
e
f
B
P
L
C
D
O
N
b
a
d
c
A
THE STANEGATE
E
Y
W

FOUNDATIONS
UNEXCAVATED WALLS
CLAY BACKING
ROAD-METAL

FEET 0 10 20 30 40 50 60 70 80 90 100
METRES 0 5 10 20 30

SCALE: 30 FEET = ONE INCH.

1907-8.

J.G.S.

THE FORTIFICATIONS.

The Ditch.—Six trenches were cut across the ditch. The first was across the portion between the south causeway and the west end (section MN, plate IV). The fine preservation of this length has already been referred to. The trench showed that the original bottom was less than 15 ins. below the present surface. The width was 23 ft. 6 ins., and the full depth 7 ft. 6 ins. at this section. There is a fall along the bottom of 7 ft. 3 ins. between the causeway and the outlet, this quick slope accounting for the absence of any dark deposit at the bottom. The form of the ditch, as exposed in this trench, is typical of all except section c d (plate III). It is V-shaped and very slightly rounded at the bottom. There was no evidence in any trench of the uncommon shapes met with at Barhill (*Proc. Soc. Antiq. Scot.*, vol. XL, p. 430), or on the line of the Turf Wall near *Amboglanna* (*Proc. Cumb. and Westmor. Ant. and Arch. Soc.* vols. XIV and XV).

This trench was continued across the berm, here 42 ft. wide. The subsoil was undisturbed and no traces of extra ditches or pits were found. Other trenches across the berm showed a similar result. The second was 25 ft. east of the south causeway (section c d, plate III). The third was 25 ft. south of the east causeway (section e f, plate III). These trenches showed that there was a fall of 2 ft. 9 ins. towards the former. This continued fall, again in a westward direction, together with the fact that the depth of dark deposit or silt was 3 ft. 3 ins. in section c d, seemed to suggest that in the original design there would be a drain through the south causeway, which would effectually carry off all surface water. It may be mentioned that before the excavations began, it was suggested that the causeways were of more modern date than the ditch. Another trench was therefore made at right angles to the causeway. This showed that the causeway was original, being the natural

subsoil left undisturbed where the portions of the ditch on each side of it were dug. It also proved that no drain through it existed. At section c d, the width was 22 ft. and the depth 6 ft. 6 ins., though the bottom is much more rounded than in the other sections. The width at section e f was again 22 ft. and the depth 6 ft. 4 ins. The fourth trench was made 25 ft. north of the east causeway (section g h, plate III). The width here was 22 ft. and the depth 6 ft. The fifth was opposite the north-east angle (section AB, plate III), where the width was still 22 ft., but the depth increased to 6 ft. 6 ins. There was a fall along the bottom of 2 ft. 4 ins. in a northward direction, between these sections. In the last four trenches the silt deposit, which varied in depth from 4 ft. 10 ins. in section AB to 2 ft. in section e f, was of a uniform character. In each case the sides had slipped slightly, where the subsoil was soft. The silt contained a large amount of decayed vegetable matter. In section c d it had the appearance and colour of peat. Contrary to usual experience, not a fragment of pottery or building stone, or anything connected with the occupation of the Fort, was found. The only recorded 'find' from the ditch was a two-handled *dolium*, discovered near the west end, when drains were being laid in 1880, one handle of which appears at the right-hand side of fig. 17. The most interesting portion of the ditch is that on the north. On its south edge is an irregular mound, which it was thought formed the rampart of an outer enclosure or annexe. As already mentioned, Maclauchlan shows a ditch between this mound and the north rampart, in his plan of the Fort (fig. 1), the actual ditch appearing as a watercourse only. The results of the work clearly indicate that the latter is partly natural and partly artificial, or in other words that an existing watercourse was utilized by the builders of the Fort. Two trenches across the space between mound and rampart proved that no inner ditch existed. Below the turf, the subsoil was

quite undisturbed. Nothing whatever was found to explain the use of this space. Considering the ditch and mound together, it will be seen that at the east end, where the ditch is not more than 30 ft. wide, the mound is greatest. A trench at this point showed that the mound was about 40 ft. broad at the base and 3 ft. 9 ins. high (*max.*), above the old surface. It was composed of material similar to the general subsoil, but in addition, near the top on the south side, was a clearly-defined mass of coal shale. The ditch increases but the mound decreases towards the west. A second trench through the mound was made 80 ft. from the first (section KL, plate III). Here it was about 35 ft. broad and 3 ft. high (*max.*), while the width of the ditch had increased to 33 ft. The coal shale was again met with in the same position as in the first trench. The mound was not cut through again; but the following results are given by the surface levels. At section OP (plate IV), the mound is only 23 ft. broad and 2 ft. 3 ins. high (*max.*), the ditch being 36 ft. wide. At section FD (plate III), the former is further reduced to 20 ft. broad and little more than 1 ft. high, while the latter now measures 40 ft. in width. Finally, at the west end, the mound disappears entirely. The termination of the ditch is a natural gap over 50 ft. wide which appears to have been deepened and made V-shaped at the bottom. The last trench across the ditch was made at section KL (plate III). This explained the presence of the shale in the mound. The silt, which was 5 ft. in depth, was composed as usual of decayed matter, but with a large addition of material washed down from the mound. The bottom of the present depression is nearly 3 ft. to the north of the bottom of the ditch when excavated, owing to the material being washed down from one side only. The subsoil is the usual clay, except near the bottom on the south side, where the ditch is cut along the face of a bed of coal-shale. An ironstone nodule was found near the

bottom. The face of the shale runs east and west in line with the old workings to the eastward. The ditch at this point was 33 ft. wide and 8 ft. 10 ins. deep, measured from the north lip. From the top of the mound the full depth was 11 ft. 6 ins. The fact that the old surface at the south side is more than a foot lower than at the north probably explains why the upcast was placed on the inside, instead of on the outside, as usual. It thus appears that the mound was a heap of upcast only, which had not been definitely arranged in the form of a rampart. At the north-east corner, the two portions of the ditch meet almost at a point, instead of in the usual curve. The actual junction could not be examined on account of three converging drains. This feature is a further argument in favour of a pre-existing watercourse. At the foot of the steep bank, a mound already referred to (p. 219), crosses the low ground towards the bank of the stream. It is almost in line with the mound above. A trench (section 1, plate 1) showed that it was composed entirely of shale, laid on small stones. It was 18 ft. wide at the base and 3 ft. high above the stones. On the north side there is a depression, denoting the old watercourse. It has not been shaped artificially at this point. The top of the mound is about 7 ft. above the bottom of the depression at present. The waggon-way from Cawfields quarry destroys the mound near the edge of the stream. The absence of a well inside the Fort would necessitate a safe approach to the burn; also while the quarry was being worked, attack from the north would have to be guarded against. It seems probable that this mound furnished the north defence, while the mound of the Stanegate fulfilled the same purpose on the south.

The Rampart.—Before describing the rampart in detail, it may be well to refer to the different types met with on Roman sites in Britain. These fall into three classes:

1. Earth or turf, with or without a stone foundation.
2. Simple masonry wall.
3. Composite, or combined masonry and earthwork.

For the present purpose, we may neglect the first class.

As the result of modern research, and in particular, of the excavation of the Fort at Gellygaer, we may divide the third class into two sub-sections:

1. In which the masonry and earthwork are constructed at the same time.
2. In which the masonry is an addition, of later date.

At the present time, two examples only can be placed in the former sub-section, Gellygaer and the Fort at Haltwhistle burn. There are many well-known examples belonging to the latter sub-section, and in addition several cases exist in which further examination is required before the question can be definitely settled. At BREMENIUM (*Arch. Ael.* 2nd S., vol. I, p. 70), and Melandra (*Melandra Castle*, p. 43) for instance, the question is not yet decided. Briefly described, the Gellygaer rampart consists of an outer wall 4 ft. thick, laid in courses on the outside but very irregular on the inside, with a backing of earth 13 ft. thick, which probably sloped inwards from the rampart-walk and the foot of which slope was retained by a second wall 3 ft. thick. The earth appeared to have been heaped up first, the outer wall built against it and the inner wall added last. Many points of detail proved clearly that these operations were consecutive and not the work of different periods. The probable height of the parapet was 15 ft. (For full report see *The Roman Fort of Gellygaer*, p. 35.) At Haltwhistle burn the total length of the outer wall, not including the gates, is 665 ft. Of this, 500 ft. of the inner, and 176 ft. of the outer face, were exposed by the excavations. The backing was cut through at right angles in nine places, as

well as at each of the gates. The construction of the wall is nearly uniform throughout. The foundations consist of a layer of cobble stones, packed closely in clay, the full width of the footing-course above. The top of the foundations appears to be level with the old surface, after the removal of the turf. The stones are large on the east and north faces where the subsoil is soft clay, but smaller near the south-west angle, where it is hard gravel. The footing-course is 3 ft. 3 ins. wide, except for some distance on the west, as described below. There was an offset on the outside, 3 ins. wide throughout. This course is composed on the outside, of squared freestone, the stones being 7 ins. deep, from 8 ins. to 12 ins. wide on the face, and from 10 ins. to 12 ins. long; and on the inside, of similar stone to that forming the inner face of the wall above. Near the south gate, the stones are well squared, but at the south-west angle, they are much rougher and several pieces of flag-stone are introduced. From the west gate, up to and including the south-west angle, the footing-course projects on the inside, forming an offset 6 ins. wide. There seems no reason for this addition, as the subsoil is very solid throughout this length. In all, only 57 ft. of the outer face of this course remains, but the inner face is present everywhere.

Of the wall built upon it, still less remains. Of the outer face, two portions only of the first course are left. At the west side of the south gate (figs. 2 and 4), eighteen stones are *in situ*, and at the south-west angle, four more were found (fig. 15). The thickness of the wall at these points was 3 ft., which may be taken as the general width. The stones of this course were all well squared, 6 ins. deep, from 6 ins. to 10 ins. wide, on the face, and from 10 ins. to 12 ins. long. They were wedge-shaped, narrowing from front to back, in the usual manner. The remains of the inner face were much more considerable. On the north, five courses and in some places six, remained

in situ, the greatest height above the foundations being 2 ft. 4 ins. On the east and south-east not more than three courses were left. On both sides of the south gate four and five courses were found, but near the south-west angle two only.

A good specimen of the walling of the inner face is shown at the south side of the west gate (fig. 6). It is 2 ft. 3 ins. high above the foundations. But on the north side of this gate the walling is particularly bad, as may be seen at the right hand side of the same photograph. It is generally composed of thinly-bedded freestone, commonly called 'flagstone,' from 3 ins. to 4 ins. thick, laid in irregular courses, but a small proportion of whinstone is used, especially in the west rampart.

There was no trace whatever of lime in this wall, nor in any building within the Fort, clay being used as mortar throughout. In the foundations, it was of a dark colour, but in the wall it resembled the clay of the backing. The space between the outer and inner facing stones was filled with broken pieces of freestone very tightly packed in clay. The inner face was perpendicular at some points, but had a slight batter at others. This batter may be the result of thrust from the backing on the inner face, after the removal of the outer face and the collapse of the interior of the wall. There were two openings in the outer-wall in addition to the three gates which were the outlets of drains, one at the north-west and the other at the south-west angle; but since the facing stones were all removed at these points, the drains may be considered independently of the rampart.

The important fact relating to the wall is that the inner face, though rough when compared with the outer face, is too well constructed to have been 'built against the earth-work' as at Gellygaer. The wall must have been built in the ordinary way, before the backing was placed in position. This is a practically conclusive proof that wall and backing

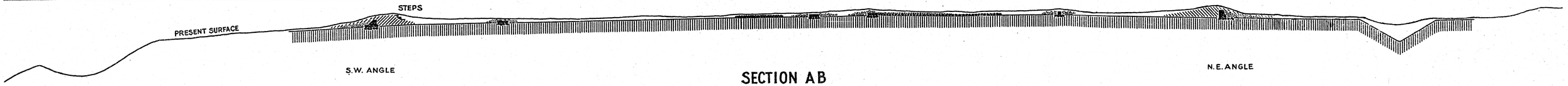
are contemporaneous, for a wall 3 ft. thick, without the backing would be quite useless for the purpose of a rampart.

The backing was clearly defined in all the trenches, but little remains unmixed with the surrounding soil except on the west face. There being no trace of a retaining wall on the inside of the backing as at Gellygaer, nor bottoming of any kind between it and the undisturbed subsoil, the question of its width at the base was a difficult one. The width shown on the plan is 8 ft. which is arrived at in the following way. The only structures which abut upon the inner face of the rampart-wall are the returns or side-walls of the west gate and the drains at the north-west and south-west angles. The side-walls meet the rampart-wall at right angles, and the drains are nearly radial to the curves of the angles. The projection inwards of all of these structures is very nearly equal. The side-walls are 8 ft. long; the drain at the north-west angle is 8 ft. 2 ins. long and the east and west walls of the second drain are 7 ft. 8 ins. and 8 ft. 1 in. respectively. There were no indications that any of the above structures had been longer originally. It is certain that the side-walls of the gate were not, for two squared corner-stones can be seen at the end of the south wall in figs. 6 and 7.

We may therefore take a width of 8 ft. as a fair estimate of the thickness of the backing at the base. It is probable that near the oven at the north-east angle, the width was increased to 9 ft. The material forming the backing was uniform throughout and consisted of greyish coloured clay, quite free from stones, and evidently puddled or worked in some way. On exposure, after excavation, it became much whiter and very tough. It was extremely difficult to dig through. It is evident that the whole of the upcast from the ditch was not used to form the backing. The mound represents the upcast from the ditch on the north. From the south causeway to the

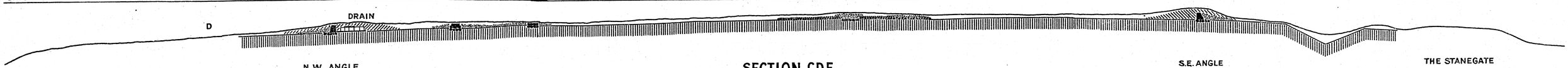
DATUM 624·22 FT. ABOVE O.S. DATUM.

PLATE III.



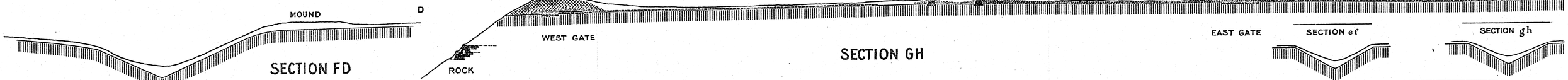
SECTION AB

DATUM



SECTION CDE

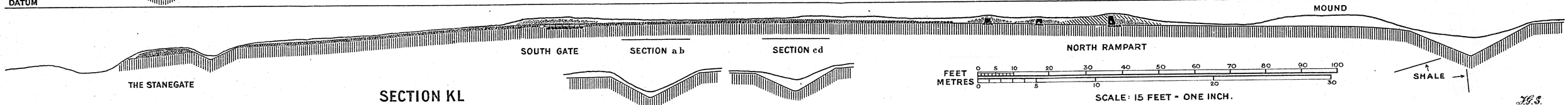
DATUM



SECTION FD

SECTION GH

DATUM



SECTION KL

SCALE: 15 FEET = ONE INCH.

H.S.

1907-8

west end, the ditch is cut through sandy gravel (p. 224), which must have been used for road-metal and foundations. The remaining portion of the ditch, from the south causeway to within 40 ft. of the north-east corner which is cut through clay, must therefore have furnished the material used in the backing of the rampart-wall. The original height of the rampart may now be considered. Since there is no retaining wall for the foot of the backing, as at Gellygaer, it must have sloped from the bottom. If soil was used, it would be unwise to suggest a greater slope than 40 degrees. Worked clay, however, will stand at a much steeper slope and an angle of 45 degrees may be taken as the minimum.

The sectional area of such a sloping bank, 8 ft. wide at the base, would be 32 sq. ft. Some provision must be made at the top for the rampart-walk. In several of the Forts on the line of the Wall, the walk could not exceed 3 ft. 6 ins. in width. If we allow this in the present case we are not underestimating. Of this width 1 ft. 6 ins. would be provided by reducing the wall at the top from 3 ft. to 1 ft. 6 ins. for the purpose of a parapet, and the remaining 2 ft. by cutting off the top of the suggested bank. This would reduce the sectional area of the bank to 30 sq. ft. The rampart-walk would then be 6 ft. from the ground. With a parapet 4 ft. high, the full height would thus be 10 ft. This calculation may be considered pure guesswork, but it is possible to test its accuracy in two ways. The first is to compare the existing remains with the suggested size. From the remains on the north, east and south sides, we learn little. The clay has no covering except the turf; consequently the continued action of water has removed a large portion of the bank. In no trench on these sides did the sectional area exceed 15 sq. ft. But on the west, we were helped by a remarkable circumstance. Over nearly the whole length of this rampart, a quantity of gravel and sandy soil has been deposited,

It is 2 ft. 3 ins. thick near the west gate, but gradually thins out and disappears within 20 ft. of each angle. We were able to ascertain that this was 'baring' from the top of the quarry a few feet away, by comparison with two heaps of similar material lying near the bottom (p. 219). Sections QR and ST (plate IV) explain its distribution. At section ST it completely covers the remains of the backing, thus preserving a much larger portion of the original bank. A careful measurement of the backing at this section gives an area of 21 sq. ft. on the inside of the wall. In addition, a considerable quantity of clay can be seen on the outside of the wall, mingled with the débris, having evidently fallen there when the wall was removed. This quantity may have been considerable and measures certainly not less than 4 or 5 sq. ft. A sectional area of at least 25 sq. ft. is thus accounted for. Section QR gives 20 sq. ft. on the inside, but the clay is not so well protected by the 'baring' as in section ST. The second test is a comparison of the quantity of clay required to form the backing of the rampart, with that available from the portion of the ditch, already referred to, which is cut through clay. The length of the rampart being 665 feet, 20,000 cubic ft. of backing would be required. The length of the ditch cut through clay is 310 ft. Its width is 22 ft., and average depth 6 ft. 5 ins. This would furnish 22,000 cubic feet of upcast, to which must be added about 2,200 cu. ft. provided by the foundation trenches of the gates and internal buildings, a total of 24,200 cu. ft., from which must be deducted the quantity of stone removed during the working of the clay. It will thus be seen that the above suggestion is within reasonable limits. The stone from both rampart-wall and internal buildings has been more completely and systematically removed than is usual in the case of Roman sites in the north of England. Several circumstances helped to prove that this removal took place in Roman times. Every

section of the rampart-wall showed that several courses of the inner face remained, while the outer face was generally cleared to the foundations. Evidently the best stones only were required. The west rampart again supplied the proof. In trenching along the inner face of the wall, from the north-west angle towards the west gate, many pieces of flagstone, evidently removed from the upper courses of the inner face, were found lying immediately on the top of the backing. The height of the latter in this trench, and also at sections QR and ST, is exactly that of the remains of the inner face itself. On the top of the whole, filling all crevices and mixing with the débris and fallen stones, is the deposit of quarry 'baring.' If this 'baring' had been deposited sometime later than the removal of the stonework, there must have been considerable vegetable growth, the traces of which would be seen as a division line of some kind. No trace of any such division exists. The removal of the stonework and the depositing of the 'baring' must therefore have been consecutive operations. Finally, it must be pointed out that this 'baring' is of Roman date. When the quarry was re-opened seventy years ago, the inscription, which was near the top of the rock, was destroyed almost at once. Had the re-opening taken place in medieval times the inscription could not have survived. Since it existed in 1844, the quarry cannot have been disturbed since the sixth legion worked there. Further supporting evidence was gained from a discovery made while locating the outer face of the wall, at the east side of the south gate, where the foundations alone remain. A portion of a *dolium*, representing about a quarter of the vessel, was found, cracked and broken but with the pieces lying in order and not scattered. It covered a similar portion of another *dolium*, the pieces of which were also lying in order. It was obvious that both fragments had been buried entire and had been cracked by earth pressure. They were

partially overlying the foundations of the outer face and about 5 ins. above them. Until the facing stones had been removed, they could not occupy such a position. Had the stones been removed in medieval times, it is most unlikely that large fragments could get into such a position, whereas if they represent vessels used by the detachment of the sixth legion, which worked the quarry and dismantled the Fort. their position is easily explained. Lastly, the only coin found was lying on the top of the east wall of site VI (p. 255). It is improbable that Roman coins would be lying on the top of walls dismantled at a later period.

The Gates.—The south and east gates are alike in pattern and are of nearly equal dimensions. No other example of this pattern of gate has hitherto been discovered. The west gate is quite different in plan and of much smaller size. There is no gate in the north rampart. Each gate has one entrance only. The most noteworthy feature is the absence, in each case, of the usual tower with guard-chamber on the ground-floor, on each side of the entrance. The south gate (figs. 2, 3, 4, and plate IV) will be described first. The gate is set back very considerably from the face of the rampart-wall. The returns or side-walls, instead of meeting the outer wall at right angles, as at the west gate (plate IV), are represented by the outer wall itself which curves sharply inwards on each side of the gate. An exact modern illustration is the type of gate very commonly placed at the entrance to a park or drive. The face of the gate, which is 12 ft. long, is set back 7 ft. 9 ins. from the face of the wall. The door, as shown by the pivot-hole, is 1 ft. 10 ins. farther back or 9 ft. 7 ins. in all. The radius of the curved sides is 11 ft. 9 ins. to the face of the wall, or 12 ft. to the face of the footing course, in each case. The line of the outer face is a tangent to the curves, consequently there is no outward projection as in the case of

bastion towers. On the inside, the foundations are not uniform with the wall above, the radius of the former being 12 ft. and of the latter 8 ft. 9 ins. This projection of the foundations, which has not been built upon, can be seen in plate IV and fig. 3. The foundations of the gate are 10 ft. from front to back and 16 ft. in width. This area is uniformly bedded with cobble stones which are clearly shown in plate IV and figs. 2 and 3 (also c.p. east gate, fig. 5). The base of the east jamb remains *in situ*. It is the largest stone found during the excavations, measuring 29 ins. by 24 ins. by 11 ins. thick.

It will be seen from fig. 3 and the enlarged plan on plate IV, that the jamb-face is cut away to a depth of 4 ins., forming a ledge $2\frac{1}{2}$ ins. wide. The whole of the pivot hole has not been cut in this stone. A segment equal to a quarter of the area must have been cut in the stone lying next to it. The hole has been about 4 ins. in diameter and $2\frac{1}{2}$ ins. deep, originally. It has been very much worn at one side, to a depth of $3\frac{3}{4}$ ins. at present. On the top of the stone, faint chiselled lines showed the position of the upper courses to have been 2 ins. within the faces of the base.

The width of the jamb could not thus be more than 1 ft. 6 ins. The uniform width of main-gateway jambs in the mile-castles and forts of the Wall is from 1 ft. 11 ins. to 2 ft., or 2 Roman feet approximately. There is a recess or check cut in the outer face, into which apparently the last stone of the footing-course of the outer wall would fit. Nothing more remains of the passage walls than two stones, at a distance of 3 ft. 9 ins. from the jamb, which are shown in fig. 3 and plate IV.

They are in line with the ledge cut in the base, and are of the same height. The road through the gate is 7 ft. wide at the threshold and 7 ft. 6 ins. at the inner edge of the foundations. Between these points and for about a foot beyond them, or 12 ft. in all, the road is kerbed on both sides with thin pieces

of flagstone, about 1 ft. 6 ins. long and 2½ ins. thick, set on edge. Parallel to the last stone at the inner end, at each side of the road, another stone of similar size is set on edge at a distance of about 8 ins. It may now be pointed out that the ledge in the base of the jamb is the same height as the kerbstone opposite to it. We may therefore conclude that the space between them continued right through the gateway, on both sides of the road, in the form of a drain for surface water. It would be covered in through the gateway with stone covers, one of which rested on the ledge, cut for that purpose, in the base. The road is constructed in the usual way, large stones set in clay, forming the foundations, with smaller stones and gravel filling up the crevices and forming the surface. The foundations of the gateway, which would be constructed first, are carried underneath those of the road, as shown in sections GH and KL (plate III). Granted that the sides of the gate were symmetrical, which there is no reason to doubt, the centres of the pivot-holes would be 10 ft. apart and the full distance between the jambs, 9 ft. 4 ins., which is an average width for Roman gates. Allowing for the thickness of the doors, the passage would not be less than 10 ft. 6 ins. wide. Although the door, closing an entrance 9 ft. 4 ins. in width, must have had two leaves as usual, no trace of a threshold or door-stop could be found. The surface of the road is hard and fairly level, there being no hole of any kind in line with the pivot-holes, out of which a door-stop could have been taken. The doors must have been kept in position, when closed, with bars only. The road showed no signs of wear by wheeled traffic, but was worn evenly from the centre outwards.

The remaining side-wall, that on the east side of the gate, is perplexing. The coursed work of the inner face ends opposite the pivot-hole. From this point to the end of the foundations, the existing remains consist of nine thin stones, each about

Photo by J. P. Gibson. FIG. 2. WEST SIDE OF SOUTH GATE.

Photo by F. G. Simpson. FIG. 3. SOUTH GATE, LOOKING SOUTH.

2 ft. long and 10 ins. wide, laid on rough pieces of freestone and cobbles. The first is lying at an angle of about 45 degrees, the second at a less steep slope and so on, the last two being practically horizontal. At the same time, the height above the foundations is reduced from 1 ft. 6 ins. to 9 ins., while a similar reduction appears to take place in the amount of the clay backing. It is therefore suggested that the stones do not correspond to the bonding-courses, locally called 'thruffs,' found at AESICA and BORCOVICUS, but that they formed part of an approach to the rampart-walk, which might be in the form of steps or a sloping path.

A number of small squared stones was found which appear to have come from the upper courses of the wall. Several were from $3\frac{1}{2}$ ins. to 4 ins. deep and 6 ins. wide on the face. No voussoirs were found. Quite apart from the latter fact it is doubtful whether the entrance was arched. The side walls, even if constructed like the rest of the outer wall, could not be more than 2 ft. 9 ins. thick, which does not seem sufficient to withstand the thrust of an arch, unless lime-mortar was used. There is no necessity to suggest an arch. In the four sketches of gates from Trajan's column, given by Mr. John Ward in the Gellygaer report, only one shows an arch. It is more probable that the rampart-walk was carried over the gate on horizontal beams. The form of the gateway removes the necessity for a tall superstructure.

Those attacking the gate could be subjected to a cross fire of javelins or arrows from the rampart, which would be much more effective than a downward fire from a tower above the gate. The absence of broken nails and bolts is further evidence against the idea of a considerable wooden superstructure.

The foundations of the east gate (fig. 5) are of the same dimensions as those of the south gate in every case, except the side to side width which is 15 ft. compared with 16 ft. Unfor-

tunately the whole of the superstructure has been removed from both sides of the gate. The kerbstones of the road are also missing. The subsoil is softer than that at the south gate, consequently much larger stones have been used in the foundations. This difference in size can be seen by comparing figs. 3 and 5. The road appears to have been about 7 ft. wide, but the surface seems rougher and less worn than is the case at the south gate.

The remains of a wall, 2 ft. 9 ins. thick, were found built upon the surface of the road. The outer face of this wall is exactly flush with the face of the gateway (see fig. 5 and plate IV). A level foundation had been formed of pieces of thin flagstone, laid in clay on the uneven road surface. Among these stones, acting as parts of the foundations, were two fragments of heavy ware, about 1 in. thick, probably parts of a *dolium* about 20 ins. in diameter. The difference in height between the foundations of the wall and those of the gateway below is 7 ins., showing that the wall is really built on the road-surface.

The wall is constructed in the same way as the rampart-wall in general, except that the three remaining stones of the inner face are squared, like the outer face. This would imply that when the wall was built to close up the gate, a backing of clay was not considered necessary. Certainly no clay was found on the road surface behind the wall. Of the outer face, two courses remained for a length of 4 ft. 6 ins. It will be noticed that the upper course contains two stones much longer than the rest. Before the remains of the inner face were found, these two stones appeared to form part of a raised threshold, and the stone between them part of a door-stop. When the whole was completely excavated, however, this was seen to be quite incorrect. Before filling-in, several of the stones were removed and the foundations examined, as described above. No trace of a threshold or door-stop could be found, thus

Photo by F. G. Simpson. FIG. 4. SOUTH GATE, LOOKING N.E.

Photo by F. G. Simpson. FIG. 5. EAST GATE, LOOKING N.W.

confirming the results obtained at the south gate. Here also no voussoirs were found. The importance of this wall will be readily admitted. It is certainly not a parallel case to that of the well-known west gate at AESICA. In that and other similar cases, the closing-wall is built upon débris, and is associated with a later occupation following a partial destruction of the original gateway. Here there is one level of occupation only; the wall is similar to the rampart-wall in construction and is built upon the original road surface. Lastly, its upper courses have been removed for apparently the same purpose as were those of the rampart-wall, when the fort was dismantled.

The west gate differs very considerably in form and size, from those just described. The returns or side-walls of the passage meet the rampart-wall at right-angles. The passage is very narrow, the distance between the foundations of the side-walls being only 4 ft. 6 ins. It is the narrowest entrance through a rampart yet discovered in any fort in the north of the island. A similar entrance, 4 ft. 8 ins. wide, was found in the north rampart of the redoubt in the south camp at Birrenswark hill (*Proc. Soc. Antiq. Scot.* vol. XXXIII). The early north gate at Birrens (*Proc. Soc. Antiq. Scot.* vol. XXX) is only 5 ft. wide between the side-walls, but in the above cases the earth rampart has no outer facing of masonry. Two views of the gate are given in figs. 6 and 7. The foundations of the side-walls are 8 ft. long. Of the north wall, the foundations alone remain. During the excavations, a number of rough pieces of freestone were found, covering the remains of the flooring of the passage. They appeared to be the remains of this wall which, robbed of its outer face, had collapsed owing to the pressure of the clay backing. The inner face of the south wall was standing 2 ft. high throughout, but was wantonly thrown down in September, 1907 (p. 222). It has been pointed out (p. 230) that the footing course of the rampart-wall projects

6 ins. on the inside, from the south west angle to the south side of this gate. The offset is also present in the footing-course of the south side-wall (fig. 6), the foundations of which are 3 ft. 6 ins. wide. The foundations of the north side-wall are 3 ft. wide only, from which it would appear that the offset was dispensed with, as it was in the case of the rampart-wall, northward from this point. It is difficult to account for these variations, unless the suggestion that the work of one company of soldiers differed from that of another, can be accepted. Several pieces of freestone were used in the foundations, in addition to the usual cobbles. It is impossible to state definitely whether the side-walls were bonded into the rampart-wall. The photographs show that the stones of the inner face, which would have proved this, are missing. The stones used in the wall are large and rough, with the exception of two corner-stones which are squared and properly bonded. Since the side-walls were built to retain the backing of the rampart, all the rough work would be hidden by the clay. We may conclude that where dressed stone is present, it would be exposed, and therefore that the corner-stones represent all that remains of the end of the side-wall.

Of the sides of the passage, not a stone remained above the foundations. The space between the remains of the flooring and the solid interior of the wall measured 12 ins., clearly indicating that squared facing stones had been removed here as elsewhere. The width of the passage would be 4 ft. 6 ins. unless there was an offset at the foundation course. In this case, the walls might be reduced, and the passage increased to 5 ft. A portion of the flooring fortunately remained. It consists of large flags about 3 ins. thick, laid upon a foundation of freestone chippings bedded in the clay subsoil. Whether the flagging continued beyond the end of the passage, towards the praetorium, will be considered below (p. 256). Of the actual

Photo by J. P. Gibson.

FIG. 6. WEST GATE, LOOKING WEST.

Photo by J. P. Gibson.

FIG. 7. WEST GATE, LOOKING S.W.

doorway, nothing remains. The width of the foundations is increased to 4 ft. at this point, which suggests that the door was set back as far as possible from the face of the rampart-wall, as at the other gates. The flagging is 9 ins. above the foundations of the side-walls, thus giving the probable thickness of the threshold.

Recalling the arrangement of the small gate at Birrenswark hill, already referred to, we may suggest that the jambs were 18 ins. wide as at the south and east gates, and 6 ins. deep. The distance between the jambs would then be 3 ft. 6 ins. for which a single door would be sufficient. If the height of the rampart-walk was not more than 6 ft. above the ground (p. 233), it would probably be increased at each of the gates, in order to provide a proper height for the doors.

Gateways consisting of side-walls without guard-chambers, as in the present instance, have been found at Birrens and Roughcastle (*Proc. Soc. Antiq. Scot.* vol. XXXIX) in connexion with earthen or turf ramparts, also at Castlecary (*Proc. Soc. Antiq. Scot.* vol. XXXVII) and CILURNUM (small east and west gates, *Arch. Ael.* vols. X, etc.) where the ramparts are of stone. At the north-west gate of York (Wellbeloved, EBURACUM, p. 51), this arrangement is found with a composite rampart, but in that case the outer wall is probably a later addition. During the excavation of the gate several large nails were found. Probably the side-walls were carried up to the level of the parapet, above which there would be a defensive superstructure of wood.

STRUCTURES CONNECTED WITH THE RAMPART.

Drains.—In describing the rampart, the discovery of two drains, carried through the backing and outer wall, has already been mentioned (p. 231). In the Antonine Fort at Barhill (*Proc. Soc. Antiq. Scot.*, vol. XL), two drains were found going through the rampart, in very similar positions, one apparently used

for surface water, the other being the outlet from the latrine. In the present case, both were discovered when search was made for angle towers. A trench was being carried around the inner face of the north-west angle when one of the flags forming the bottom or floor of the first drain was uncovered. It was not further excavated when work was suspended at the end of April, 1907. During the interval, the flag was moved from its position. The drain was completely uncovered in June (figs. 8 and 9). The floor consists of three flags, each about 3 ft. long, 2 ft. 2 ins. wide and 3 ins. thick, which are laid upon the clay subsoil. The flag which was removed appears reared against the side of the trench, in both photographs. The full length of the flooring is 9 ft. The continuation of the drain through the outer wall would probably be flagged at the bottom, but this portion, as well as the outlet, are destroyed, the wall being removed down to the foundations. The side walls consist of one course of rough blocks, mostly of whinstone, with a second course of small pieces of flagstone above. Each wall is 8 ft. 2 ins. long, measured from the inner face of the rampart-wall. As the separate stones vary in size, this equality in the lengths of the side walls seems to indicate that 8 ft. 2 ins. was the full length of the covered portion. One covering flag and a portion of a second remain in position. The height of the drain is 13 ins. and the width 11 ins. At the inner end several stones were found which may be a rough continuation within the Fort. It must be pointed out, however, that a centre-line through the stones was 7 ins. to the west of the centre of the drain. They can be seen in fig. 9, but are not shown on the plan (plate II). The drain is placed at the lowest point within the rampart, being 2 ft. 6 ins. below the north-east angle, 4 ft. below the floor of the praetorium and 2 ft. 3 ins. below the west gate. From its position, it was evidently used for carrying off surface water. The second drain, which differs from the first in construction, and probably

Photo by F. G. Simpson. FIG. 8. N.W. ANGLE AND DRAIN, LOOKING S.W.

Photo by J. P. Gibson. FIG. 9. NORTH RAMPART FROM N.W. ANGLE.

in use, was found at the south-west angle (figs. 10 and 11). In this case the bottom of the drain is not flagged, except where it is carried through the outer wall. The side walls are built upon the hard subsoil (p. 224) only. The walls are constructed entirely of rough pieces of whinstone, packed with clay. The inside has evidently been faced as well as possible, considering the material; the outer faces are very rough, as they would be covered by the clay backing. The east wall, of which two courses remain, is 24 ins. thick and 7 ft. 8 ins. long, from the inner face of the rampart wall. Of the west wall, three courses remain at one point, giving a height of 16 ins. It is 27 ins. thick and 8 ft. 1 in. long. This difference in length is accounted for by the fact that the whole structure is slightly askew. Nothing was found which gave any clue to the use of this drain. The strength of the side-walls practically disposes of the idea that it was an ordinary covered structure, as in the former case. It is much more probable that it formed part of a latrine. At BORCOVICUS (*Arch. Ael.*, vol. XXV), Barhill and Castlecary, the latrine is placed very near one of the angles of the Fort.

Steps and Hearth.—On the west side of the drain just described, are the fragmentary and doubtful remains of two structures. Almost touching the end of the west wall of the drain is a large flag (fig. 11). Above it are several smaller pieces of flagstone built into the slope of the clay backing, in the form of rough steps (plate III, section AB). Two 'steps' remain, the tread being about 8 ins. and the height 7 ins. The height is made up of three stones laid flat, the topmost forming the tread of the step above. The stones are about 18 ins. long. It may be doubted, however, whether they are strong enough to have formed an approach to the rampart-walk.

In the middle of the angle, 3 ft. 6 ins. from the supposed steps, two large stones were found which have formed the sides of a fireplace or hearth. They are 16 ins. apart and 7 ft. 9 ins.

from the inner face of the rampart-wall. When found, the space between them was filled with charcoal, composed almost entirely of small pieces, round in section, from $\frac{1}{8}$ in. to $\frac{3}{16}$ in. in diameter, evidently the remains of heather. The stones were much fired. The whole hearth was slightly below the general level and appeared to have been completely covered with a layer of soft shale, similar to that found in the north ditch (p. 227). Above the shale, a quantity of fired stones, cobbles and some small coal were found. When first uncovered, the fallen stones seemed to represent an oven or hearth which had collapsed. Possibly the hearth below was used for the 'fettling' of the iron tools used during the building of the Fort.

Oven.—This interesting structure occupies the north-east angle of the Fort. Before excavation, its position was shown by a distinct mound. During the second day's work in 1907, a trench was cut across the rampart and mound from outside the Fort. The remains of the outer wall were met with as in other sections, but as the trench was continued nothing was found but fallen and broken stone, very much fired. Since no stone appeared to be in position the trench was not carried farther. It was not until November, when work was almost completed inside the Fort, that another trench was cut, this time in the opposite direction. A quantity of charcoal was met with, fragments of vessels nos. 3 and 4 (plate v) and of a large *dolium* were found, and finally the remains of the oven were exposed. By this time the nature of the rampart had been ascertained and it was seen that the fallen stones found in the first trench and unfortunately removed, had formed part of the floor and side-wall of the oven which had collapsed for the following reason. The clay backing appears to have been increased to 9 ft. in width at the base at this point, and the oven, the centre of which is 10 ft. 6 ins. from the inner face of the rampart-wall, built partly upon the level ground and partly upon the

Photo by F. G. Simpson. FIG. 10. DRAIN AT S.W. ANGLE, LOOKING N.

Photo by F. G. Simpson. FIG 11. DRAIN AT S.W. ANGLE, LOOKING S.

sloping bank. When the outer wall was removed, the clay would slip forward, carrying with it a portion of the structure. In the plan and section (plate IV) the manner in which the fallen material was found is reproduced, while fig. 12 shows the oven when completely excavated. The foundations are composed of rough blocks of whinstone and freestone, with a mass of cobbles packed in clay above them. Upon this the floor or oven-plate is laid, at a height of 1 ft. 9 ins. above the general level of the Fort. It is formed of flags about 3 ins. thick. Apparently seven sector-shaped flags have been used with the points cut off, another flag forming the middle of the floor. They are badly cracked and darkened by fire. The whole structure is about 8 ft. in diameter and circular except for a definite projection, the centre line of which is nearly parallel to the east rampart. This projection is composed of roughly squared stones forming a semicircle 3 ft. 2 ins. in diameter. They have evidently been covered with a flag which would be level with the rest of the floor. Of the circular wall of the oven, only ten stones of the first course and two of the second remain in position. Where the stones of the lower course are removed, their position is clearly indicated on the flags by a circular mark of firing, beyond which they are quite fresh and yellow in colour. The internal diameter is 5 ft. 6 ins. As the flag in line with the projection does not show this mark of firing, we may be certain that this was the position of the door or entrance and that the projection formed the 'hob.' Around the hob a considerable deposit of charcoal or ashes was found, these ashes being the remains of wood only, without any trace of coal. The oven was probably of the same type as the 'brick oven,' so common even a century ago, which was dome-shaped. A fire of wood, laid on the floor, was lighted and allowed to burn until the interior was red-hot. The fire was then removed, the floor cleaned, and the food to be cooked

inserted. Ovens of this type were generally used for the baking of bread. From the very rough appearance of the outside, it is suggested that the whole structure would be covered with clay and turf, except the hob, the better finish of which showing that it remained exposed. Among the various ovens found on Roman sites, this type is very uncommon. No fort on the line of the Wall has supplied an example up to the present time. In Scotland several ovens or furnaces have been discovered which in some respects resemble our example. Near the east gate at Birrens four were found, forming one structure, built in the body of the earth rampart. The internal diameter of each was 5 ft. 6 ins. At Inchtuthil (*Proc. Soc. Antiq. Scot.* vol. XXXVI) the ovens are also four in number, but they are separate structures, the internal diameter varying from 3 ft. to 6 ft. 3 ins. They have been worked from outside the rampart, being built in the side of the east ditch of the camp. The chief difference between these and the oven in question is in the type of entrance. At Birrens and Inchtuthil, the entrance passages are about 2 ft. wide, and not less than 2 ft. 6 ins. long at present, while they appear to have been longer originally. In such a narrow passage it would be difficult to clean out the interior after firing and equally so to insert any articles to be cooked. In the present instance, the operator is separated from the interior by the thickness of the door only. Fortunately an oven of exactly the same type was discovered in 1908, in the Roman Fort at Castleshaw in Yorkshire. It occupies a similar position at the south-east angle of the inner Fort, and was at first thought to be an angle tower. Through the kindness of Mr. Samuel Andrew and Major Lees who have conducted the excavations and of Mr. F. A. Bruton who is preparing the report, we are enabled to give the following details. The structure is 9 ft. in diameter outside. The foundations are formed of stones and clay, upon which the floor is laid. The

Photo by J. P. Gibson. FIG 12. OVEN AT N.E. ANGLE, LOOKING N.

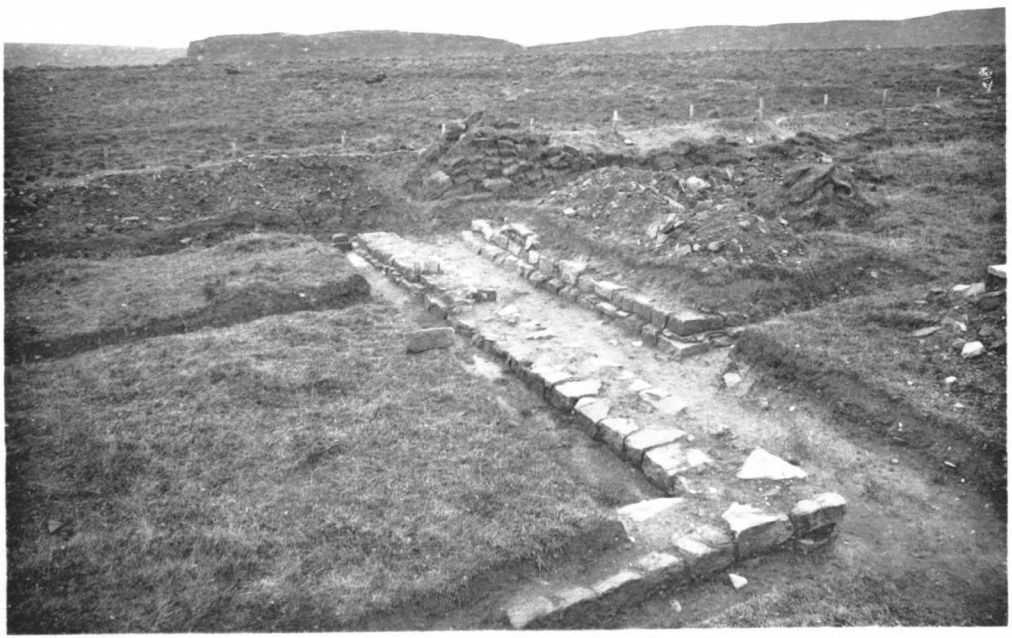


Photo by F. G. Simpson. FIG. 13. PORTIONS OF SITES II. AND III., LOOKING N.E.

latter consists of heavy flags, 4 to 5 ins. thick, very neatly fitted, and is from 1 ft. 6 ins. to 1 ft. 9 ins. above the general level. Two courses of the circular wall remain, the internal diameter being about 6 ft. 6 ins. At one point there is a semi-circular projection corresponding to the hob in the present instance. A very large quantity of charcoal was found, mostly in a heap at one side of the oven.

Flagging.—At the south-east angle remains of a doubtful character were found, consisting of a number of flags, laid upon the clay, without special foundations, but arranged in a more or less definite manner as shown on plate II. The four-sided portion is 12 ft. from north to south and 10 ft. 6 ins. from east to west, measured from corner to corner. The flag nearest to the rampart-wall is 7 ft. 6 ins. from the inner face. At the north corner there is a continuation about 3 ft. wide and 10 ft. long, parallel to the east rampart. We were unable to ascertain the purpose of this flagging. On the south side, a broken pioneer's axe was found, and on the north, fragments of vessel no. 5, plate V.

INTERNAL BUILDINGS.

The outstanding feature of the whole excavation was the entire absence of evidence of a general conflagration. This fact distinguishes the Fort at Haltwhistle burn from all other Forts hitherto examined in the North. Signs of conflagration, if present, would be most apparent among the internal buildings, and as these signs are wanting, we have the best proof that the Fort was never occupied and destroyed by the enemy.

The slight remains of five separate stone buildings were found. One is made up of two distinct portions which have separate numbers on the plan (IV and V, plate II). The following details are common to all the buildings and may be conveniently

stated first. The foundations are of the same character as those of the rampart-wall, consisting of a layer of cobblestones, the width of the footing course. The latter is 24 ins. wide throughout, faced on each side with roughly squared blocks, generally freestone. The wall above is from 18 ins. to 20 ins. thick, there being an offset from 2 ins. to 3 ins. wide on each side. The best work consists of squared freestone on both faces, in a regular course, the wall maintaining an even thickness. The rougher work contains many pieces of flagstone, the courses are irregular and the thickness of the wall varies. Clay is used for mortar throughout, as in the rampart-wall. The walls nowhere stand higher than 8 ins. above the footing course, while in many places they are removed to the foundations. Not one building is exactly rectangular in form, though the walls are quite straight. No traces of partition walls could be found, though careful search was made in each building. Except in site VI, the position of the doorways could not be located. Of the nature and level of the floors, very little can be said with certainty, as there is no definite flagging or pitching. The débris of the walls, found inside the buildings, was lying on unburnt clay. This débris and the fragments of pottery, appeared to be level with the top of the footing course. It seems probable therefore that the floors were of beaten clay and at a level slightly above that course. At Gellygaer there is a similar absence of partition walls and regular floors. The arrangement of the buildings is quite different from that of the larger Forts and lacks the familiar regularity and balance. The absence of a gate at the north end of the *Via Principalis* has altered the whole of the northern portion of the Fort. Site VI occupies a definitely central position upon the *Via Principalis* facing the east gate. In shape and size it differs so much from the usual form of *Principia* or headquarters of the larger Forts, that perhaps it more nearly represents the Commander's 'tent' of the large temporary

camps. A striking feature is the small area occupied by stone buildings. Here it is only nineteen per cent. of the whole area of the Fort, while at BORCOVICUS it is 45 %. As already stated, repeated efforts failed to disclose remains of any buildings in the south-east portion of the Fort. Here and there pieces of flag-stone were found and other fragments, but, though the subsoil is soft, there was no trace of cobble foundations. The buildings may have been constructed of wood, but neither posts nor post-holes were met with. It must not be forgotten, however, that if the Fort was carefully dismantled, wooden buildings could be removed entirely. The above remarks apply also to the space between site III and the path leading to the west gate. The buildings may now be described in the order in which they were discovered.

Site I.—This building is distant about 15 ft. from the outer wall, but is not parallel to it. In shape it is nearly square, measuring 31 ft. from north to south, and 31 ft. 6 ins. from east to west, average outside dimensions. The construction is rough and the stone much decayed. At the north-east corner, two courses remained above the footing-course. Nothing was found inside the building and no clue to its use was obtained.

Site II.—The long and narrow barrack buildings at BORCOVICUS, Birrens and other Roman Forts appear to correspond with site II. It is parallel to the outer wall, at a distance of 17 ft. 6 ins., and measures 98 ft. 9 ins. in length and 17 ft. in width, average outside dimensions. Like site I, it is roughly constructed, but the stone is in better condition. Except at the east end, where the wall is removed to the foundations, an average height of 12 ins. remains in position. Nothing was found in the trenches within the building, but fragments of vessel no. 2, plate V, were found on the north side, and those of two large *dolia* lying against the south wall.

Site III.—A narrow space, about 2 ft. 9 ins. wide, separates site II from site III. The latter is nearly parallel to the outer wall, at a distance of 13 ft. 6 ins. It is nearly square, measuring about 28 ft. in each direction, and is constructed of the best masonry found within the Fort. The remains of the first course of the wall consist of squared freestone about 4 ins. thick, on each face. Again nothing was found inside the building.

Site IV.—Several features make this building particularly interesting. The construction is very rough, flagstone being used almost entirely. From north to south it measures 39 ft. 3 ins. and from east to west 30 ft., average outside dimensions. The remains are scanty and great difficulty was experienced in tracing the north and east walls, where the foundations alone remained. A portion of the footing-course of the south wall was found, the stones of which were set on edge, the depth of the course being 6 ins. and the width of the face from 3 ins. to 4 ins. only. This feature was not met with elsewhere. This wall is 26 ft. 6 ins. from the rampart-wall. The west wall is better preserved. The wall of another building (site V) abuts upon it near the south-west corner, and in addition the remains of six buttresses were found (fig. 14). There were no traces of similar buttresses upon the other walls. Buttressed buildings, which were certainly granaries or storehouses, are found in all the larger Forts, but they are always distinguished by great strength and superior masonry. Site IV with its inferior construction must require a different explanation. The buttresses project 2 ft. 9 ins. in each case and average 2 ft. 6 ins. in width, but the distance from centre to centre varies from 4 ft. 2 ins. to 5 ft. 6 ins. The first is 9 ft. from the north-west corner. Not one is exactly rectangular in shape. The remains appear to be the foundations only, and consist of cobbles and pieces of freestone.

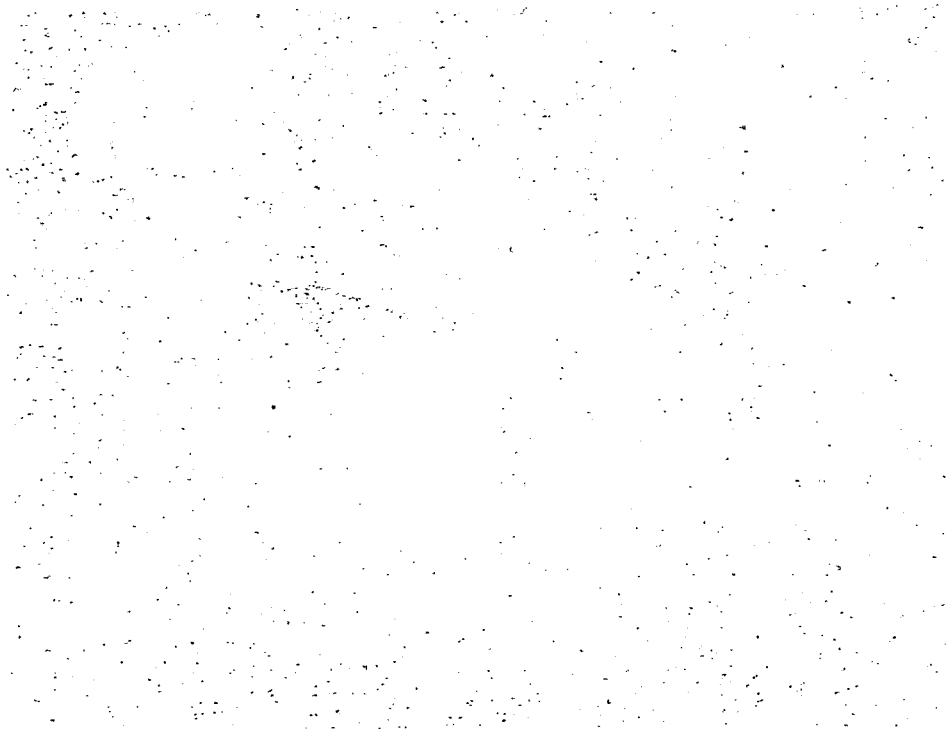
It will be seen from the photograph that the lowest stones of the buttresses are level with the footing-course and

Photo by F. G. Simpson.

FIG 15. BUTTRESSES ON W. SIDE OF SITE IV., LOOKING N.

Photo by J. P. Gibson.

FIG. 14. OUTER FACE OF RAMPART WALL AT S.W. ANGLE, LOOKING N.W.



thus nearly 6 ins. higher than the foundations. Further, the usual 3 in. offset is present behind the buttresses, the upper stones of which are laid upon it. It seems clear therefore that the buttresses were constructed later than the wall. Probably their object was to counteract a settlement or bulging of the upper portion of the building. A similar instance of a buttress erected to counteract a settlement, was found in 1908, at the north-east corner of the east granary at CORSTOPITUM. Nearly three-quarters of the number of vessels represented by fragments, were found inside and around this building. A wide trench close to the west wall on the inside, yielded fragments of 14 or 15 small vessels, but no coarse ware. Those represented by sections numbered 6, 8, and from 10 to 18 (plate v) were among them; the remainder, including a very small piece of 'Samian,' not giving any clue to the size or shape of the vessels. A second trench, cut diagonally across the building, produced no pottery, the only object being a broken spear-head. Between the building and the rampart, fragments of two *mortaria* and of vessel no. 9, plate v, were found.

Site v.—Though separately numbered on the plan, this building abuts upon site IV, as stated above. The south wall is 62 ft. 6 ins. long, and 27 ft. 4 ins. from the rampart-wall, to which it is parallel. Portions of the footing-course alone remain, consisting of squared freestone, in striking contrast with the poor work of site IV. The foundations, at the point where the walls meet, are exactly level, giving no evidence of a later addition, as in the case of the buttresses. Near the south-west corner, the cobble foundations are discontinued. Several large pieces of flagstone, about 5 ins. thick, are used, and appear to be laid directly upon the undisturbed subsoil, which is particularly solid at this point (p. 224). A length of about 11 ft. of the west wall remains, with several squared stones of the first course in position at one point, beyond which the wall is entirely des-

troyed. The absence of foundations makes it impossible to ascertain the size of the building definitely.

Squared stones and much débris were found for some distance, in line with the existing remains, but beyond a point 22 ft. from the corner such traces were not met with. This point may be the position of the north-west corner. A number of trenches were cut in order to locate the north wall, or a line of posts, but without success. If the building was a shed, open to the north, the posts may have been removed bodily, as suggested in the case of the south-east portion of the Fort.

Site VI.—Of the internal buildings this alone occupies a position from which its use may be inferred. It is the smallest of the six, measuring only 19 ft. 8 ins. from north to south and 14 ft. 9 ins. from east to west, average outside dimensions. The quality of the work is similar to that of site III, but the remains are much disturbed. On the east side, the footing-course is left, and a portion of the first course of the wall which indicates the position of a doorway. At a point 8 ft. from the south-east corner, as shown on the enlarged plan (plate IV), the first course ends at a straight joint. If a similar length is measured from the north-east corner, a space 4 ft. long remains, which would be occupied by the threshold. Probably the upper courses would overlap the threshold at each end, reducing the size of the doorway to a more usual width of 3 ft. or less. The paved area in front of the building extends along the whole of the east wall. Opposite the doorway, there is a gentle slope up to what has been the level of the threshold, or about 4 ins. above the footing course. A quantity of small coal was found lying against the outside of the walls, especially near the south-east corner. Inside the building, at that corner, were the remains of a hearth of burnt clay, quite vitrified at the bottom by the continued action of fire. No fragments of pottery, or other small objects were found inside the building. The only coin found during the

excavations, a 'first brass' of Trajan (p. 271), was lying on the top of the wall, near the south-east corner. When first discovered, it was suggested that this building represented the central chamber in the inner court of the *principia*, or headquarters, of the larger Forts, which was the treasury and sanctuary of the standards. In the present case, though it may have been used for these purposes, the presence of a hearth and a supply of coal seems to imply that it was continuously inhabited. If this was the case, from its position it could not be other than the *praetorium*, or the quarters of the commander of the garrison.

Roads or Streets.—The construction of the roads where they pass through the gates has already been described (p. 238). The arrangement of the roads or streets within the Fort may now be considered. After passing through the east and west gates, the roads gradually increase in width until they merge into a large paved area opposite the *praetorium* (plate II). This paving is continued on each side of site VI in the form of a street, and for a short distance further to the westward. Both streets end abruptly, that on the north within 20 ft. of site VI, and that on south in line with the west wall of site IV. The paving consists of cobbles, packed tightly together, and in some places it seems as if the turf had not been removed before they were laid down. Over a portion of the area, especially between sites II and VI, there is one layer of stones only, but they are of rather larger size: the roads opposite sites I and IV are composed of two layers, while opposite site VI the thickness is further increased, and amounts to nearly 12 ins. at the doorway. These variations are indicated, as far as possible, in sections AB, CDE, GH and KL (plate III). The paving actually touches the walls on three sides of site VI and on two sides of site IV, but does not approach within 5 ft. of site I, or 8 ft. of site II. No paving of any kind could be found in the very irregular *intervallum*. Four or five trenches disclosed a layer of broken freestone, about 6 ft. wide

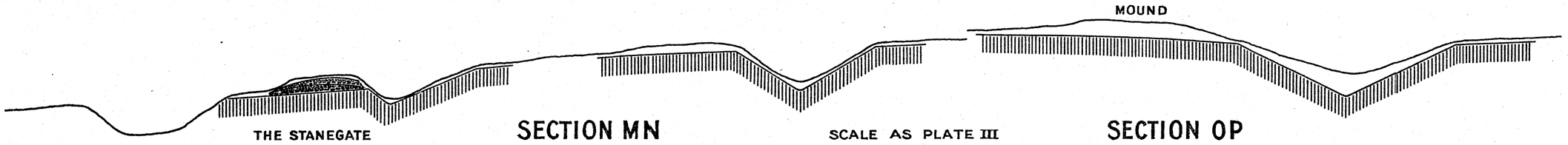
and 6 ins. thick (*max.*), extending from the west gate to within about 17 ft. of the west wall of site VI. This path does not appear to be definitely connected with the cobbled street between sites IV and VI. The remains of flagging found in the passage of the west gate are laid upon similar broken freestone (p. 242), and it may be suggested that originally the path was flagged throughout its length.

THE STANEGATE AND ITS BRANCHES.

The remains of the Stanegate on the south side of the Fort are very considerable and form probably the best preserved portion throughout its entire length. The works consist of a mound with a ditch on the north which is wholly artificial and another on the south which is partly natural. The road passes the south-east angle at a distance of only 60 ft. It then curves to the south-west as it descends the steep slope, finally turning west before crossing the burn. In spite of the curves, the gradient below section MN is about 1 in 6. On the west bank the road curves in a similar manner and the mound is in fine preservation. Three trenches were cut through the road during the excavations, the results of which together with the examination of the branch roads entering the Fort at the south and east gates, are of particular interest.

The first was cut directly opposite the south causeway and revealed a rough surface of cobbles and gravel, considerably raised in the middle, immediately below the turf (section KL, plate III). The kerbstones were missing on both sides of the road. About 12 ins. (*max.*) below this surface, a very solid formation was met with. It was possible to clear away the whole of the upper material without disturbing the hard surface below. Until the second trench had been made, however, the use of this lower surface was not clear. To the west of section KL the large mound increases in width and a smaller mound appears

DATUM

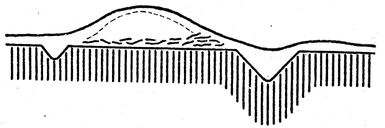


SECTION MN

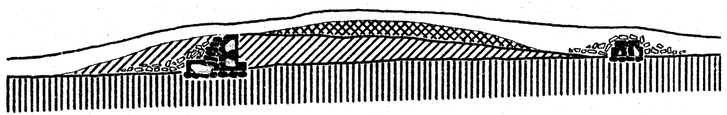
SCALE AS PLATE III

SECTION OP

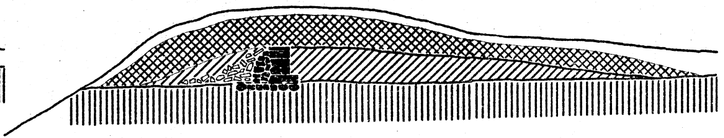
MARCHING CAMP Nº I
SECTION YZ



DATUM

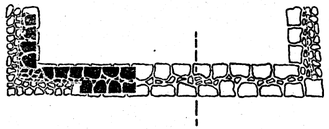


SECTION QR

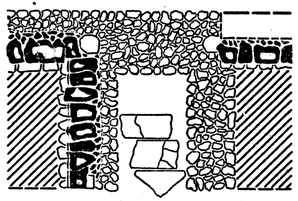


WEST RAMPART

SECTION ST

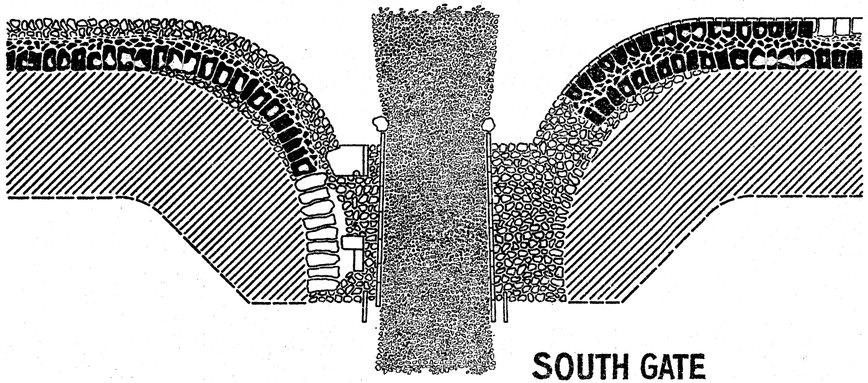


DOORWAY IN EAST WALL OF PRAETORIUM

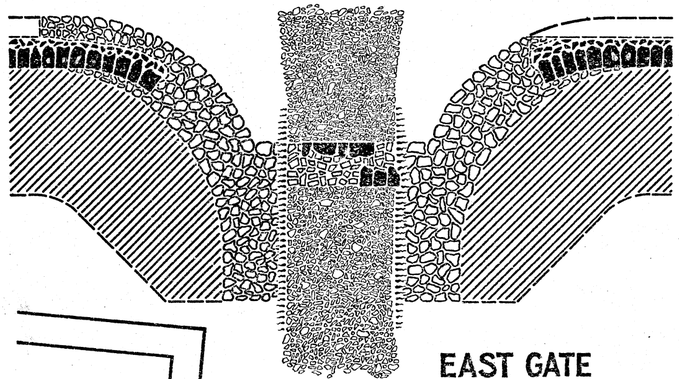


WEST GATE

UNDISTURBED SUBSOIL
CLAY BACKING
QUARRY BARING
FALLEN STONE
ROAD-METAL (IN SECTION)
ROAD-METAL (IN PLAN)
FOUNDATIONS (IN PLAN)

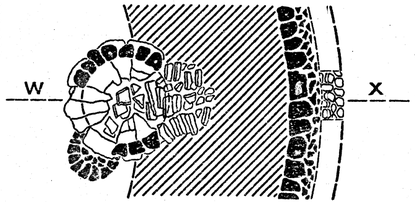


SOUTH GATE



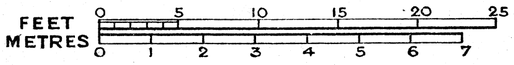
EAST GATE

SECTION AT WX



OVEN

SCALE OF ENLARGED PLANS
AND
SECTIONS (QR, ST., WX AND YZ),
7FT. 6INS = ONE INCH.



1907-8

J.G.S.

to cover the northern portion of it. A second trench was cut to explain this, 60 ft. from the first (section MN, plate IV). The same rough surface and high crown met with in section KL were found on the removal of the turf, but in addition the kerbstones were in position on the south side of the road. On the north side they were missing and a quantity of the road-metal had slipped into the ditch. The road was then cut through completely (fig. 16). The foundation is composed of cobbles, smaller than the kerbstones, bedded in clay. Since the subsoil is a sandy gravel the clay, which is about 4 ins. thick, must have been put in. Above the foundation, smaller stones and gravel very tightly packed, form the surface of an excellent road about 16 ins. thick at the middle. Allowing for the missing kerbstone on the north, the full width would be 16 ft. 6 ins. This road is the 'lower-surface' of the first trench. Above it, springing from the same kerbstones, and consequently with a much higher crown, is the second surface. It is composed of similar material to that of the road below and the greatest distance between the surfaces is 14 ins. In quality, the upper surface is distinctly inferior, but it must not be forgotten that it has been exposed since the abandonment of the road and consequently all traces of binding material have been washed away. At first, it appeared probable that the upper surface was an addition of medieval times, during which the road gained the name of 'Stanegate'; but a further section suggests a different explanation. The ditch on the north side of the road does not extend more than 120 ft. to the east of section KL, so the third trench was made about 50 ft. east of its termination (section 2, plate I). Here no trace whatever of a second surface could be found, the camber of the road being very similar to that of the lower surface in sections KL and MN. The kerbstones were missing on both sides. The branch roads may now be considered. After leaving the east gate, the eastern branch increases in width from 7 ft. to about 9 ft. It passes over the causeway, which is directly

opposite the gate and then turns to the south-east in the direction of the Stanegate. It was examined in several trenches and joined the main road at a point about 175 ft. east of the Fort (plate I). Unfortunately the actual junction could not be examined, as both roads are completely destroyed as they approach the modern road to the north. No kerbstones were found in position in any trench across this branch. The southern branch also increases in width to about 9 ft. after leaving the gate. It continues in a line at right angles to the ditch, after crossing the causeway, and consequently meets the north ditch of the Stanegate at an angle of about 75°. The portion between the ditches is 11 ft. wide and has kerbstones on each side. Probably both branches were kerbed originally, and about 11 ft. wide throughout.

The point at which the road meets the ditch was carefully examined. Two or three kerbstones were removed on each side of the road, but the road-metal was continued to the lip and a portion of it had slipped down the side of the ditch. If the ditch had been dug before the branch was made, the two would probably have met at right angles and if not, surely the end of the road would have been kerbed like the sides. The evidence goes wholly to prove that originally the branch joined the Stanegate, branching from it at an acute angle towards the north-east, and that the ditch was dug at a later period.

The latter appears to correspond in some way with the upper surface of the road and its upcast might probably furnish a large proportion of the stone required. It is clear from the milestones found near VINDOLANA (*Arch. Ael.*, vol XI, 2nd S., p. 130), that the Stanegate was largely used during the third and fourth centuries, and it is most probable that the ditch and upper surface belong to the first quarter of the third century. This may yet be proved, but is of no consequence in the present case; whereas the important fact of a connexion between the Fort and the original Stanegate, has been fairly established.

THE MARCHING CAMPS.

One result of Maclauchlan's *Survey* was that several of the earthworks or temporary camps of Roman date, near the line of the Wall, were recorded and surveyed for the first time (*Memoir*, pp. 33 and 52). It is therefore remarkable that the two camps, lying between the Fort at Haltwhistle burn and the Wall, should have escaped his notice. The larger of the two (no. 1, plate I), lies north by east of the Fort at a distance of about 250 ft. from the north rampart. It occupies a strong position at a higher level than the Fort, the middle of the camp being 627·6 ft. above the sea level, from which point the ground slopes downwards in every direction. The smaller camp (no. 2) is 129 ft. east of no. 1. It is from 11 ft. to 15 ft. lower, and though strong on the north is distinctly weak on the south side. The path from Cawfields mile-castle to Wade's road passes between the two camps.

The south rampart of the larger camp is in good preservation, but part of the east rampart is destroyed by the modern road to the north which crosses the camp. The north and part of the west ramparts are very indistinct, but the ditch can be traced throughout. The camp is rectangular, the length from east to west being 458 ft. and the breadth 250 ft., measured from the centre-line of the ramparts. The area is, therefore, about 2 ac. 2 r. 2 p. The angles are rounded in the usual way, the radius being about 22 ft. On the south side, at a distance of 165 ft. from the east rampart is an entrance 30 ft. wide, defended by a straight traverse and ditch 30 ft. long, at a distance of 30 ft. to the south. It may be pointed out that the proportionate distance of this entrance, measured from the east, is 36·0% of the length of the side, which may be compared with 36·6% in the case of the south gate of the Fort. There is no trace of another entrance, the ditch being continuous around the camp, except at this point. A trench was cut through the rampart and ditch at the south-east angle (section YZ, plate IV). The ditch, which

is 4 ft. wide and 2 ft. deep is full of the usual black silt, representing decayed vegetable growths. The centre-line of the rampart is 8 ft. within that of the ditch. Below the rampart, the original turf has not been removed, but shows very clearly in the section. Upon this a foundation composed also of turf has been laid, which is represented by the broken lines in the drawing. On the outside, this foundation takes the form of a distinct heap, apparently for the purpose of preventing any of the loose upper material from slipping back into the ditch. Between this heap and the lip there would probably be a berm from 1 ft. to 1 ft. 6 ins. wide. Much more turf has been used in the foundation than would be provided by the area of the ditch. Above the turf is the body of the rampart, composed of the upcast from the ditch. The full height above the old surface line is 2 ft. 2 ins. There is very little evidence of settlement, and probably the extreme height would not exceed 2 ft. 6 ins. Within the rampart, 5 ft. 6 ins. from the centre-line, is another artificial depression in the original surface. It is 20 ins. wide and 10 ins. deep, and thus of the same proportions as the ditch. Since the ground slopes down from the middle of the camp to the rampart on every side, the purpose of this channel would apparently be to carry off surface water which would otherwise collect at the back of the rampart. Its outlet was not discovered. On the top of the rampart, a pair of iron shears of the usual Roman pattern was found, one blade of which is unfortunately missing. A trench was also cut through the entrance and traverse. The latter is constructed in a similar manner to the rampart. There is no evidence of paving at the entrance, nor of any made road leading from it. The second camp consists of two portions, a complete enclosure on the north and a rectangular annexe on the south, one side of which is the south rampart of the northern portion. The dimensions of the ramparts are practically the same as those of the larger camp; the ditch being of

the same depth, but slightly narrower. The camp is rectangular, the length from east to west being 280 ft. and the breadth 135 ft., giving an area of 3 r. 19 p. The radius of the curves at the angles is again 22 ft. The rampart and ditch are in fair preservation throughout. On the south side, that is within the annexe, is the only entrance, at a distance of 131 ft. from the east rampart. It is 20 ft. wide and is defended by a straight traverse 20 ft. long at a distance of 27 ft. At first it appeared as if the ditch round both 'camp' and 'annexe' was continuous and that the 'camp' was therefore a later contraction of the original area. This is not the case, however. Trenches cut near the south-east angle of the camp showed that the ditch of the annexe is not exactly in line with that of the camp but slightly beyond it, and also that the two do not join, there being a narrow space, about 6 ft. wide, which has not been cut through. Nearly opposite this space was a shallow depression which may indicate the position of a small traverse. The full length of the annexe, measured from the centre line of the rampart as before, is 283 ft., thus slightly exceeding that of the camp. The south rampart is 148 ft. from that of the camp, giving an area of 3 r. 34 p. The radius of the curves at the angles is the same as before. There is again only one entrance (omitting the narrow spaces mentioned above), which is in the centre of the south rampart. It is 20 ft. wide and has a straight traverse of the same length, at a distance of 20 ft. to the south. Taken together the two form a square the sides of which average 282 ft., with a total area of 1 ac. 3 r. 13 p. From the dimensions of the ramparts and ditches given above, it will be seen that the defences of these camps are of a very temporary nature. If they are compared with those of the other temporary camps on the line of the Wall, it will be found that they are the weakest yet discovered. Camps like that of Brown Dikes, with a ditch of 16 ft. wide (*Memoir*, p. 35), were probably occupied from time to time, but it would appear

that the camps near Haltwhistle burn Fort represent little more than those formed every night by a body of troops on the march. For this reason we have called them 'marching' camps. Maclauchlan's opinion was that the various temporary camps were built to accommodate the bodies of troops engaged in building the Wall (*Memoir*, pp. 33, 36). In some cases this may well have been their original purpose, and perhaps Maclauchlan would have expressed the same opinion of these also, had he seen them. But a striking feature of their arrangement leads us to a different view. Of all the temporary camps yet discovered on the line of the Wall, these camps alone have only one entrance. Further, this entrance is in the south rampart, whereas while the camps generally have an entrance in each rampart, if one is wanting it is always that on the south side. The following table will show that the case is not overstated:

Name or Position.	Dimensions.	Entrances on the:—	Type of Entrance.	Reference to Memoir.
	Feet.			
2 f. S. by W. of Mile-castle near Tower-Tye	240 × 240	N.S.E.W.	Straight traverse	p. 33
1½ f. S.S.E. of Mile-castle at Limestone Corner	180 × 180	N.S.E.W.	Do.	p. 33
Brown Dikes	225 × 225	N.S.E.W.	Do.	p. 35
2 f. S. by E. of Mile-castle W. of the Coesike	180 × 170	N.E.W.	Do.	p. 36
Near Haltwhistle burn Fort, No. 1	458 × 250	S.	Do.	—
Near Haltwhistle burn Fort, No. 2.	280 × 135	S.	Do.	—
Black Dikes or Glenwhelt Leazes	495 × 264	N.S.E.W.	Clavicula and straight traverse	p. 49
Chapel Rigg	270 × 225	N.S.E.W.	Do.	p. 49
Crooks	390 × 270	N.S.E.W.	Straight traverse	p. 51
Thorpe	? 270 × 270	?	?	p. 52
Willowford	300 × 240	N.E. ?	Straight traverse	p. 52
Grinsdale, No. 1	240 × 240	N.E.W.	Circular traverse	p. 79
Do., No. 2	180 × 90	N.S.E.W.	?	p. 79

It is hardly reasonable to suppose that those employed in building the Wall would construct camps, the only entrances to which were turned away from it. From the defensive point of view also, the entrances of both camps are weaker than if they had been placed on the north side. This is especially the case in the smaller one, where the annexe is quite commanded by the rising ground to the south, or that to the south-west on which the larger camp stands. It is far more likely that these camps, with their single entrances turned towards the south, were made as temporary shelters by those who built the Fort.

NOTES ON THE 'FINDS.'

Strong evidence of the deliberate dismantling of the fort is adduced by the extreme paucity of the finds of pottery. In Britain, as in Rome itself, it was customary in rebuilding not to clear the site, but to build on the débris of previous occupations. On other Roman sites in the Wall district at least three periods of destruction have left definite strata of débris, each containing the remains of the whole of the vessels existing upon the sites at the time of each disaster. At the Haltwhistle burn Fort, while the ramparts were being stripped of their squared stone, every whole vessel would be removed and only useless pieces left behind. The few fragments found as the result of the first fortnight's work, representing only four or five vessels, contrast strongly with the 'barrow-loads' found elsewhere on Roman sites: this average, however, was rarely exceeded during the whole period of the excavations. Altogether the fragments represent a total of fifty vessels.

The other objects found were twenty-nine of iron, one coin, two personal ornaments, and one whetstone.

Except that on the coin, no inscription of any kind on metal, stone, or pottery was found.

Among the pottery, several vessels appear to be of uncommon

shape; in one instance we are unable to find a similar specimen elsewhere, and the iron objects include a scythe, the first discovered in the Wall district. Unfortunately the damp nature of the site has seriously affected all the finds. The surface of the pottery has, in many cases, almost entirely disappeared, while most of the iron objects are reduced to shapeless masses of oxide.

Pottery.—Dealing first with the coarse ware representing storage vessels, the proportion of which, compared with the number of smaller vessels of other types and uses, is much greater than usual. Fragments of fourteen such vessels were found, of which twelve are of the double-handled *dolium* type. As far as can be judged from the remains, the average dimensions would be as follows: height, 26 ins., diameter, 20 ins., diameter of neck, 4¼ ins., length of handles, 6½ ins. The large fragments (reconstructed) found outside the south gate (p. 235) appear on the left side of fig. 17, and a handle and typical base (inside view) on the right. The clay used varies considerably; in one or two cases it is of a light-brown colour, free from grit and still hard and sound; in another the colour is dark brown and the clay very gritty and soft, while in several it is like the last in texture, but of a reddish colour. All the vessels are well shaped, the handles showing careful finish. Not one is of the rough, hand-made quality, a typical example of which is the large vessel recovered from the well at Barhill (*Proc. Soc. Antiq. Scot.*, vol. XL, p. 469).

The two remaining vessels of this class differ considerably from the above. One is represented by a fragment of rim only, but nearly half of the other is left, and appears (reconstructed) in the middle of fig. 17. It was found just within the south gate. In shape, it is more nearly spherical than the *dolium*, the bottom being flatter, though formed in the usual manner. The circular plug of clay, inserted in the bottom

Photo by F. G. Simpson. FIG. 16. THE STANE GATE AT SECTION M.N., LOOKING N.E.

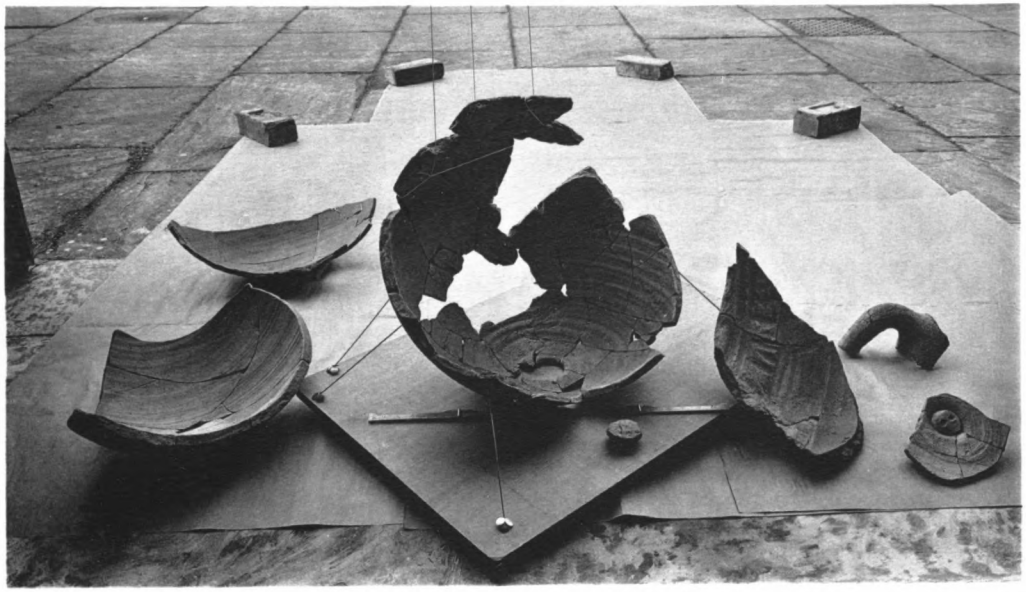


Photo by F. G. Simpson. FIG. 17. REMAINS OF STORAGE VESSELS.

after the shaping of the vessel, was lying loose among the fragments and was not replaced when the fragments were fitted together. The unusual feature is the absence of the contracted shoulder and neck and, apparently, of handles of any kind. At a height of 19 ins., just where the shaping of the shoulder would commence, the sides end abruptly in a rim which is quite plain on the outside, but shaped on the inside as shown by the detached fragment lying against the right-hand side of the board (fig. 17). The roughly perpendicular markings about 3 ins. below the rim, on the inside, are the only signs of hand-work done independently of the wheel. The diameter of the mouth is about 15 ins. and the full diameter of the vessel 23 ins. About one third of the rim remains, including the detached fragment. There is no trace of a handle on what remains, but although no portions of handles were found, it cannot be definitely said that the vessel had none. If it had any they would probably be slight projections like those of modern bread jars. Dr. Anderson assures us that no such vessel has come under his notice at the Edinburgh museum, nor has Mr. Curle met with one at Newstead. Mr. J. Ward found no vessel of this type at Gellygaer, but suggested to us that it may have been used for burial purposes, the wide mouth being adapted to receive the *ossuarium*. It was, however, found at the Roman surface level, lying near the edge of the road to the south gate. No remains of vessels of the *amphora* type were found.

The smaller vessels are thirty-six in number, and fortunately it is possible to recover the shape of either rim or of base in all but seven cases. On plate v twenty-two sections are given; except in four cases no attempt has been made to complete the sections beyond the portions supplied by the fragments. The diameters given below refer to the extreme outside diameters, unless otherwise stated.

There are two examples of the *mortarium*, one dull red in colour, and the other pale buff, the former being 11½ ins. in diameter. In section, they are the same as no. 1 (2nd section), plate XI of the Gellygaer report, and are not shown on plate V.

Portions of three vessels were met with, similar in shape to the *mortarium*, but lacking the usual thickness and strength, as well as the incrustation of quartz or flint on the inside. Whether they possessed the characteristic spout or not we were unable to ascertain. No. 3 (plate V) represents the most complete of the three, the diameter being about 9 ins. It is of salmon-coloured clay, free from grit, but very soft. No portion of the base was found. The second is light buff in colour and rather larger than the first. The third is represented by the base no. 21, and a small portion of rim similar to that of no. 3. The clay is gritty and of a grey colour. The bases of no. 3 (1) and (2) may have been similar to no. 21.

No. 1 represents a bowl of a shape not found hitherto in the Wall district. It is 7½ ins. in diameter and closely resembles no. 2, plate X, Gellygaer, except that the base rises in the centre like that of no. 4, plate X. The clay is gritty and of a brown colour. The whole of the outside has been covered with a bright black engobe, but the upper surface of the rim, which is reeded, and the inside, both retain the colour of the clay.

The only decoration on the outside is a single hollow about 1¼ ins. below the rim. The vessel was found near the drain at the north-west angle. Mr. J. Ward refers to the fact that vessels similar to no. 2, plate X, Gellygaer, have been found at Haltern in Westphalia.

No. 2 is a jug, of which only one fragment of the rim and another of the handle were recovered. It is of bright red ware covered, on the outside, with a blue wash. It appears to be of the same pattern as no. 4, plate III of the Melandra

Castle report. A small fragment of the rim of a second jug of this shape was also found.

Nos. 5, 6, 18 and 19 appear to be examples of Upchurch ware. The clay is, however, not of the deep black associated with the best quality of that ware, but rather of a dark grey colour denoting imperfect firing. Nos. 5 and 6 are decorated with the usual designs of intersecting or zig-zag lines, the former around the body and the latter just below the rim. The remainder of the outer surface is burnished or polished (c.p. p. 88, *Melandra Castle*). No portions of the bases could be found, but a fragment of a flat base belongs to another vessel of the same ware.

Nos. 18 and 19 are about 7 ins. in diameter and denote bowls rather than jars, but no clue to their depth could be gained as the bases were again missing. They are much coarser in body and finish than nos. 5 and 6. No. 18 is roughly burnished and decorated with intersecting lines, but no. 19 is plain.

Nos. 7 and 11 have several details in common and are made of the same, or very similar, clay, which is leather coloured and fine in quality. No. 7 is a small vessel with very thin sides, the diameter of the rim being only $2\frac{5}{8}$ ins., and that of the body not more than $3\frac{1}{2}$ ins. The rim is square in section on the outside and decorated with a single hollow, the only ornament on the body being a similar hollow about 1 in. below the rim. The outside is covered with a dark engobe. No. 11 has a similar square rim, but without the hollow. A portion of the base was found, from which it appears that the complete vessel was about 6 ins. high, and $5\frac{3}{4}$ ins. in diameter. The surface exhibits the colour of the clay, except on the outside of the rim which is blackened. The only decoration appearing on the fragments is a hollow about $\frac{7}{8}$ in. below the rim, containing three parallel reeded lines. These vessels do not appear to belong to any of the varieties of Castor ware.

Nos. 8, 9 and 10 may be described as dishes. No. 8 is of a well known shape and size, its diameter being 8½ ins. and depth 1¾ ins. Fragments of two such vessels were found. One is of soft, dirty white clay with a blackened surface, the other also blackened but of grey clay. Specimens found at Gellygaer are illustrated by Nos. 5 and 8, plate x of that report.

Nos. 9 and 10 are of an uncommon shape. The diameter of each is about 11 ins.; the depth of no. 9 is 1¼ ins. and of no. 10, 1⅛ ins. The clay is buff-coloured, no. 9 being of the same fine quality as no. 3 (2), while no. 10 is of coarser material. Both seem to correspond with no. 9, plate x, Gellygaer, which is made of fine brownish clay, and is of similar diameter though rather deeper.

No. 12 is of light grey clay. This vessel seems above the average size of jars, having probably been about 7½ ins. in diameter, notwithstanding the fact that the sides are much thinner than those of the Upchurch examples. The section of the rim is not a common one. Several fragments of the sides show that some portion of the outer surface was decorated with a pattern in relief, not applied as a 'slip,' but formed during the shaping of the vessel (c.p. no. 3, plate IV, *Melandra Castle*).

Fragments of two vessels are represented by no. 13, one of a dull brick-red colour and the other grey. The diameter of each is about 6 ins.; no portions of the base of either could be found. The shape is uncommon, and as yet we have been unable to meet with other specimens.

No. 14 denotes a smaller jar of more familiar shape. The diameter would be about 5 ins. The clay is similar in colour to that of no. 8 (1), but hard and compact, and with a blackened surface.

No. 15 is another jar, similar in material and finish to no. 14, but of a different shape.

No. 16 represents a small jar made of clay similar to that of nos. 3 (3), 8 (2), and 13 (2).

The fragments of no. 17 are well preserved, the material being similar to that of nos. 14 and 15. No clue to the shape of the body could be obtained.

No. 20 resembles Upchurch ware in some respects, but lacks the pattern of intersecting lines. The base represented by no. 22 was unbroken, but no portions of the sides or rim were recovered. The clay is the same as that of no. 8 (1) and the surface is blackened.

The last vessel to be described, no. 4, is perhaps the most interesting of the collection. It is the only vessel of the so-called 'Samian' ware the shape of which could be recovered. One fragment of another vessel was found in site IV, but is unintelligible on account of its small size. It appears to be undecorated.

No. 4 was found near the oven. The fragments consist of about half the base and a small detached portion of the side, both seriously affected by moisture. When found, the shape appeared to be an uncommon one, and it was not until a few weeks ago that we were able to find, in the York museum, a similar specimen. The vessel may be best described as a cup, and corresponds in outside diameter with the better-known shapes illustrated by nos. 6 and 7, plate XII, Gellygaer report, though it would exceed them in capacity on account of its greater depth. The diameter at the rim would be about $4\frac{1}{8}$ ins., which is slightly greater than that of the York example. As the rim of the latter is missing, the depth cannot be definitely stated until further specimens are discovered.

These remains exhibit two uncommon features. At the bottom, on the inside, there is a flat shoulder or ledge about $\frac{1}{4}$ in. wide and rather less than $\frac{1}{4}$ in. high. From this flat ledge, the sides spring almost perpendicularly. The angle given by the York example is about 85°. It must be pointed out that this narrow flat ledge at the bottom is a definite characteristic

of vessels of shape 30 (Dragendorff), and apparently of no other shape. This is borne out by the fact that the two cups are practically cylindrical in form. The second feature is provided by the remaining fragment of the side. On the inside, the glaze has been removed, but on the outer surface are the remains of regular sunk markings of an elongated diamond shape, which are now generally termed 'engine-turning.' Decoration, the same in appearance and measurement, is present on the York example, commencing above a plain band $\frac{5}{8}$ in. wide. The width of the 'engine-turning' cannot be stated as the vessel is not complete.

Both specimens were submitted to professor Haverfield for examination. He informs us that, in his opinion, both belong to the same shape of cup, and that the shape bears a certain resemblance to one variety of the ornamented type called shape 30, but that at present there is no clear clue as to date, beyond the fact that shape 30 disappears about A.D. 140-150. He also suggests that the thickness of the York cup is more or less certain evidence that it is a late example of the shape, that is, within the limits referred to. It should be stated that the finish of the York cup is inferior to that from Haltwhistle burn, and the clay quite brown in colour, this feature also distinguishing nearly all the specimens of shape 30 in the York museum. The latter cup is much thinner throughout, and its clay is of the true 'Samian' red colour. There is no trace of a name-stamp upon the remains. No reference is made by Dragendorff to cups of this type.

Objects of Iron.—The scythe, found just within the south gate, showed several old fractures, and some fragments were in such bad condition that we were unable to recover the whole of it. The remains measure about 30 ins. in length. The four examples from Newstead vary from 35 ins. to 42 ins. The full width of the blade is $2\frac{1}{2}$ ins. The stiffening rib at the back

of the blade is formed in the same way as in the Newstead scythes, being simply turned over and not forged solid as at the present day. Within 6 ins. of the end nearest the handle, is the same sharp bend found in the Newstead examples. Mr. Curle informs us that, from evidence of pottery found in the same pit, the four scythes appear to be of first century date.

A pickaxe, usually called a 'pioneer's axe,' was found near the flagging at the south-east angle, the pick portion in 1907 and the axe blade in 1908. Its full length is 1 ft. 10 ins., the cutting edge of the blade being 5 ins. wide. No. 1824 in the Chesters museum is a similar tool; several have also been found at Newstead.

Another object has apparently been used for the same purpose as the 'anchor-like object' from BORCOVICUS (shown in fig. 50, p. 292, *Arch. Ael.*, 2 ser., vol. xxv), though the arms are not so pronounced. It has the same projecting loop and is 6 ins. long.

Among the remainder are eight nails, three spear-blades, and nine sockets, some retaining a portion of the blade, and in two cases the cross rivet for fixing the shaft. The best nail is 6 ins. long, $\frac{1}{2}$ in. (max.) square in section, with diamond-shaped head.

One socket appears to be that of a *pilum*. The greatest diameter of the socket is $1\frac{1}{4}$ ins., tapering to $\frac{5}{8}$ in., at which point the solid shank commences, and the section is changed to $\frac{1}{2}$ in. square. The length remaining is about 6 ins. The best preserved spear-blade is 8 ins. long and $2\frac{1}{2}$ ins. broad.

Coins.—During the excavations only one coin was found. It was lying on the top of the south-east corner of the wall of the praetorium. It is a first brass of Trajan. Though very badly corroded, a portion of the inscription remains, and the profile of Trajan is recognisable, but the reverse is quite illegible. The portion of the inscription remaining reads IMP CAES NERVAE TR . . . . . .

Mr. Aquila Dodgson of Leeds, who has examined the coin, is of the opinion that it was fresh and very little worn when lost. It is usually very difficult to draw any definite conclusions from the finding of stray coins. Nothing, however, connected with this solitary coin, or the place of its discovery, is at all inconsistent with the conclusions otherwise arrived at as to the date of the Fort.

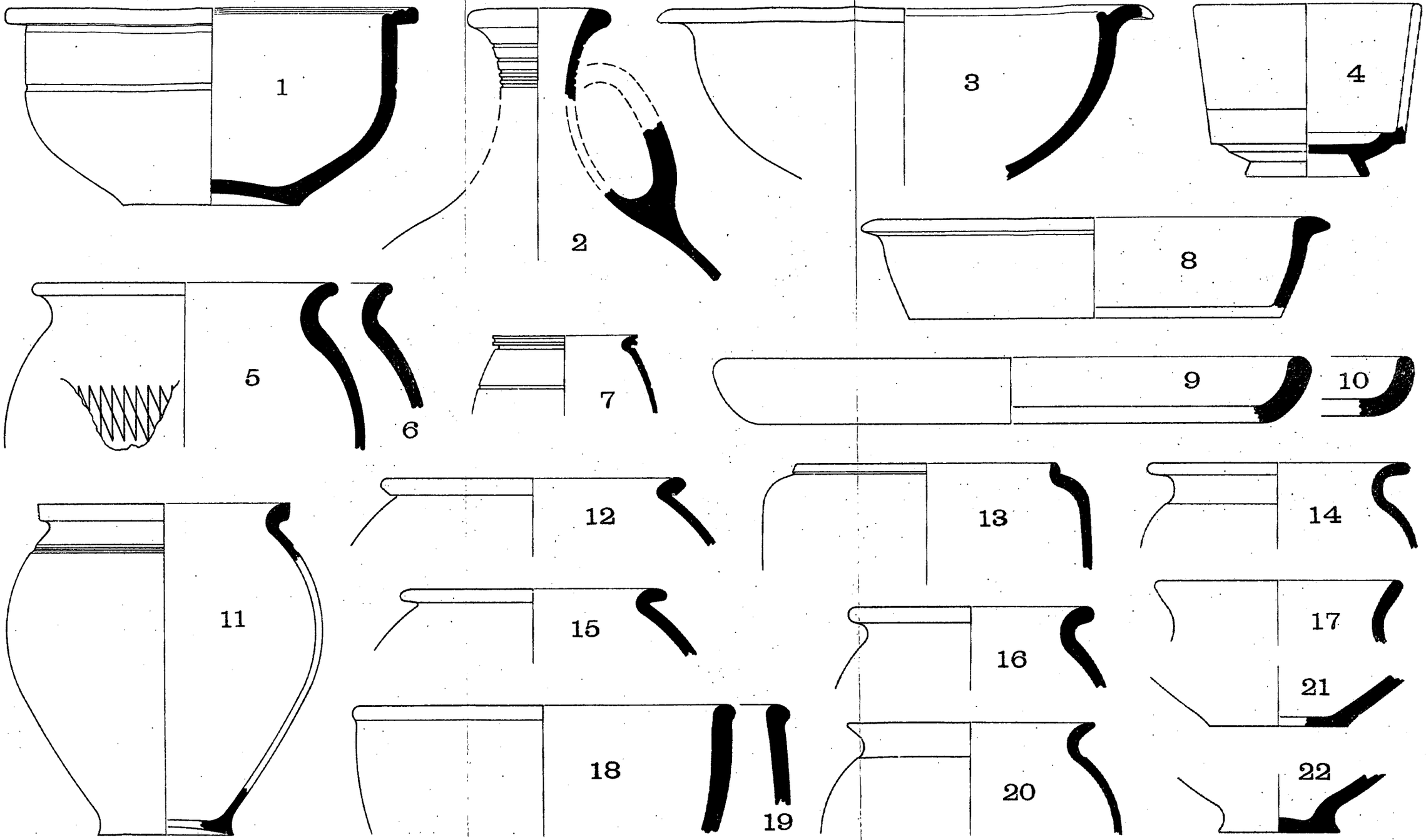
Personal Ornaments.—Near the south-west angle was found a small case or purse, made of a strong material somewhat similar to modern 'box-cloth.' It was not found at the old surface level, but was slightly embedded in the clay backing, and may have been dropped during the dismantling of the Fort. The case is 4 ins. long and $1\frac{1}{2}$ ins. broad, with an oval section. A leather lace has been used to close the case on one side. It contained a brass chain, the links of which are formed in the same manner as those of the gold chain illustrated on p. 427 of the *Roman Wall* (3rd edition). The length cannot be ascertained, as the chain is almost destroyed by corrosion. There is no ornament attached to it, as was the case in the above illustration.

The second and last object of this class is a small hollow piece of iron containing the remains of leather, attached to the iron by rivets. One piece of leather retains four square rivet-holes. It appears to be a portion of a belt-buckle, or other article of a similar nature.

THE PERIOD OF THE FORT.

Undoubtedly the chief interest in the Fort at Haltwhistle burn centres in the question of the dates of its erection and abandonment.

It will be readily admitted that this question is of more pressing importance, and the solution, when found, of greater value than in the case of any isolated fort in the Midlands or the



1907-8 PLATE V. POTTERY SECTIONS SCALE: HALF SIZE H.G.S.

south of England, on account of the proximity of the Fort to the lines of defensive works which we call the 'Wall.'

Though the excavations showed that there is no connexion of any kind between the Fort and the Wall, yet it is obviously useless to discuss the date of the former, without taking into account the knowledge we already possess regarding the date of the latter. The present position of that great question must be stated first.

A century ago, the opinion so clearly and powerfully expressed by Horsley in 1732, that the Wall and mile-castles were entirely the work of Severus, while the vallum represented the Wall of Hadrian, was still almost universally accepted.

Forty years later, the Rev. John Hodgson, with the knowledge derived from later discoveries, was able to prove the inaccuracy of many of Horsley's deductions, while the discoveries of Mr. John Clayton enabled Dr. Bruce, in 1867, to confirm Hodgson's views so convincingly that opinion, almost as universal as in the former case, ascribed all the works to Hadrian, crediting Severus with restorations only.

Opposition to this view continued for various reasons, but the arguments were confined to the knowledge already gained, until the discovery in 1895 that the rampart accompanying the ditch which runs parallel to the Vallum for some distance, to the west of AMBOGLANNA, was composed of piled sods. The rampart had, however, no stone foundation like that of the Antonine Wall. Another theory has resulted from this discovery, which attributes a turf wall, running generally on the line of the present stone wall, to Hadrian, and the stone wall itself to Severus. As no further traces of such a turf wall have yet come to light, it must be admitted that at the present time the last theory is 'not proven.'

Respecting the stations on the line of the Wall or connected with it we have much more certain knowledge than we possess of the Wall itself.

Inscriptions found in many of them show that the stations themselves must have been in existence during the reign of Hadrian. Of special interest to us are those lying nearest to the Fort at Haltwhistle burn, namely, MAGNA and VINDOLANA on the Stanegate and AESICA on the line of the Wall, all of which have furnished inscriptions of Hadrianic date (*Lap. Sep.*, nos. 260; 284; 301: *C.I.L.* VII, nos. 713, 730, 748), as well as many others dedicated to emperors reigning during the second century. It may therefore be confidently stated that the Wall (whether of earth, turf, or stone, matters not) and all the stations in the immediate neighbourhood of the Haltwhistle burn Fort, were in existence during the reign of Hadrian.

The next question arising is that of the date of the Stanegate.

As already stated, antiquaries generally have assigned the original Stanegate to Agricola. It must be pointed out that hitherto evidence has been wanting to support this opinion. Seeing, however, that it is the only connexion between two Forts, VINDOLANA and MAGNA, that existed in Hadrian's time, we must accept it also as being at least as early as Hadrian's reign.

It has always been the desire of British antiquaries to locate the position of the Forts which, according to Tacitus, were established by Agricola. For this reason we realize the danger in the present instance of allowing this wish to become 'father to the thought.'

Returning to the Fort itself it seems unnecessary to discuss the possibility of its having been built later than the Wall, when the large station at AESICA would be in existence.

Three periods, therefore, may be suggested, to one of which the erection of the Fort must be assigned:

(1) During the reign of Hadrian but before the building of the Wall.

(2) Between the departure of Agricola (A.D. 85) and the arrival of Hadrian (A.D. 120).

(3) During the propraetorship of Agricola about the close of his second campaign (A.D. 79).

The evidence for and against the three suggestions may be briefly stated.

On behalf of the first suggestion, it may be urged that the Fort was built by Hadrian's orders, during the survey of the district, preparatory to the building of the Wall. In that case, it would be occupied by those employed in the work and would naturally be dismantled as soon as AESICA was ready to receive a garrison. Much of the evidence appears to confirm this view. The traces of occupation, confined to one period only, and the total absence of any signs of destruction by fire, are unique in our present experience of the Wall district, and prove conclusively that the Fort was never occupied by the enemy. Again, the excavations showed that the building stone had been removed by the Romans, and that immediately following this operation some men of the sixth legion, which Hadrian brought with him from Germany, had worked the quarry on the west side of the Fort, cutting the name of their legion on the face of the rock. It seems reasonable to suppose that when the ramparts of AESICA were erected, the builders would take up their quarters there, utilizing the dressed stone from the Fort for the completion of the internal buildings, at the same time obtaining further supplies of stone from the quarry which had furnished it in the first instance. For whether we hold that the ramparts at AESICA were originally constructed of stone or turf, it will be granted that many, if not all, of the internal buildings would be of stone from the first.

In addition to the evidence of only one occupation, the finds are so few in number that a short occupation, during the building of the Wall and Forts, seems to be the natural conclusion. The character of the finds is not unfavourable to this view. The only coin found is a first brass of Trajan, numbers of which have been

found in the Forts, and in the well of Coventina at PROCOLITIA. The iron objects afford no certain evidence, while the pottery, though obviously not of late date, includes no vessel of a definitely early type, such, for instance, as a 'Samian' bowl of the 'Graufesenque' shape 29, which could be assigned with certainty to the first century. This appears to conclude what may be said in support of the first suggestion, and as it stands, the evidence seems distinctly favourable.

On the other hand, it must be pointed out that if Hadrian's Wall and the ramparts of his Forts were constructed of turf, the suggestion that the dressed stone was removed from the Fort to be used in the internal buildings at AESICA, carries with it the following conclusion. The Fort, which was a temporary structure only, occupied for a year or eighteen months, was surrounded by a wall faced with well squared stones and backed with a bank of puddled clay, while the ramparts of the permanent station were composed of turf only, without even a stone bottoming, if judged by the remains of the turf rampart at Appletree.

The weakness of the first suggestion becomes further apparent when the following facts are considered. With two exceptions, every fort yet examined in the north of Britain, whether isolated or on the line of either Wall, possesses a north gate. These exceptions are Agricola's Fort at Barhill and the Fort at Haltwhistle burn. It is true, in the latter case, that the north ditch was shaped out of a pre-existing water-course, which accounts for the absence of a causeway across it; but had a north gate and road been required there was nothing to prevent the construction of a bridge like that at the south-west gate at Gellygaer. A still more striking argument is afforded by the walling-up of the east gate, for when this was done the Fort had one main gate only, the west gate being obviously designed for the special purpose of access to the water supply.

To support the first suggestion under these conditions further implies that the power of Hadrian, though sufficient to construct a line of works over seventy miles long, was insufficient to keep open more than one main gate of a Fort within his own lines. Lastly, this gate faced in a direction opposite to that in which the unfinished works lay, which it would be the duty of the garrison to protect from attack.

Such evident contradictions entirely disappear when a pre-Hadrianic date is suggested, for in that case the whole purpose of the Fort is altered. Instead of being a temporary habitation for the builders, or guards, of a structure some distance away, it becomes an isolated post, the garrison of which is intent upon the defence of its own ramparts.

The reason for the absence of one gate and the walling-up of another is then apparent, for the ability to defend a full complement of gates depends upon the size of the garrison. Taking the dimensions of BORCOVICUS and the number of its garrison as a basis of comparison, it will be found that, judging by area, the garrison of the Fort would number about 150 men, but if judged by the length of its ramparts 350 men would be required. Naturally the number based upon the space available inside is the more correct, and if the former figure could be increased to 200, the ramparts would even then be manned with little more than half the strength possible in the case of BORCOVICUS.

Such vulnerable points as gates would naturally require a greater proportion of defenders than the ordinary line of rampart, consequently the absence of a north gate, a road from which would lead nowhere in particular, is not surprising. The purpose of the east and south gates is explained by the branch roads from them which connect the Fort with the Stanegate. The natural weakness of the position on the east side accounts for the closing of the gate on that side rather

than that on the south, for without the aid of extra defences a direct attack could easily be made upon it. The south gate was practically unassailable, any attempt from the east by way of the road being closely flanked by the rampart, while the steep slopes on the south and south-west would render rushing tactics impossible.

In regard to the length of occupation it may be urged that the quantity of pottery discovered is the best guide, and that fifty vessels could not represent a period of more than a year or two. On the other hand, the character of an early occupation is very different from that of a late one. During a campaign and for some time after the first occupation of new territory, the ordinary utensils of an army or garrison would be of metal, the only earthenware vessels really required being those used for storage purposes. The relics of such an occupation should therefore contain a larger proportion of storage vessels than usual; research shows also that the proportion of iron objects found is large.

In the present instance, the finds are exactly of this character. The proportion of storage vessels to small vessels of other types is rather more than 1 to 3, while in the Forts on the Wall it is rarely less than 1 to 15-20. The iron objects number 29, which, compared with a total of 50 vessels, is much above the average. The difficulty of transport also accounts for the absence of large bowls of 'Samian' ware, though a small cup, such as no. 4, plate v, might be carried with safety. Thus evidently a few vessels belonging to the first or early second century represent a much longer period of occupation than the same number found on a third or fourth century site.

The small quantity of articles found may also to some extent be accounted for by the fact that the quiet and systematic dismantling of the Fort permitted it to be stripped of every-

thing of the least value. A further reason may be adduced from the failure to discover in or near the Fort any rubbish pits similar to those found at Barhill, Newstead and CORSTOPITUM which have yielded such a plentiful supply of pottery and other objects of special interest.

The amount of wear shown in the pivot hole at the south gate is much against the theory of a short occupation. The deepening of the hole due to wear is 1¼ ins., which is rarely exceeded by that shown in pivot holes in the gateways of mile-castles and forts on the line of the Wall.

Consideration of the position of VINDOLANA yields valuable evidence. The question may be asked, why should a Fort be established at VINDOLANA, instead of upon the line of the Wall, between BORCOVICUS and AESICA? The reason that may be advanced is that at no point between these Forts is there a level site large enough for a cohort Fort, in conjunction with an adequate water supply. The Bradley burn provides the only constant supply, but where it crosses the line of the Wall, at Milking-gap, the ground is quite unsuitable for a Fort. Farther down the burn, however, a strong position could have been found, to the north-west of Bradley hall. This, it is true, would have been little more than a mile from BORCOVICUS, but the stronger reason why such a site was not utilized seems to be that the Stanegate and a Fort upon it at VINDOLANA were already in existence.

Again, if the position of VINDOLANA is compared with that of the Fort at Haltwhistle burn, a striking resemblance will be noticed. At the former the steep bank of the Chineley burn is the eastern defence, while the west side is weak. The south side is protected by a deep watercourse. The Stanegate passes close to the north rampart, which also overlooks a ravine. At the latter the conditions are similar, but the relative positions of road and fort are reversed. The Haltwhistle

burn is on the west, the east side being weak; the Stanegate passes the south rampart and both north and south sides are protected by natural watercourses. The Fort could not be sufficiently enlarged because the plateau on which it stands is too small for a cohort Fort, nor was such enlargement necessary as a satisfactory site for a large Fort was found on the direct line of the Wall, at AESICA.

The same arguments may be applied in the case of MAGNA, which, like VINDOLANA and the Fort at Haltwhistle burn, commanded an important defile. No suitable site actually on the line of the Wall could be found on the east bank of the Tipalt, and the position of the Fort, with a morass on the north and the Stanegate close to the south rampart, strongly supports the idea that a pre-existing Fort was utilized and enlarged by Hadrian.

Finally, the evidence of the single occupation afforded by the absence of traces of destruction by fire, the dismantling of the walls and the quarry-inscription, is not unfavourable to an earlier date, but simply implies a longer occupation and a successful resistance of attack followed by the removal of the dressed stone and the working of the quarry, during the building of the station at AESICA and the Wall.

After thus examining the available evidence, the result seems entirely in favour of assigning the Fort to a date earlier than A.D. 120.

Little that is definite can be said either for or against the suggestion that the Fort was built after the departure of Agricola but before the arrival of Hadrian. History is almost silent concerning Britain during this period, while modern research gives us little assistance. One discovery is suggestive, that of a portion of a fine tablet, found at York in 1854, which records that the ninth legion erected the memorial in honour of Trajan, A.D. 108-109. The tablet is of such a size and quality as to suggest that works of considerable magnitude had then been

completed. If this was the case at the legionary station of EBURACUM, it is conceivable that Trajan was holding, or even adding to, a line of posts farther north established by Agricola.

On behalf of the third and last suggestion, that the Fort was built by Agricola, A.D. 79, assistance is derived both from history and research.

According to Ptolemy, the Lower Isthmus marked the northern boundary of the Brigantes. It is highly probable that Agricola overran their territory during his second campaign, A.D. 79, at the close of which, according to Tacitus, he erected a number of forts on the frontiers. Dr. Bruce's opinion of the meaning of this statement by Tacitus is as follows:—'He [Agricola] would doubtless make sure of the Lower Isthmus, but that he drew entirely across it "a chain of forts" at all resembling in completeness the stations of the Wall, is more than the passage warrants' (*Roman Wall*, 3rd ed., p. 8, note 1). The verb used in the passage (*circumdare*) certainly implies that the subdued territory was 'surrounded' by fortified posts. If this were the case, the northern boundary would require a larger proportion, the tribes beyond being as yet hostile.

The results of modern research furnish more definite evidence than that of history. During the excavation of the Antonine Fort at Barhill in 1902, an earlier Fort was discovered, the remains of which consisted of the filled-up ditches only, upon which the later buildings had been erected. This Fort is ascribed to Agricola without hesitation, on the evidence of the excavations, and of the definite statement by Tacitus that forts were erected between the Forth and the Clyde, A.D. 81.

There is a striking similarity between Agricola's Fort at Barhill and the Fort at Haltwhistle burn, in size, proportions, absence of the usual number of gates and relation of outer ditch to rampart. Though the area of the latter Fort, within the rampart, exceeded that of the former by nearly 50 per cent., both were prob-

ably designed for garrisons of similar size, the difference being accounted for by the more temporary nature of the Fort at Barhill, where the garrison might be quartered according to the close order adopted in the large temporary camps. The fact that the area of each of these Forts is considerably less than an acre distinguishes them from others in Britain. With one exception, that of the inner Fort at Castleshaw, the remaining Forts hitherto examined contain at least $2\frac{3}{4}$ ac. and have apparently been garrisoned by not less than one cohort of infantry, or one *ala* of cavalry.

A comparison of proportions or dimensions, though not reliable as evidence, is nevertheless useful. The rampart at Barhill would almost certainly be placed close to the lip of the inner ditch. At Haltwhistle burn, the Fort had no inner ditch, the rampart with its perpendicular face of masonry and greater height being apparently strong enough. The dimensions of the former, measured over the inner ditch, are 191 ft. × 160 ft. and of the latter, measured over the rampart, 207 ft. 6 ins. (average) × 167 ft. 6 ins.

At Barhill, there is only one gate, which is at the middle of the north-east side. A striking passage from Tacitus shows that Agricola's Forts were isolated, and that the garrisons were dependent upon their own efforts for their defence. 'So they wintered there without feare, every garrison garding it selfe, and needing no helpe of their neighbours; the enemies assaulting sometimes, but in vaine without any successe. . . . .' (Sir H. Savile's Translation.) Under such circumstances the presence of only one gate is not to be wondered at. As the east gate at Haltwhistle burn was included in the original design, but was afterwards closed, we may conclude that a reduction in the strength of the army of occupation took place after the erection of the Fort. This could hardly occur during the building of the Wall, whereas such a change would almost certainly take place, either during Agricola's campaigns, when

his main armies moved northwards, A.D. 80, leaving the small garrisons quite isolated or, perhaps, more probably after his departure A.D. 85.

The wide spaces between the ditch and rampart at Haltwhistle burn seem to correspond in some way with the irregular outer enclosures at Barhill. The total area within the outer ditches at the latter is about $1\frac{1}{2}$ ac., which may be compared with $1\frac{3}{4}$ ac. at the former. It is quite possible that palisades were erected along the edge of the ditch at Haltwhistle burn, no traces of which could be expected to remain as when the Fort was purposely dismantled all timber would be carefully removed.

The discovery of a composite rampart, of one date, at Gellygaer, is the best evidence against the theory that masonry ramparts were not used in Britain during the first century. The accepted date of the building of Gellygaer is A.D. 75-78, the Fort having been probably abandoned about the end of the century. The composite rampart at Haltwhistle burn is therefore not abnormal.

Mr. Curle kindly informs us that Agricola's Fort at Newstead had earthen ramparts, and that the composite rampart there belongs to a later occupation.

The uncommon type of gate found at Haltwhistle burn does not directly help us as yet in fixing a date for its erection. It is distinctly of a less advanced type than the usual double-portalled gate furnished with high square towers on each side, which both defend the entrances and enfilade the ramparts.

In the Fort of Agricola at Newstead, of which little more than the ditches remain as evidence, the gates are placed at right angles to the general line of the rampart. This is made possible by advancing the rampart on one side of the gate, the advanced portion being furnished with a curved return that permits the retired portion to be enfiladed throughout its entire length.

Such an arrangement appears to be an advance upon that found at Haltwhistle burn, where the curved returns act only as a defence to the actual portal.

The tables of the Ravenna Geographer contain internal evidence which leads antiquaries to hold that they were compiled from road-books at least as early as Hadrian's reign. Mr. C. J. Bates accepted this view when he suggested [*Northd.*, p. 19] that GABAGLANDA, which is placed between MAGNIS and VINDOLANDE in the Ravennas list, is the original name of the Fort at Haltwhistle burn. Though we may agree with Mr. Bates [*Northd.*, p. 19] that the Fort at Haltwhistle burn deserved a name, and further that 'there seems no more reason for confounding Gabaglanda with Amboglanna than with Glannibanta,' it will be well to leave the question of its name an open one until further knowledge is gained of the Forts on each side of it, and of the road upon the line of which it stands.

Lastly, the absence of signs of destruction by fire is as favourable to the third suggestion as to the first or second, a longer occupation merely being implied in each successive case.

The sole argument against the third suggestion is that the longer the occupation, the more numerous must be the finds especially of pottery, and that fifty vessels cannot represent an occupation of forty-one years. Why this argument should not apply in this case has already been fully shown.

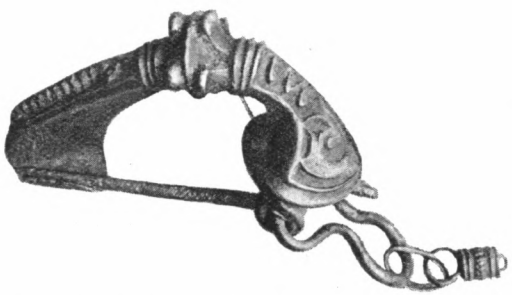
Little has been said regarding the character of the pottery discovered, because so little is known of wares and shapes other than 'Samian.' In the near future, however, the uncommon shapes found in the Fort may yet furnish the evidence that is lacking to-day.

In conclusion, although the evidence entirely favours a pre-Hadrianic date, it seems impossible in the present state of knowledge to determine definitely to which of the two earlier periods the Fort belongs.

The expenditure in wages, for the work covered by this report, was 49*l*. 7*s*. 0*d*. A grant of 10*l*. was made by this society to the excavation committee for this work in 1907, and a further grant of 10*l*. in 1908, for general excavations. Dr. Hodgkin very kindly handed to the committee in 1907 the sum of 10*l*. from the old excavation fund.

We take this opportunity of acknowledging very kind donations by Messrs. W. Parker Brewis, S. S. Carr and F. W. Shields, towards the expenses of the work.

In conclusion, we wish to offer our best thanks to Mrs. Clayton, not only for permission to excavate, but for her warm interest in the work, both at the Fort and elsewhere; to the members of the excavation committee of the N.S.A., and to the following gentlemen: Dr. J. Anderson, F.S.A. Scot.; Mr. R. Blair, F.S.A.; Professor Bosanquet; Mr. F. A. Bruton, M.A.; Mr. J. Curle, F.S.A. Scot.; Mr. A. Dodgson; Dr. Haverfield, F.S.A.; Mr. T. H. Hodgson, F.S.A.; Dr. G. Macdonald, F.S.A. Scot.; Mr. T. May, F.S.A. Scot.; Dr. G. Neilson, F.S.A. Scot.; Mr. A. Park, F.S.A. Scot.; and Mr. J. Ward, F.S.A., who either visited the excavations or gave us the benefit of their experience, during the compilation of the report.



LATE CELTIC ENAMELLED FIBULA FROM THE TYNE.