ART. XXIII.—*The Milecastle on the Wall of Hadrian at the Poltross Burn.* By J. P. GIBSON, F.S.A., and F. GERALD SIMPSON, with contributions by Professor R. C. BOSANQUET and H. H. E. CRASTER, M.A.

Communicated at Keswick, July 7th, 1910.

INTRODUCTION AND HISTORY.

DURING the summer of 1909 further examination of the Samian pottery (now in the Chesters Museum; table-case G) and the remarkable series of coins which were discovered at Nether Denton in 1868 (these *Transactions,* O.S., i., p. 88), seemed to indicate a pre-Hadrianic occupation of that site.

Before 1896 a Roman road, in continuation of the Stanegate and leading towards Carlisle, was supposed to pass Nether Denton, but in that year some search was made for it, which proved unsuccessful (these *Transactions,* O.S., xiv., 422). The excavation of the fort at Haltwhistle Burn in 1907–8 (*Arch. Ael.,* 3rd ser., vol. v., p. 213) suggested the existence of a series of forts on the Stanegate, VINDOLANA, Haltwhistle Burn Fort and MAGNA lying upon its course at fairly regular intervals. VINDOLANA and MAGNA, although occupied in Hadrianic times as Wall stations, differ from the others in Northumberland, being unconnected with the Wall and some distance from it. Like Haltwhistle Burn, they are in close contact with the Stanegate and command defiles furnishing an abundant supply of water.

The pre-Hadrianic character of the remains from Nether Denton suggested the continuation of the Stanegate from MAGNA westward, and the possibility of the existence of another fort upon its line between those sites. The high

tcwaas_002_1911_vol11_0026

FIG. 1. GENERAL VIEW, LOOKING N.

ground commanding the defile of the Poltross Burn seemed to furnish an adequate position for such a fort. The continuation of the road for a part of the distance was not really in doubt. Its course was described by Maclauchlan, and it can be traced to-day, on the surface, most of the way to the Gap farm, a third of a mile east of the Burn, where it becomes "exceedingly obscure; its bearing would however strike the Poltross Brook about 100 yards above the place where the Vallum crosses." (*Memoir*, p. 50). In 1886, it was supposed that the crossing of the Burn by the Stanegate had been discovered, and that the road had been carried down deep stone-faced cuttings to a bridge (*Transactions*, o.s.. ix., p. 164), but in 1897 it was found that the cuttings were simply the Vallum ditch carried down as nearly as possible to the edge of the stream.

It was therefore decided to search the west bank of the Burn, south of the Vallum, for traces of the road, and afterwards to examine the "camp" on the Throp farm (*Memoir*, p. 52) which from surface indications bore no resemblance to the other four small camps of the supposed "third line of defence" in this neighbourhood.

The Earl of Carlisle, the owner of the Throp farm, having kindly given the required leave to excavate, the work was begun in September, 1909. Following Maclauchlan's suggestion, which seemed to be confirmed by surface indications, two series of trenches were cut on the crest of the steep western bank, but they failed to reveal any traces of a road. When at a loss where to continue the search, it was decided to keep the men employed by a short re-examination of the site of the milecastle close by, which was partially uncovered in 1886.

Less than two hours' work revealed the eastern jamb and passage wall of the south gate, and the remains of a wall built out from the jamb to reduce the width of the entrance. This was not mentioned in the report of the

work done in 1886, and as it exactly reproduced the arrangement at the south gate of Winshields milecastle, excavated in 1908, it was decided for a time to discontinue the search for the Stanegate and to proceed with the excavation of the milecastle.

The greater part of the north wall and gate was soon found to be within the boundary of the North Eastern Railway Company. Leave to excavate, up to the foot of the embankment, was readily granted by Mr. C. A. Harrison on behalf of the Company.

The work was continued until October 19th, when about one third of the area was uncovered. After remaining open during the winter, work was resumed on April 18th, 1910, and completed on June 7th of that year. It was left open for public inspection until August and was then entirely filled in.

In resuming the search for the Stanegate, it was thought that an examination of the Throp "camp" which lies about 380 yards to the south-west of the milecastle should furnish some indication of the line of road that might be expected to pass either on the north-west, or the south-east of it. Excavation proved the "camp" to be not a work for temporary occupation, but a fort, similar in area and in the arrangement of its gates, to that found on the Haltwhistle Burn. The position of its single lateral gate gave the first clue to the course of the Stanegate, which was at last discovered, about 150 yards south of the earlier trenches, passing on the south-east of the fort at a distance of nearly 100 yards, and running in the direction of Nether Denton.

After completing the excavation of the Throp Fort, the Vallum was further examined, and the retaining walls of the ditch on the west bank completely exposed for the first time. Finally, the Roman military way, or "Mural Road" was found carried along the north berm of the Vallum, just south of the milecastle.

It is hoped that the report of this latter work will be completed next year. From small beginnings, the work increased with the investigation of so many different features and finally covered a large area. Our best thanks are due to Mr. James Armstrong of the Throp farm for his kindness and help on many occasions, and for his ready consent to the extended scope of the work.

The existence of this milecastle has been known since the days of Horsley, but, even in his time, the surface indications were not very evident, and its chief distinction was its name "The King's Stables," which it seems to have got in mediæval times.

In 1886, an examination of the site was made by the Excavation Committee of this Society. Their report appears in these *Transactions*, O.S., ix., p. 164. Traces of the trenches then made were still visible in 1909. Part of the south gate, more than half of the east internal building and corresponding portions of the south and east outer walls were then uncovered. After a description of the remains, the report states that "apparently the interior had consisted of a number of small rooms but the place had been so smashed about when the railway was made that a plan could not be got." During the excavation, some Samian and other pottery was found, of which however all trace has been lost.

Site and Surroundings.

The natural position of the site of the milecastle is a strong one. To the east, it is defended by the very steep banks of the Poltross Burn, which runs northward fifty feet below. On the north-west, the ground slopes down rapidly to a small natural watercourse where the surface still is swampy. The site itself is not well adapted for building purposes, as it rises from north to south with a slope of one foot in five. The consequent terracing of the internal buildings, however, adds much to the interest

and value of the excavation. The slope ceases at the south wall of the milecastle which is not commanded by the ground beyond. During successive periods of occupation and ruin this slope has caused an accumulation of soil and débris at the lower (north) end of the milecastle that has preserved the Great Wall, which forms its northern rampart, to a height of nearly nine feet. The remains of the south wall are very scanty, one half having been entirely removed.

This destruction dates from the making of the railway only. During its construction in 1835, the contractors used the level ground for the storage of plant. They also used as ballast much of the surface material including the north mound of the Vallum and the south-west portion of the milecastle, making a waggon-way along the west wall for its removal. This is shown in section A B, Plate I., the " tip " being marked 1835. Probably the size of the waggon-way prevented the excavators of 1886 from recognizing it as the wall of the milecastle.

The next milecastle to the east is on the Chapel House farm ; it is distant about 1675 yards. That on the west, overlooking the Irthing at Harrow's Scar is 1610 yards away. The latter can be seen from Poltross Burn, but not the former.

A general plan of the vicinity, showing the relation of Wall and Vallum, is given in these *Transactions*, O.S., XV., facing p. 190.

Dimensions and Proportions.

In the report of 1886, the opinion was expressed that " the King's Stables is something more than a mere milecastle," because of its position as guarding the passage of the Poltross Burn through the Wall. Had the writers known the large size of the " castellum," as well as that of the next at Harrow's Scar, no doubt this opinion would have been further strengthened. Though the crossing

point of two or three streams appears to be closely guarded by " castella," the cases where no such provision has been made are the more numerous, for the Tipalt, the Haltwhistle Burn, the King Water and the Cambeck cross the Wall more than a quarter of a mile from the nearest milecastle.

In general outline and arrangement of gateways, Poltross Burn corresponds with the milecastles already excavated. The outer walls form an approximate rectangle, the average inside dimensions of which are 70 feet from north to south and 60 feet 9 inches from east to west. Where the side walls meet the north wall the corners are angular, as usual ; the southern corners have been rounded, not only on the outside, but on the inside also. The south-east corner alone remains, but the shape of the other may be safely inferred. At the present time only two milecastles, Poltross Burn and Harrow's Scar, the next in order to the west, are known to have the southern corners rounded inside (these *Transactions*, O.S., xv., p. 352). The gates are placed approximately in the middle of the north and south walls. The course of the Great Wall at the north-east corner is particularly interesting. In the case of nearly all the milecastles, as at Housesteads, Castle Nick and Harrow's Scar, the line of the Wall is fairly straight. At Cawfields a sharp turn is made just outside the west wall, but at Winshields the Wall makes a turn of 15° northwards, in the " north wall " of the milecastle, at the east jamb of the gate. There is a similar, though very slight, turn, of not more than 1° at Poltross Burn, which can just be detected in the plan, but 25 feet from the east jamb of the gate and still in the " north wall," there is a considerable turn of 16½° northwards. From this point the Wall takes a straight course for a third of a mile to Gap.

At the same corner, the south face of the Wall is thickened for a length of 11 ft. 7 ins. so as to form a

massive buttress for the corner of the milecastle, the foundations of which are on ground beginning to slope steeply to the Burn. The Wall was traced eastward from the turn for 35 feet down this slope, beyond which it is entirely destroyed. At the north-west corner, the Wall could not be examined, being too near to the railway embankment, but its course from the gateway to the Vicarage garden appears to be straight. As the ground rises slightly on the outside, a buttress need not be looked for at this point.

The inside corner was only 1 foot from the railway tool cabin, and the old stone boundary wall had to be removed before this area could be examined.

The completeness of the internal arrangement was the feature of the excavation. Hitherto the knowledge of these details was imperfect, and in consequence the nature of the occupation, and the use of milecastles generally, could not be certainly decided.

The most definite account of internal buildings is that given by Hodgson of the milecastle on King's Hill, east of Housesteads, which was destroyed, apparently, in 1832. He says that it had " an interior wall on every side, at a distance of about twenty feet from the exterior wall " from which he inferred " that the space between the walls had been roofed and the centre uncovered " (Bruce, R. W., 3rd edition, p. 178). From this account it is clear that the foundations at least of these buildings were of stone. Stone foundations are not definitely mentioned in the accounts of Cawfields and Housesteads, though buildings similar in plan to those at King's Hill are hinted at. The building which can be seen at Castle Nick is undoubtedly Roman, but clearly later than the outer walls, while at Winshields, the whole area is so badly disturbed that only one fragment of internal walling, about 16 feet long, parallel to the south wall, was found. At Harrow's Scar, traces of an internal wall were noticed in 1898 (*Transactions*, O.S., XV., p. 353).

At Poltross Burn the arrangement was recovered intact, and consists of a pair of long barrack buildings, separated from the outer walls by narrow passages, and placed, like the orthodox *strigæ*, one on each side of the road leading from gate to gate. A fall of over 9 feet in the length of the buildings necessitated a considerable step, or difference in level, between the floors of the several compartments. In the original plan, each building had been divided into four rooms of equal size, but in two later periods the number was reduced to three. In front of each, and distinct from the road, was a path which originally had been roughly terraced like the rooms within, while the road followed the natural slope of the ground.

The buildings do not occupy the whole length of the interior, spaces about 9 feet wide being left at the north end, and over five feet wide at the south. How the latter were utilized cannot be stated definitely, but the north-east corner was occupied by a flight of steps leading to the rampart walk, while in the north-west corner the cooking, or baking, oven of the garrison was placed. Striking evidence of change was obtained in connection with the oven, for no fewer than five structures had been built one upon another. In the north gate, four floor levels were found, the alterations including a reducing wall in the same position as that at the south gate.

The area within the walls is about 472 square yards, nearly 50 per cent. more than that of any known mile-castle, except Harrow's Scar. This fact, however, does not seem to have its usual significance in the present case. The following is a list of milecastles, the accurate dimensions of which are known at the present time :—

Name.	N. to S.	E. to W.	Area.
	Ft. In.	Ft. In.	Sq. Yds.
Housesteads ...	49 6	57 6	316
Castle Nick ...	61 6	50 6	345
Winshields ...	60 0	48 9	325
Cawfields ...	49 0	63 0	343
Poltross Burn ...	70 0	60 9	472
Harrow's Scar ...	75 0	65 0	541

The first four clearly fall into one class, to which many others, judging from surface indications, almost certainly belong, but the last two stand alone, unless the site at Drumburgh be a " large milecastle " (*Transactions*, o.s., xvi., p. 81).

The accommodation for a garrison was, however, just as large in the average milecastle as it was at Poltross Burn, where the area covered by the buildings is only 208 square yards, or less than half the area within the walls. If the King's Hill arrangement be applied to Cawfields, it will be found that no less an area than 218 square yards would be roofed. A road 15 feet wide, from gate to gate, would occupy a further 82 square yards, or 300 square yards in all, still leaving over 40 square yards for ovens, or other purposes. It is highly probable that the governing factor in a milecastle plan was accommodation for a certain garrison, and that beyond this the various bodies of troops engaged in building the Wall had considerable latitude as to details.

The subsoil is a gravelly clay, containing many boulders, some of which are of grey granite. Here and there are beds, or pockets, of sand. Except where these occur, the subsoil affords a very firm foundation. Below the upper, glacial, deposits are the carboniferous series. They are exposed in the banks and bed of the Burn, and probably furnished the whole of the building stone used in the milecastle, when first constructed.

tcwaas_002_1911_vol11_0026

FIG. 2. GENERAL VIEW, LOOKING N.E.

The Defences.

The Ditch of the Great Wall.—The railway embankment entirely obliterates the ditch near the milecastle, making it impossible to prove its width and depth. Nearly opposite the turn in the north wall, however, it was possible to trench across the berm and locate the south lip. The berm, which was 19 feet wide at this point, was nearly level and showed no signs of disturbance.

Between MAGNA and the Irthing the ditch has evidently been of exceptional size, for in several places to-day the remains measure fully 50 feet in width. This is shown plainly in Fig. 2, on the east side of the Burn, the solitary tree near the right-hand top corner of the plate being in the ditch. On the north-west of the milecastle, the north lip is sharply defined for a short distance, just beyond the foot of the embankment. It is here fully 70 feet from the face of the Wall. The berm appears to be about 24 feet wide at this point. On Plate I., opposite the milecastle, a width of 45 feet and a depth of 15 feet have been indicated. There is no ditch outside the south and west walls.

It is not yet known how roads from the north gates of milecastles were carried over the ditch. There are no examples of original causeways, though in one or two cases the ditch appears to have been filled up in modern times. In the numerous cases where causeways are certainly absent, remains of bridges have still to be searched for. On the plan, the line of the ditch is continuous.

The outer walls and Great Wall.—The general method of construction of the outer walls of the milecastle and the Great Wall to the eastward, follows that of the Wall throughout its length and consists of outer facings of worked stones, laid in courses with lime mortar, having a core of rubble also made solid with mortar. The courses follow the slope of the ground throughout. Even in the east and west walls, where the slope is about 1 in

5, there is no trace of the horizontal work found elsewhere in hilly country.

The underground work is particularly interesting. The foundation trenches have been from 15 inches to 18 inches deep. Even where the subsoil is sandy, very little "cobble and clay" foundation has been laid at the bottom, and in several places there are no placed stones below the footing course. At the outer face of the west wall, on both sides of section A B (Plate I.) the ground rises sharply and falls again within a few feet. This is caused by some large boulders, which the builders had made no attempt to remove, consequently the depth of the foundations varies considerably, as shown in the section at that point. The difference in depth of the foundations (measured from a horizontal line) between the inner and outer faces at other points is due to the slope on which the walls are built, and to the great width of the footing course.

The faces of this course are composed of large flat stones, from 3½ inches to 5 inches thick, generally roughly dressed on the face, and from 16 inches to 24 inches long, the space between being filled with rougher stones, similar to those of the core above. The average width of the course is as follows:—North wall, 11 feet 5 inches, south, 10 feet 8 inches, east, 11 feet, and west, 11 feet 2 inches. Above this course there are offsets on both faces, about 6 inches wide on the outside and from 6 inches to 12 inches on the inside.

The next stage, which is thus reduced in thickness, is uniform in all the walls and on both faces and consists of three courses, the two lower being of ordinary walling stones, but the third of large "flags" from 2½ inches to 4 inches thick, often 15 inches wide on the face, and from 18 inches to 24 inches long. Some lime mortar was used in these courses, but there was also a considerable amount of clay, while below the flag course, the core appeared to

contain more clay than lime, as the binding material. The height of the three courses is about 20 inches on the outside of the north wall and 18 inches on the inside: elsewhere it is from 15 inches to 18 inches.

From various indications it is probable that nearly the whole of this work was intended to be below the surface, and that the flag course indicates the general ground level, at least outside the milecastle.

Above, the wall is still further reduced, by offsets 3 inches wide on the outside, and from 3 inches to 6 inches wide on the inside. The north wall is not further reduced, the final thickness being about 9 feet 2 inches. That of the south wall was probably the same, but the inner face is so much destroyed that it is impossible to determine the thickness exactly. On account of the steep slope, the outer face of the east wall is considerably stepped. Near the buttress there are four offsets, but the final thickness of the wall is not less than 9 feet 1 inch. At section A B (Plate I.) no part of the regular wall face remains and the indications shewn by dotted lines are inferred. At the west wall, where the slope is in the opposite direction, there are two offsets on the inner face, the final thickness being again about 9 feet 1 inch. Such a great thickness throughout is unique in the milecastles, though the north walls at Cawfields and Housesteads have been increased near the gates to over 9 feet. At Winshields, the uniform thickness throughout is only 6 feet 9 inches.

The inner face of the north wall is exceptionally well preserved (Figs. 1, 2, 7, 11, etc.). At the north-west corner it stands thirteen courses (7 feet 6 inches) above the offset (flag course), or sixteen (9 feet) above the footing-course, and it maintains a height of 8 feet 6 inches as far as the north gate. It is probable that several courses were removed near the corner when the railway was made, for the foundations of the old boundary wall touched the facing stones.

tcwaas_002_1911_vol11_0026

It cannot claim to be the highest unrepaired portion of the Roman Wall remaining, as the west side of the gateway passage at Housesteads milecastle is 10 feet 4 inches above the first period floor level.

On the east side of the gate, the inner face again attains a height of 8 feet 6 inches, but is reduced from fifteen courses to eight at the north-east corner (Fig. 7).

Between the gate and the north-west corner, the eighth course above the offset is much thinner than the others. East of the gate also, the eighth course is somewhat thinner and more regularly laid than those above and below. This feature appears to correspond with the familiar " bonding-courses " at AESICA, and in both the milecastle and fort walls at Housesteads, which are eight to nine courses above any offset. Whether this course continued round the other walls could not be determined. The west wall stands high enough to show it at the corner, but the face is hidden by the ovens.

The north face is much destroyed and retains only four courses above the offset, or seven (3 feet 4 inches) above the footing-course. West of the gate, it may be better preserved, but it could not be examined on account of the embankment.

The east wall has suffered much from the steepness of the slope to the Burn, the outer foundations being entirely removed for a considerable distance. At the north-east corner (inside), the alternate bonding of the seven courses which remain can be plainly seen in Fig. 7. The core appears to have been built up continuously throughout. The curves at the south-east corner have been regular and concentric, the radius at the outer face being about 16 feet. A short length of the curved face remains, but it ends abruptly, 25 feet east of the gate. The extra wide foundations on the east side apparently extended round the curve, but no stones were found in position.

The illustrations show that the character of the masonry

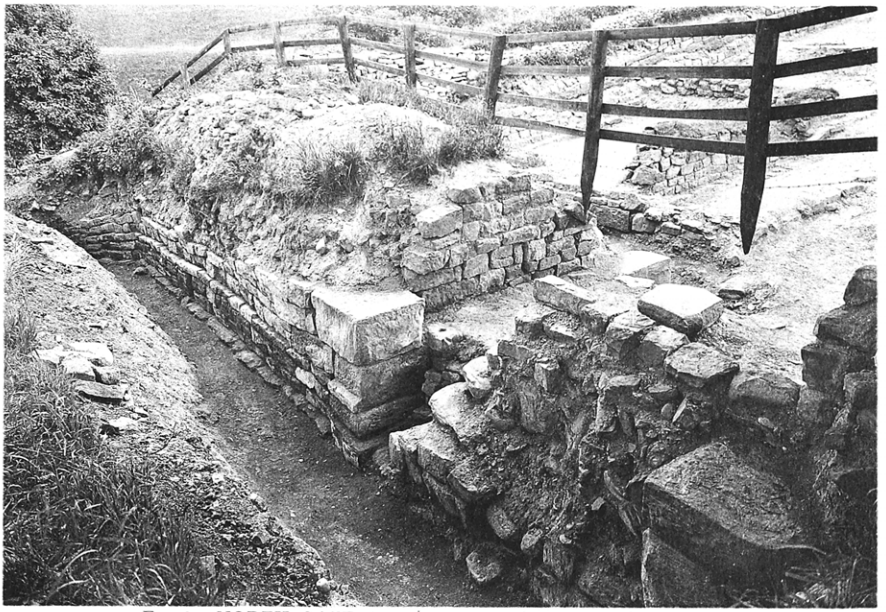


FIG. 3. NORTH GATE, N. WALL AND TURN AT N.E. CORNER.

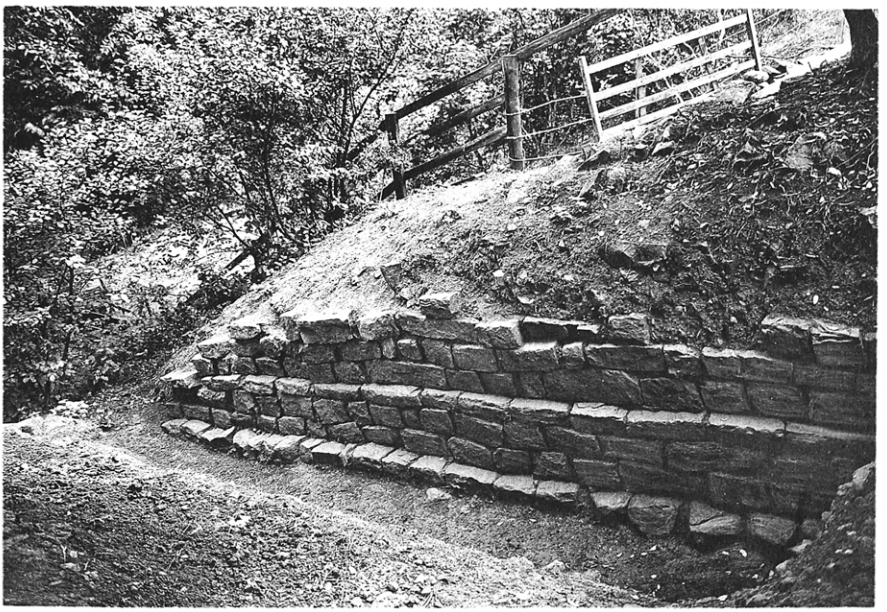


FIG. 4. NORTH FACE OF GREAT WALL.

is rougher than the general average of the work on the Wall. Probably this is entirely due to the quality of the building stone, which is thinly bedded, often shaly and brittle, and very uneven in its fracture. The stones are long and narrow on the face, and quite unlike those with almost square faces so common elsewhere. The roughly broken ends have caused many wide joints between the stones. In only a few cases was there evidence of the use of a pointed tool on the face. The quality, even of the original work, varies very much in the different walls. The best is seen in the west wall near the ovens (Fig. 13), and the north wall west of the gate: the corresponding portion east of the gate (Fig. 7) is extremely rough throughout, but possibly the four upper courses may be repair work.

The original mortar has been of poor quality and has almost entirely decayed. The uneven quality of the mortar in different portions of the Wall is, however, well-known.

Though the foundations of the walls were exposed throughout on the inside, and for a considerable length on the outside, no small objects and not half a dozen fragments of pottery were found below the level of the offset, that is *in* the foundation trench, the only "finds" in the filling being a few broken food bones. The pottery of the first period generally began to be met with just above the level of the offset.

The details of the construction of the milecastle walls apply in full to the Great Wall at the north-east corner, and, if further evidence be needed on this point, the conclusion is certain that they are parts of one work, built at the same time. The characteristic underground work is shown in Fig. 3, the footing-course, three courses and offset, with the regular face above, being continuous throughout the north face and past the turn, which is made just at the commencement of the slope, while in

Fig. 4, the face of the Wall immediately beyond exhibits the same features. There is no break of any kind in the masonry at the turn. The slope shown in Fig. 4 is 1 in $3\frac{1}{2}$. The same arrangement of courses can be seen at the north face of the Wall in the Vicarage garden.

Beyond the broken end, not a vestige of the Wall remains on the west bank of the Burn. The cause of the total destruction is clear. Above the rock the subsoil is gravel and sand. The stream appears to have deepened its bed very little, but it has worked westwards during part of the period since the building of the Wall, undermining the bank and causing its collapse, as occurs at Harrow's Scar on a larger scale. This evidently happened many years ago, for the stream is at present undermining the eastern bank.

On the south face, the underground work differs from that on the north. The footing projects 2 feet 7 inches from the lowest course, or 3 feet 1 inch from the face, compared with 6 inches to 12 inches inside the milecastle. As seen in the foreground of Fig. 6, it has a rough face of the usual large flat stones, with smaller stones behind. It is continued to the face of the east wall and the buttress is built upon it. The full width, including the Wall, is 10 feet 9 inches, which corresponds very nearly with that of the milecastle walls. This extra wide footing is not a chance feature, for an examination of the Wall on the east bank of the Burn, showed that it is present on the south face there as well, but 2 feet 10 inches wide. The projecting course on the south face of the Wall in the Vicarage garden appears to have been intended to serve a similar purpose. What that purpose was is uncertain, though it might be suggested that the Wall in this neighbourhood was originally designed with a thickness of about 9 feet, but that it was reduced, except in the milecastle walls, after the foundation work was completed. One thing is clear, that there has been no reconstruction

FIG. 5. GREAT WALL AND BUTTRESS AT N.E. CORNER, LOOKING N.

FIG. 6. GREAT WALL AND BUTTRESS AT N.E. CORNER, LOOKING W.

of the Wall from its foundations. The thickness at this point is 6 feet 11 inches and about 7 feet 8 inches in the Vicarage garden.

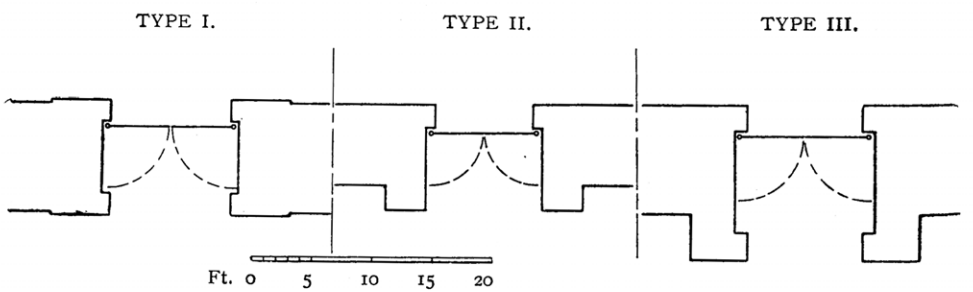
The buttress at the north-east corner is shown in Figs. 5 and 6. The three lower courses, which would be below the surface as usual, project 2 feet 8 inches from the face of the Wall for a length of 11 feet 7 inches, and are roughly stepped. The next three, which are set back 6 inches, follow the slope for 5 feet, but become horizontal at the lower end. The end, or return of the buttress is vertical: the courses are carefully laid, and the stones better dressed than elsewhere in the outer walls. There is definite bonding at the junction with the east wall. This is not the case, however, at the lower end, where the eight lower courses of the Wall face simply abut upon the six lower courses of the return face, leaving the lower part of the buttress free. After the photographs were taken, part of the Wall was removed to ascertain whether the return was continued in the body of the Wall. It is not so continued, the stones actually seen being the last in each course. The first bonded course is the seventh of the return and the ninth of the Wall.

Reference to evidence of reconstruction in the outer walls can now be dealt with, for the chief interest of the buttress lies in the fact that it has been almost entirely rebuilt above the level already described. Of the original face, which was set back a further 4 inches and finally projected 1 foot 10 inches, a small portion fortunately remains. One course is in position for 6 feet and of the course above there is one large stone just at the corner. Two courses higher, another stone, bonded into the east wall, has been allowed to remain when the reconstruction took place, the later facing-stones being behind it. The new face is founded upon the old core, and is uniformly 11 inches within the original line, reducing the projection to 11 inches. The five courses remaining at the junction

are not bonded into the east wall but have formed a straight joint. In the later work the courses are more nearly horizontal, and the stones smaller, but the chief difference is in the mortar, which is of excellent quality, white in colour and quite hard. Unfortunately, to the east the height of the remains is rapidly reduced, and it is impossible to say whether the Wall beyond the buttress was also rebuilt.

Inside the milecastle, it is possible to assign the various alterations and reconstructions definitely to the second, or third period, because of their connection with the floors of those periods. Such evidence is, of course, lacking in the case of the buttress. As, however, the considerable alterations belong almost entirely to the second period, the later face of the buttress is shown as second period work on the plan (Plate I.).

The Gates.—Since 1867, when Dr. Bruce issued the third edition of *The Roman Wall*, no new information regarding the gates of milecastles has been published.



ORIGINAL PLANS OF MILECASTLE GATES.

The examination of the milecastle at Cawfields in 1846, and of that at Housesteads in 1852, led Dr. Bruce to the conclusion that their gates were of a standard type, to which those of any other milecastle might be expected to conform. In this type, the masonry not only of the

piers supporting the outer and inner arches, but also of the walls connecting them, is very massive and heavy, several of the stones at Housesteads each weighing nearly a ton.

The total length of the passage including the piers does not exceed the thickness of the adjoining walls of the milecastle by more than a few inches, as shown in Type I. A re-examination of the north gate at Housesteads, made in 1909, showed that the passage had not been vaulted between the piers. The walls were probably continued to the level of the rampart walk, which would be carried over on horizontal beams.

In 1854, when Castle Nick was excavated, it was found that the gates differed from those previously examined, being built of stones similar in size to those used in the facing of the outer walls and the Great Wall. Dr. Bruce, in his description of this milecastle, says : " The gateways do not present the usual massive masonry ; they have doubtless been altered since their original construction." (*Roman Wall*, 3rd edition, p. 225). In June 1908, however, the north gate and the adjoining walls were bared to their foundations, when it was found that they were contemporaneous. In July of the same year, the gates of the milecastle next westward, at Winshields, were found to have been originally constructed in the same fashion as that at Castle Nick.

In plan, the gates of both these milecastles differ from Type I, in which the piers forming the supports of the outer and inner arches both project into the passage-way, the outer piers forming the jambs of the doors. At Castle Nick and Winshields, which had outer arches only, the passage was lengthened by simply extending the side walls beyond the inner face of the milecastle wall, as shown in Type II.

In the gates at Poltross Burn, the plans of the two foregoing types are combined, the passages being arched

at both ends as in Type I, and, at the same time, lengthened as in Type II. In construction also, there is a combination of massive stone work in the piers, with ordinary facing work in the passage walls.

The different arrangements shown in these plans seem to some extent dependent on the varying thickness of the walls through which the passages are carried, and they suggest that the gateway might form the base of a tower, through which the rampart walk would pass.

The north gate will be described in detail first, as one half of the south gate is entirely destroyed and the remainder furnishes very little evidence of the periods of occupation.

North Gate.—The width of the entrance between the outer piers, or jambs, is 9 feet 6 inches, and 9 feet 9 inches between the inner piers. This slight irregularity is noticeable throughout the structure, and the dimensions, unless otherwise stated, represent average figures. All the piers project 11 inches from the face of the passage-walls, which are thus about 11 feet 6 inches apart. The jambs are 2 feet 3 inches wide on the face and the inner piers 2 feet 4 inches. The recesses are 8 feet 5 inches long. The full length of the passage is 13 feet, or 2 feet 6 inches longer than the north gate at Cawfields, hitherto the longest known. The extensions of the passage-walls, which back the piers of the inner arch, are of great size, each being 4 feet 9 inches wide and projecting 3 feet 9 inches from the inner face of the north wall.

The piers are built of large stones, one stone occupying the full width of the pier at each course, in the original work, the average height of the courses being about 12 inches. The stones are generally rock-faced, within a roughly chiselled margin. The piers are not bonded into the passage-walls on account of the great difference in height between the courses, the masonry of the passage-walls being the same as that of the outer walls. The

returns, or side faces of the extensions are, however, bonded into the north wall in both cases, but the bonding is not of alternate courses because the facing stones of the returns are somewhat larger than those of the wall. The foundations of the piers consist of very large stones, roughly dressed, lying on a prepared bed similar to that below the footing-course of the outer walls, and projecting about 6 inches beyond the face of the piers above, as shown in Fig. 10, and on the plans. The greatest height of the west extension is over 7 feet 6 inches. The west wall of the passage is over 8 feet high, and 1 foot 2 inches higher than the east wall. There is no offset above the footings in the passage-walls.

As already mentioned, the original roadway, or floor, in this gate, was altered three times, the level being raised and many other changes made on each occasion, but enough of the structure survived the times of general destruction to reproduce the original plan at each level. Before examining the floors, a trench was dug across the full width of the entrance, at the outer face, and carried down to the foundations of the piers. The result, as shown in Fig. 8, suggested that several changes might certainly be expected. The different floors can be most clearly described if taken in the order in which they were found, beginning with the latest. The main phases are shown in Figs. 8, 9 and 10, and on the three plans (Plate II).

Level 3, *Section G.H.*—The top courses of the passage-walls were found immediately below the turf, the space between them being filled with the débris of the superstructure. The remains of the latest floor were met with 2 feet 6 inches below the top course at the west side. On that side of the passage the flooring was well preserved and consisted of flags about $2\frac{1}{2}$ inches thick, laid in sandy clay, the joints between the flags being very wide. It extended over the full width of the passage at the inner

end, and was continued within the milecastle. Northwards, it ended at the inner face of a wall built out from the west jamb.

This wall is 5 feet 6 inches long and leaves an entrance only 4 feet wide, at the east side of the passage. Unfortunately, no portion of the wall remained above the floor, having been robbed down to that level. It was continued below, and clearly belonged to an earlier period, having been retained in connection with the latest occupation. At this level, no portion of the outer face remained, and only one stone was left at the end. Between the east jamb and the end of the wall, no trace could be found of a pivot-stone, or threshold, to indicate that the doorway was in use in this period, nor of walling showing that the narrow entrance had been built up. The flooring was also missing at that side of the passage.

Lying parallel to the west wall, at a distance of 3 feet 10 inches, were two stones, roughly dressed on the face, each about 2 feet long, 10 inches wide, and 6 inches to 8 inches thick, clearly no part of the floor, but apparently the sole remains of a wall abutting upon the reducing-wall and dividing the passage into two parts. In the last period, the south gate at Winshields was reduced in width in a similar manner. Though it is unwise to press the comparison between a north gate and a south gate too far, the presence of this dividing-wall is strong evidence that there was an exit at the north gate at Poltross Burn as long as the milecastle was occupied. The length and thickness of the wall must remain in doubt, but, in order to make the description clear, a thickness of 2 feet has been inferred on the plan (Third period, Plate II.). The two remaining stones are shown by full lines.

The space between this wall and the west side of the passage was undoubtedly used as a small chamber, at the north end of which was a hearth about 2 feet in diameter, shown on the plan by a dotted circle. It was surrounded

FIG. 8. NORTH GATE; THIRD PERIOD FLOOR LEVEL.

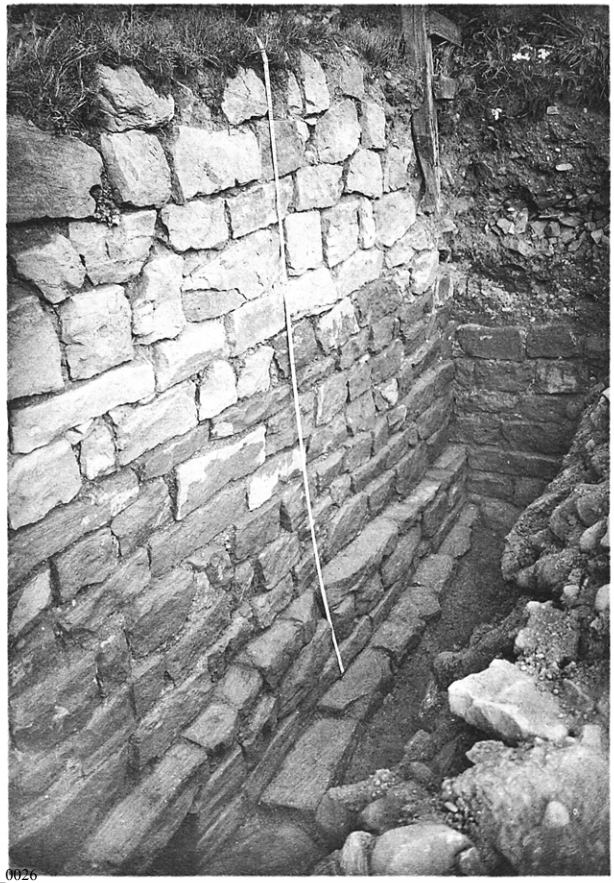


FIG. 7. JUNCTION OF N. AND E. WALLS, BEHIND STEPS.

tcwaas_002_1911_vol11_0026

by a raised bank of clay about 4 inches high, the flooring forming the hearth-stone. A quantity of wood-ash was lying near the hearth. Below the clay on which the flags were laid was a layer of mortar, very much decayed. The shape and area of the hearth were clearly defined below the flags in the clay and in the mortar as well, pointing to long continued firing. No special pottery, or objects, were found in the passage at this level.

The mortar covered a layer of mixed material, containing broken stones and burnt matter, with the addition of some gravelly clay. Below this was more dark material and ashes that covered the next floor. In removing the débris from the doorway, a small roughly dressed stone pillar, of the type used in supporting the raised floors of hypocausts, was found (Objects of Stone, No. 1).

Level 2.—This earlier level was 1 foot 7 inches below that just described, and was also continued inside the milecastle. At the west side some flooring was reached at a depth of only 1 foot 2 inches and at first it appeared as if there were two floors separated by not more than a few inches. When the whole was exposed, however, it was found that there was a raised platform, about 5 inches higher than the floor, over nearly one half of the passage. It is shown complete, as found, on the " Second period " plan (Plate II.) and, partially removed, in Fig. 9. The face, or kerb, was formed of stones similar to facing stones, and the raised area floored with small flags. The whole was 4 feet 9 inches wide and extended from the middle of the west inner pier to the reducing-wall. The corner was rounded (3 feet 6 inches radius) with the evident intention of improving the approach to the doorway.

The platform and the floor proper were of the same date, for the flags of the latter did not extend more than 4 inches to 6 inches under the kerbing of the former. In Fig. 9, the northern portion of the platform had been removed, and the edge of the flooring can be seen just

beyond the line of the kerb. The eastern portion of the floor had also been removed before the photograph was taken. The flooring flags were large and thick and more closely laid than elsewhere in the milecastle. Lying on the floor near the corner of the platform, was a partially dressed stone, which appears to have been intended for a small altar (Objects of Stone, No. 2).

The period to which the reducing-wall belonged was now made clear. Three courses of the inner face remained above the floor, but no portion of the outer face was in its original position, the few remaining stones being much bulged out of line. The latter can be seen in Fig. 8, but had collapsed before Fig. 3 was photographed. It was clear, however, that as at Winshields, the outer face has been flush with that of the milecastle wall. The thickness of the wall was 3 feet, or 9 inches more than the width of the jamb. At Winshields, the thickness (2 feet) was the same as the width of the jamb.

A pivot-hole was found in a stone built into the end of the wall at the level of the floor, the hole being 12 inches from the inner corner. There was no second pivot-stone at the east jamb, nor would one be needed, for the narrow entrance, measuring only 4 feet, would be occupied by a single door, which probably closed against the east jamb. There was a rough threshold in the doorway formed by several stones, two of which proved to be portions of the superstructure of an earlier period. They can be seen in position in Fig. 8, one being the large flat stone lying horizontally, with the other wedged in between it and the jamb. The first, which measured 3 feet by 1 foot 6 inches by $4\frac{1}{2}$ inches, had a bold chamfer on one long edge. Thin stones having a similar chamfered edge have been found elsewhere and are usually looked upon as coping, from the parapets of walls or towers. The second stone was a voussoir, almost certainly from the arch spanning the original entrance. A second was found

at the same level, lying on the road just within the milecastle. From the position of these voussoirs, it would seem that the arches were thrown down during the time of destruction preceding the period in which the entrance was reduced in width. This view is entirely confirmed by the evidence from Housesteads and Winshields.

Level 1 B.—When the floor and the platform had been removed, it was found that the flags of the latter were laid on clean gravel, evidently brought in when the alterations were made, but below this layer and below the flags of the floor similar mixed material to that found above was again met with. The foundations of the reducing-wall, consisting of the rough blocks seen in Fig. 10, were then exposed and the voussoir and other stones removed, when the whole wall and threshold were found to be built upon a still earlier road-level, 11 inches below.

In Fig. 10, the large flat stone lying in the middle of the passage formed part of the second floor and can be seen in Fig. 9: it was left in position in order to make clear the changes in the levels.

The inner face of the wall at the west end was founded on a dressed stone which had a pivot-hole in its upper surface. Two stones of the face were removed in order to show this pivot-hole, and the gap thus made can be seen in Fig. 10, the stones behind being those of the jamb. The voussoir was found to be partially covering a similar pivot-stone, just within the east jamb, as seen in Fig. 3. These pivot-holes, which are at the same level, are in nearly the normal position of those of the double doors of milecastle and other gates. They are, however, fully 11 inches from the passage-walls, as shown on the "First period" plan (Plate II.). In all the gates in which the original pivot-stones are preserved, the holes are placed quite in the corner between the jamb and the wall, the centres being not more than 4 inches from both, so that the doors when opened would turn quite back to the

walls. In this case, however, a space would be left behind the door.

In the north gate at Housesteads, it was found, in 1909, that the original doors had been secured by a bar working in holes in the walls, at a height of over 5 feet above the floor. In such an arrangement there would be no projecting fixtures at the back of the doors, which accounts for the nearness of the pivot-holes to the walls in that instance. Mr. W. Parker Brewis, F.S.A., suggests that at Poltross Burn, the doors of this period might not be secured by a bar placed in holes in the walls, but in brackets fastened to the doors themselves. They could not then be hung close to the walls.

There was no threshold between the pivot-stones, but in line with the north face were three or four courses of rough walling, faced on the outside only. At the inner end of the passage, walling of a similar character, two courses (15 inches) high, was found, built across just within the inner piers. The top of this walling was approximately level with the pivot-stones. There were no signs of flagging at this level, either in the gateway, or inside the milecastle, the surface being formed of hard-rammed gravel. The object of the walling at both ends evidently was to secure a solid roadway through the passage.

The level just described was still over 3 feet above the footing-course at the north face, and fully 1 foot 6 inches higher than the offset which was just above the original surface level, while at the inside, the walling rested on another layer of gravel laid on placed stones, which implied a still lower roadway (Fig. 10). The upper surface (1 B, section G H) was therefore removed, exposing a layer of stones mostly set on edge, as shown in the section, obviously placed and not débris as found in the mixed layers above. Below the stones was the continuation of the lower gravel surface on which the inner walling was built.

FIG. 9. NORTH GATE; SECOND PERIOD FLOOR LEVEL, LOOKING N.

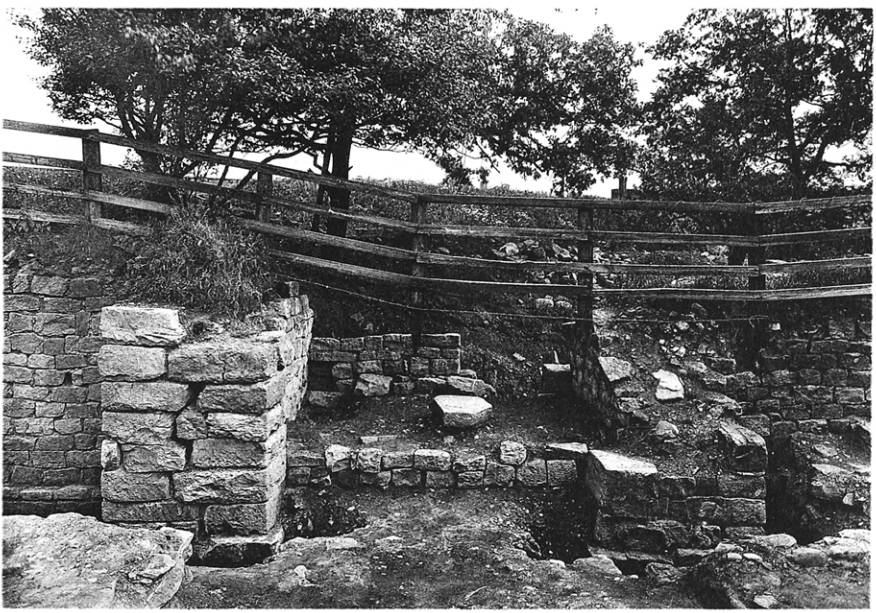


FIG. 10. NORTH GATE; FIRST PERIOD FLOOR LEVELS.

Level 1 A.—Some useful fragments of pottery were lying on this surface, including portions of No. 4, Plate IV., of two bottle-necks, similar to No. 11, Plate IV., and of a *mortarium* base with transparent pebble grit.

When this lower surface (1 A, section G H) was removed, the stones below were found to be laid as uniformly flat, as those in the layer above were on edge. The two upper courses of walling at the outer face proved to belong to the upper level, corresponding with the two courses at the inner end of the passage, those below, probably two originally, had served the same purpose at the lower level.

Although this lower surface was unmistakable, no pivot-stones were found in position. The corners between the jambs and the passage-walls were, however, cut out of the solid and definitely rounded for about 1 foot 3 inches below the upper pivot-stones, but below this point there were no signs of tooling. This rounding could have been useful only in the case of doors hung quite in the corners. Two pivot-stones were found in the later débris close to the gate. In each, not only was the hole much worn, but having been cut at one corner of the stone in the usual manner, that corner had burst away rendering the stone useless. It is highly probable that these were the original pivot-stones. Whether there were bar-holes in the passage-walls originally is uncertain. At the jamb, the west wall stands over 5 feet above the surface 1 A, and the holes should have been found, unless the bar was higher than at Housesteads. It is more probable, however, that the walls have been repaired and the bar-holes removed.

This proved to be the earliest level of the roadway. It was about 3 inches above the offset at the north face and fully 4 feet below the floor of the last period. The material below, which was practically in the foundation trench, furnished no evidence of a previous occupation.

The lower levels (1 A and 1 B, section G H) present the only difficulty in assigning the four to dateable periods.

The upper levels were separated from each other and from those below by definite layers of débris : they were also continuously connected with floor-levels inside the milecastle. No débris was found, however, between the levels 1 A and 1 B : the surfaces merged into one within 12 feet of the gate, and only one floor was found in the buildings below the two corresponding with levels 2 and 3 in the gate, showing that the roadway was raised and the doors altered during the first period, owing to purely local circumstances. As at Housesteads and Winshields, where the first alteration was the reduction in the width of the entrances, following the first destruction and the fall of the original arches, so the reducing-wall at Poltross Burn, and its floor (2) laid on the lowest layer of débris, clearly belong to the second period. The floor first discovered (3) is therefore that of the third and last period.

Owing to the roughness of the original work, it is impossible to state accurately to what extent the piers and passage-walls have been repaired. One probable example is, however, confirmed by direct evidence from Housesteads and Winshields. In Fig. 11, the west inner pier is seen to be built very irregularly. One stone occupies the full width of the pier (2 feet 4 inches) in each of the three lower courses, but in the fourth and sixth there are two stones, together measuring nearly 3 feet, the upper pair being extremely rough. In the fifth course, the single stone is over 2 feet 6 inches long. The overhanging portions project into the passage-wall, causing disturbance of the face. A curious feature is that the chiselled margin is cut across the projecting stones at the correct width of the face.

At Housesteads, an unsuccessful attempt was made, during the first destruction, to throw down the massive jambs of the north gate. They were, however, moved out of the perpendicular, and remain so to-day, with the second period work built against them. At Winshields,

where the stones were small, the extensions of the passage of the south gate were pulled down practically to the ground level, and never rebuilt. The outer walls also suffered very considerably. With such systematic destruction proceeding elsewhere, similar damage would probably be done at the north gate at Poltross Burn, evidence of which is supplied by the fallen voussoirs and the reconstructed pier.

South Gate.—The south gate has suffered because of its position at the top of the slope. The western half was removed when the railway was made and very little of the eastern portion which remains would be above the surface originally.

The general plan is the same as that of the north gate. The passage is 12 feet 6 inches long at the footings. The jamb is 2 feet 4 inches wide and the base of the inner pier 3 feet, the recess being 7 feet 2 inches long. The jamb projects 12 inches from the passage-wall. The extension at the inner face projects 3 feet 1 inch and is 5 feet 9 inches wide, but not more than two courses of it are left. Those above were probably stepped on account of the steep slope, thereby reducing the width of the pier to the normal 2 feet 4 inches and the length of the passage to about 11 feet 10 inches. Two courses of the jamb remain in position, the lower stone measuring about 4 feet by 2 feet 4 inches by 12 inches, and the upper, which is boldly rock-faced, about 2 feet 6 inches by 2 feet 4 inches by 14 inches. The remains of the reducing-wall are scanty. It is 3 feet thick, but the end has been removed and the length of the remainder is less than 3 feet. It is built out from the east jamb, the doorway thus being on the right-hand side of the passage when leaving the milecastle, as at the north gate, and at Winshields. There is no pivot-stone in position in the corner within the jamb.

The reducing-wall is built on a layer of gravel not more than 6 inches above the footings. There are no signs of

tcwaas_002_1911_vol11_0026

the successive floors found at the north gate, and the level of each period must have been approximately the same. The reason clearly is that while the raising of the floors at the north gate was useful, because the steepness of the slope was thereby reduced, a similar practice at the south would have made access to the gate from within difficult for men and impossible for horses. After the times of general destruction, when the repairs and alterations were undertaken, the débris at the north was allowed to remain and the new floors laid upon it, but at the south it was removed and the old level retained. Below some fallen stones near the inner pier, the coin of Victorinus, No. 9, Fig. 19, was found.

STRUCTURES CONNECTED WITH THE OUTER WALLS.

Drain.—The mouth of a drain or culvert through the north wall was found 15 feet 3 inches from the east jamb of the gate. It is 15 inches deep, 7 inches wide at the top and 5 inches at the bottom. The footing-course forms the bottom and the flag course the cover. The inner end is seen at the foot of Fig. 7. Its position shows that it was below the surface from the first. No drains of any kind were found leading to it. It could only have been used before the internal buildings were erected and the floors laid and was certainly entirely blocked by the erection of the steps.

When the milecastle was completed, it is evident that surface water was carried off through the gateway.

Steps leading to the rampart-walk.—The remains of this structure, occupying the north-east corner of the milecastle, are shown in Fig. 12, and on the plan and section C D. The construction is simple and consists of a thin retaining-wall 15 feet 4 inches long, faced on the outside only, and roughly parallel to the north wall at a distance of 5 feet 4 inches. It abuts upon the east wall and is not bonded into it. The space between the walls is filled

with clean gravelly clay. The whole of the work is rough. The wall has no projecting footing-course, the lowest stones being laid on cobbles bedded in the gravel and clay. The greatest height above the foundations is 3 feet 5 inches, which is made up of eleven courses. Lime mortar appears to have been used, but it has entirely decayed.

Only three steps remain in position. They have sunk considerably in the middle from continued use, owing to the weakness of the clay filling. The risers are built of two or three courses of rough walling laid upon the clay. Each tread is made of several small flags. The first and third steps are complete, but only one course of the second remains and part of one course of the fourth, enough, however, to give the width of tread in both cases. At the bottom of the first step, some irregular flagging denotes the floor-level from which the steps originally sprang. The height of the first step is about 9 inches. The second is imperfect, but the rise between the first and third is 16 inches, or 8 inches each for the second and third. The three treads each measure very nearly 11 inches in width.

In spite of the roughness of the work the steps belong to the first period. The flooring at the foot of the steps is about 3 inches below the road-level 1 B at the north gate and must therefore have sloped down to the lowest level 1 A, otherwise surface water would have collected for which there was no outlet. The floor near the lowest oven, in the north-west corner, is also 3 to 5 inches below 1 B, and would slope down to the level 1 A. The lowest oven is certainly part of the original arrangement.

A flight of steps 5 feet 4 inches wide, placed in such a position, can have served only one purpose, namely to give access to the rampart-walk. No such steps have previously been recognized on the line of the Wall, or in its forts, milecastles or turrets. Their supposed absence led to the conclusion that ladders had been used for that purpose. In Wall-turrets, which are too small to contain

a staircase of any kind, probably ladders were so used, but where inner retaining-walls have been found less than five feet from the ramparts, it is suggested that some of them were the remains of steps of which the treads had disappeared, and not mere thickenings of the rampart as has been hitherto supposed.

The special value of the steps at Poltross Burn lies in the fact that from them a calculation of the height of the rampart-walk at this point, can be made. The calculation is made on the assumption that the flight was not interrupted by a landing, or extra wide tread, as nothing interferes so much with the rapid use of steps, especially in the dark, as a landing of any kind. The length of the retaining-wall (15 feet 4 inches) is equal to seventeen times the width of the three remaining treads (11 inches scant). The number of risers would thus be eighteen if the last tread was one step below the walk. Taking the lowest height of riser (8 inches), the height of the walk above the first period floor, inside the milecastle, would be 12 feet. On account of the slope, the height above the ground level on the north side of the Wall would be about 14 feet. A similar calculation based upon the north gate at Housesteads results as follows :—

	ft.	ins.
From first period pivot-stones to top of imposts	6	8
Height of arch (span 10 feet)	5	0
Height of voussoirs	2	0
	13	8

to which must be added the thickness of the flagging of the walk, and that of any masonry between it and the top of the voussoirs. In both cases, if the parapet was 6 feet high, the effective height on the north face would be about 20 feet.

FIG. 11. INTERIOR, LOOKING N.W.

FIG. 12. STEPS LEADING TO RAMPART WALK.

As the floor levels were raised, the lower steps were hidden by accumulated débris and levelling material. In the second period the steps were probably in use, as a portion of the flagged floor of that period was found between the internal building and the retaining-wall, just below the level of the third step. The coin of Gallienus, No. 8, Fig. 19, was found lying upon that step.

Evidence of the condition of the steps during the third period was entirely wanting.

Internal Buildings.

The average outside dimensions of the buildings are :— east building, 56 feet 3 inches by 16 feet 6 inches ; west building, 54 feet 3 inches by 17 feet. They are not quite rectangular, but their internal areas are equal. The buildings are 22 feet 6 inches apart and the passages separating them from the outer walls are about 2 feet 3 inches wide on the east and 2 feet 6 inches on the west. The foundations consist of a layer of rough stones and the footing-course only projects beyond the wall face where it is shown to do so on the plan. The walls above the footings are 2 feet thick throughout, and differ in construction from the outer walls, which follow the slope of the ground.

Level floors in the rooms were secured by building the east and west walls in four nearly horizontal portions, which are connected by stepped work and correspond with the number of rooms (Fig. 2). The north walls are specially strengthened to counteract the thrust of the sloping ground. In the west building, above the projecting flags of the footing-course, are two " steps " (Figs. 13 and 18), each about 6 inches wide and 10 inches high, making the thickness of the wall at its base nearly 3 feet. The north wall of the east building is stepped in the same way, but a dressed stone about 24 inches by 12 inches by 11 inches has been used at each end as a corner stone.

The facing stones are similar in shape and dressing to those of the outer walls, but are slightly smaller. A reddish clay has been used as mortar instead of lime, and it is still in much better condition than the lime mortar of the outer walls.

In the description of the different rooms and floors, the east and west buildings are indicated by E and W, and the rooms numbered 1 to 4, reading from north to south. On the plan (Plate I.), H 1–2–3 indicate the positions of the hearths of the three periods, and in section E F, F 1–2–3 denote the three floors in rooms W 1, W 2 and W 3. The floors in the east building are shown in section C D.

When first constructed, each building was divided into four rooms of equal size, measuring about 13 feet by 12 feet 6 inches, practically the same in area as the rooms in the barracks at BORCOVICUS (*Arch. Ael.*, 2nd series, vol. xxv., p. 231). Each room had a separate doorway, placed at the right-hand side as viewed from the outside, the buildings thus being the same in plan. The average width of the doorways is 3 feet 3 inches. The jambs have fortunately been built from the footing-course upwards, and not commenced at the threshold level as in modern practice. Had this not been done, the evidence of doorways in W 3 and W 4 would have been lost, as the remains of the wall are lower than the first floor levels in those rooms (Fig. 2).

The east building lies on a fairly regular slope. The difference in height between the first period floors in E 1 and E 4 is 10 feet 3 inches made up of three "risers," which must have measured about 3 feet 3 inches, 3 feet and 4 feet. The slope at the west building is not so great but is less regular, being gentle at the north end but steep towards the south. The difference between W 1 and W 4 is 8 feet 6 inches, made up of about 9 inches (W 1—W 2), 2 feet 9 inches (W 2—W 3), and 5 feet (W 3—W 4). As

no stonework was found retaining the terraced floors in each building, probably wood bratticing strengthened by posts was used, which would also form the partitions between the rooms. No remains of this bratticing were found, as it would be burnt in the first destruction.

In the second period, the internal arrangements were almost entirely altered. The number of rooms was reduced to three, which were of unequal size. In each building a cross-wall was added which enlarged the north room to about one-third of the whole area. The remains of floors showed, however, that the south room was not enlarged, but that the middle room was the largest of the three, occupying the first period rooms 3 and 2 (as far as the cross-wall). There were no traces of a second cross-wall. The third period arrangement appears to have been the same as that of the second.

The cross-walls are 2 feet 4 inches thick, faced on both sides, but very roughly constructed. They are not bonded into the outer walls of the buildings.

In each building, the three floors in the north room were separated by layers of débris of a considerable thickness, but in the middle room they were laid one immediately upon another. This may have been the case in the south room as well, but the floors there were almost entirely removed. The first period floors were of beaten clay, below which was the gravel and clay subsoil. The material excavated from the south end of each room was apparently used to level up the north end. All this "made" ground was removed during the excavations, but nothing was found in it which indicated an earlier occupation of the site.

The floors of the second and third periods were flagged. In E 1, the level of the clay floor was given by the hearth (H 1) shown at the foot of Fig. 11. A single flag about 2 feet 6 inches square formed the hearthstone. It was much cracked by heat, and another flag had been

laid upon it, a fragment of which is seen in the photograph. The stones of the wall behind were also much reddened. In the doorway was the only pivot-stone found in position in the buildings. The hole was much worn. A piece of window glass, fragments of the bowl, No. 9, Plate III. and other pottery, were found at this level. The inner face of the north wall has sunk in the middle as shown in Fig. 1, but nothing was found below the foundations to account for the settlement.

The second floor was 10 inches to 11 inches above the first. The cross-wall is 16 feet from the north wall. The length of the room was thus increased by 3 feet, but the flagging did not extend within 2 feet of the base of the cross-wall. At the north end the floor was disturbed. Near the middle of the room the flags were much fired, showing the position of the hearth at this period (H 2). A small pickaxe was found on the floor near the doorway, and the intaglio, No. 3, Fig. 21, near the east wall. The third floor in this room had been almost entirely destroyed by modern disturbance, causing the pottery above it to become mixed with that of the second period in the débris below. The slight remains, however, showed that this floor was about 13 inches to 14 inches above the second. Except at one point, the remains of the walls were below the level of the floor.

The second period alterations probably account for the lack of finds in E 2, for the floor would be much disturbed by the building of the cross-wall.

In E 3, the only remains found below the first floor were met with. Within a foot to the south-west of the later hearths (H 2 and 3) and about 9 inches below the floor, was a small hearth, built up at the back with two stones but open at the north side, showing that the ground had not been levelled at the time. It was covered with wood-ashes, and within two feet to the north were lying almost all the fragments of the jar, No. 26, Plate III.

PLATE I

TO NEWCASTLE

NORTH EASTERN RAILWAY

TO CARLISLE

N.E.R. CABIN

D

F

NORTH GATE

DRAIN

DITCH

OVENS

STEPS

A

B

H 2

H 3

H 1

H 1

H 1 H 2

PATH

ROAD

PATH

E

H 2 & 3

T

WALL DESTROYED

SOUTH GATE

C

SECOND PERIOD WALLS

DATUM 475 FT.

DITCH

SECTION AT CD

DATUM 475 FT.

1835

SECTION AT AB

FEET 0 10 20 30 40 50

METRES 0 1 2 3 4 5 10 15

SCALE: ONE INCH = 12 FEET

THE MILECASTLE

ON THE

WALL OF HADRIAN

AT THE

POLTROSS BURN

1909 -10

J.G.S.

tcwaas_002_1911_vol11_0026

The whole was "sealed" by the gravel upon which the clay floor had been laid. The hearth appears to have been used during the building of the milecastle only. In the fort at Haltwhistle Burn there was a similar instance of a temporary hearth (*Arch. Ael.*, 3rd series, vol. v., p. 245).

In this room the levels of the three floors were separated only by the thickness of the flags. The surface of the clay floor was marked by a thin layer of ashes and other remains which had been pressed into the clay, including a spearhead, the socket of a large iron implement, several small fragments of pottery, one of window glass, and a number of pieces of coal. Two layers of flags had been laid upon the clay floor, the lower being the most complete. (Figs. 1 and 2 were photographed before this flagging was removed). The flags were much fired at the point marked H 2, indicating the second period hearth. Two of the flags had a chamfered edge similar to that of the flag found at the north gate, and appeared to be re-used stones from the first period.

The most interesting find, however, was a small "trough," the position of which can be seen in Fig. 1, and marked T on the plan. It measured 16 inches by 13 inches by 12 inches deep, inside, the sides being formed of thin flags, with a rough stone for the bottom. It was clearly an addition of the second or third period and was probably a smith's trough. The top was level with the lower flags. The sides were packed round with clean, sandy clay, different from that of the first floor. It was partially covered by one of the flags of the upper layer. Less than 2 inches down was the coin of Constantius Chlorus, No. 15, Fig. 19. At the bottom, below a dressed walling stone, were the base of a cooking-pot, similar to No. 32, Plate IV., two fragments of other vessels and a broken bone, the whole being covered with dark material containing ashes. The trough probably belongs to the

second period, the débris being that of the second destruction. The coin, which is in fine condition, may have been dropped when the upper flags were laid.

The upper flags appear to have formed the third floor, the hearth (H 3) being in the same position as H 2. The flagging was entirely destroyed within 8 feet of the cross-wall. The corresponding floor in the west building was, however, preserved (section E F) : probably the same arrangement was followed in the east building, as inferred in section C D. The buckle, No. 2, Fig. 21, was found at this level. In E 4, a small portion of the first floor remained close to the doorway. Embedded in the clay was the coin of Trajan, No. 2, Fig. 19. In the south-east corner, two flags were found which may have formed part of the later floors.

The northern portion of the west building had fortunately escaped disturbance in modern times. In W 1 the clay floor (F 1, section E F) was better preserved than in E 1. The hearth (H 1), a flag about 2 feet 6 inches square, was placed against the east wall, its position corresponding to that of the first hearth in E 1. The *fibula*, No. 2, Fig. 20, was lying near the north-west corner of this room : about the middle were the bronze ornament and the metal lid, Nos. 9 and 18, Fig. 21, and a spearhead. Embedded in the clay, south of the hearth, were fragments of several vessels including Nos. 1 and 24, Plate III., Nos. 4 and 5, Plate IV. and a bottle-neck of white clay, similar to No. 11, Plate IV. Lying on the floor and mingled with the débris were many fragments, including portions of Nos. 7 and 27, Plate III. Near the west wall, in the débris below one of the flags of the second floor, was the coin of Faustina the Elder, No. 7, Fig. 19. It was coated with charcoal when found and shows evident traces of fire.

The second period repairs and alterations in W 1 and W 2 are of special interest. The area added to W 1 by the building of the cross-wall included the doorway be-

longing to W 2. This, being no longer needed, was built up, but at the same time the whole of the east wall of the room, between the doorways, was rebuilt from the second course upwards. The repair work is very rough and the clay used is of a yellow colour, quite different from the reddish clay in the original courses below. In Fig. 11 (¼ inch from left side of plate), the south jamb, four courses high, of the built-up doorway can plainly be seen, the contrast between the original masonry and the repair work being very marked.

The second floor was nearly 12 inches above the first, the flagging being fairly well preserved. The hearth was near the middle of the room (H 2). A rough semicircle of flags formed the sides, the floor being of clay. A flag lying against the west wall also showed signs of firing. No less than seven of the flags used in this floor had chamfered edges similar to those found in the middle room of the east building. At this level were found the two *lorica*-scales and the chape, Nos. 10, 11, and 19, Fig. 21. The pottery included No. 31, 32, 34 and 42, Plate IV. Close to the cross-wall was another stone pillar of the hypocaust type (Objects of Stone, No. 3).

The third floor was about 14 inches above the second. It was well preserved, except near the walls where the flags were disturbed by the removal of facing-stones. The hearth (H 3) was placed against the west wall. It measured about 3 feet by 2 feet 6 inches and consisted of several small flags. Lying not more than 3 inches above this floor in the north-west portion of the room, and less than 2 feet apart, were three coins, one of Hadrian and two of Diocletian, Nos. 4, 11 and 12, Fig. 19. The silver *fibula*, No. 6, Fig. 20, was also found in the north-west corner. The pottery included portions of Nos. 1, 2 and 6, Plate V.

Owing to the gentle slope, the floor of W 2 was only 9 inches above that of W 1. There was no "made"

ground at the north end of W 2 and the cross-wall was built upon the clay floor, not below it as in E 2. Consequently the floor and débris were not much disturbed. Under the wall, near the middle of the room, was a large fired flag, apparently the first period hearth (H 1). The pottery found in this room included Nos. 4, 5 and 29, and further fragments of No. 24, Plate III., and No. 1, Plate IV.

The clay floor was not very distinct in W 3, but the base of No. 25, Plate III., and fragments of the bottle-neck, No. 12, Plate IV., were found below the flags. Enough remained of the flagged floor (F 2) to show that it was carried forward to the cross-wall as shown in section E F. There were no remains of a second layer of flags. The harness mounting, No. 13, Fig. 21, was found close to the cross-wall and a stone lamp at the south end of the room. The pottery included the *mortarium*, No. 3, Plate V. and one similar to No. 4, Plate V., also cooking-pots similar to Nos. 6 to 15, Plate V. Where the third floor was intact, vessels of these types were uniformly found above it. In this room, probably the same level, if not the same floor, was used in both second and third periods.

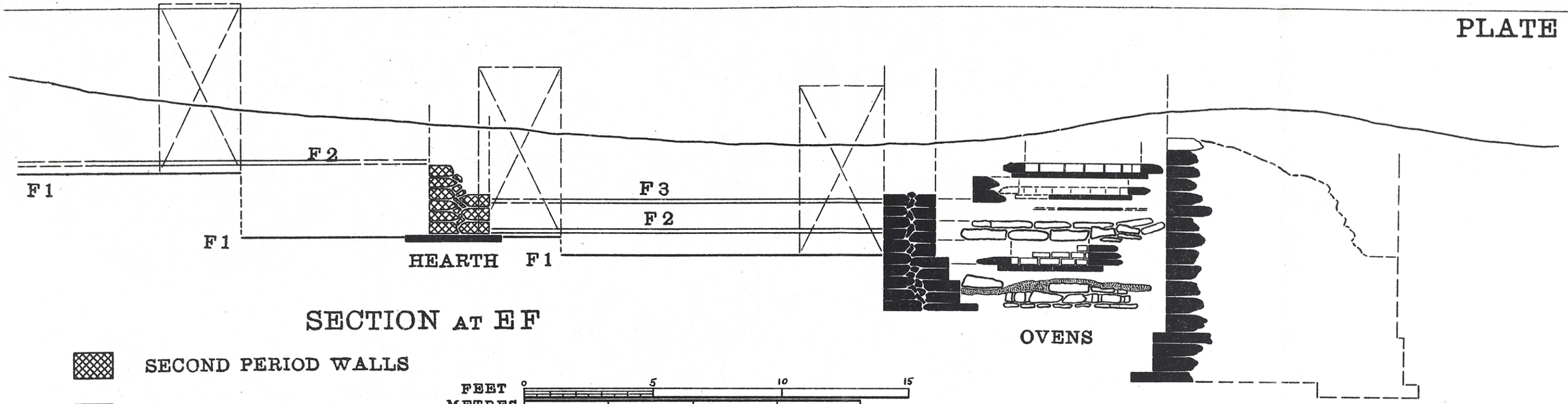
There were no definite remains of floors in W 4.

At King's Hill, Cawfields and Housesteads, the buildings appear to have had lean-to roofs. The presence, however, of the narrow passages, forming easements for the " drip " from the roofs, between the buildings and the outer walls at Poltross Burn, indicates that the original roofs were of the gable pattern. They were probably divided into four horizontal portions, corresponding to the number of rooms.

The roofs were probably covered with " stone-slates. " Six pieces of thin flag, showing nail-holes and evidently intended for roofing, were found. None of them came from the northern portion of the interior, but many other

460 FT.

PLATE II



SECTION AT EF

SECOND PERIOD WALLS

THIRD PERIOD WALLS

FEET 0 5 10 15
METRES 0 2 3 4

SCALE: ONE INCH = 4 FEET

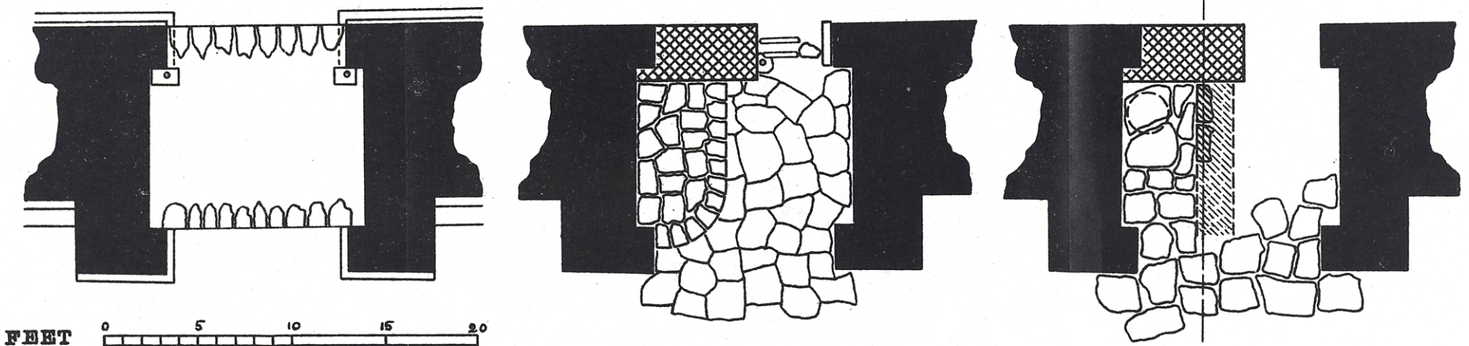
FIRST PERIOD

SECOND PERIOD

THIRD PERIOD

G

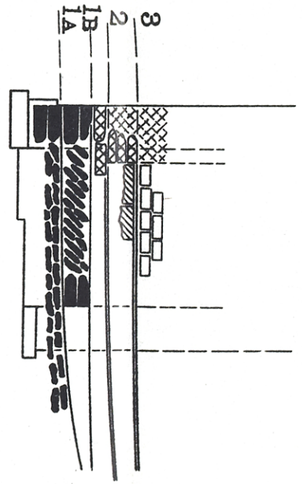
H



FEET 0 5 10 15 20
METRES 0 1 2 3 4 5 6

SCALE: ONE INCH = 8 FEET

NORTH GATE



SECTION AT GH

1909 -10

F.G.S.

tcwaas_002_1911_vol11_0026

pieces, without nail-holes, probably escaped notice among the débris of building stone of the same character. Only seven small fragments of roofing-tile were found. Had the roofs been tiled originally, the débris must have contained a much greater quantity. The fragments of window glass indicate that the windows of the buildings were glazed, at any rate in the first period.

The Ovens.

The first indications of the presence of ovens in the north-west corner were observed in 1909, when two or three well defined layers of wood-ashes, separated by clayey material, appeared in a deep trench exposing the inner face of the north wall. Further examination was postponed until 1910, when the boundary wall and nearly 2 feet of " tip " were removed. In the latter was found the *fibula*, No. 4, Fig. 20, which suggests that some of the material used in forming the waggon-way in 1835, may have been brought from the south-west portion of the milecastle.

The ovens are described below in the order in which they were found. Their position relative to the internal buildings and the outer walls is shown in Fig. 13 and section E F. Figs. 14 to 18 illustrate the successive structures as much as possible in plan.

The floor of the latest oven was reached only 1 foot 5 inches below the top course of the north wall (Fig. 14). The débris above contained wood-ashes and a number of fired stones, evidently from the oven walls. The floor consisted of roughly squared flags fitted closely together, and was complete with the exception of two flags at the south-east corner. The whole sloped slightly towards the east. At the west end, part of the first course of the wall remained in position, the face being 12 inches within the outer walls. The facing stones overlapped the flags from 3 to 4 inches and where the stones were missing

their position was indicated on the flags by the line of firing. The oven would measure about 5 feet 9 inches by 4 feet 6 inches (N. to S.) inside, and the remains of the oven wall showed that its shape was that of an irregular octagon.

Abutting upon the west wall and 7 feet 6 inches from the north wall were the remains of a wall, two courses high and 4 feet 6 inches long. It faced south and was 1 foot 5 inches from the north wall of the building. This intervening space, and the west easement for 3 or 4 feet, were full of ashes. The walling was probably continued round the front of the oven as a support for the whole structure. The floor of this oven was 12 inches above the third floor in W 1 and 2 feet above that floor in the north gate.

The flags were laid in puddled clay which was much reddened. Below was a layer of gravel and clay, covering a thin band of ashes, but containing no fired stones, or other débris.

The ashes covered the remains of another oven floor, 10 inches below that just described (Fig. 15). It was much destroyed. Some of the flags were missing on the south side, and only three stones of the oven wall remained, about 1 foot 6 inches from the north wall. The general shape of the interior could, however, be traced by the firing on the flags, or in the puddled clay below. It was roughly elliptical and measured about 5 feet by 4 feet 3 inches (N. to S.) inside. The flags were irregular in shape and not closely fitted. The whole floor sloped towards the east like that of the oven above. The flags at the east end appeared to project beyond the fired area, as if forming a "hob" in front of the door as at Halt-whistle Burn (*Arch. Ael.*, 3rd series, vol. v., p. 247). The floor of this oven was about 2 inches above the third floor in W 1, and 14 inches above that floor in the north gate.

Less than 6 inches below, several very thin flags, evi-

FIG. 13. GENERAL VIEW OF OVENS, IN N.W. CORNER.

FIG. 14. SECOND OVEN OF THIRD PERIOD.

FIG. 15. FIRST AND SECOND OVENS OF THIRD PERIOD.

FIG. 16. OVENS, ETC., SHOWING THREE PERIODS.

dently fired, were met with. Apparently they had not formed part of an oven, but may have been a temporary hearth made at the beginning of the third period.

About 6 inches below this hearth, the top of the rough walling shown in Fig. 16, was exposed. It was 9 inches high and parallel to the west wall at a distance of 4 feet 8 inches. As far as it could be examined, the area between this walling and the outer walls was roughly flagged. There were no signs of firing on the flags, nor were ashes found upon them, or near the walls at this level. It seems clear, therefore, that in the period to which this structure belonged, this corner of the milecastle was not used for cooking purposes. The base of the walling was 5 inches below the second floor in W 1 and 12 inches above that floor in the north gate.

The walling was built upon a layer of mixed material containing ashes, burnt clay and many fired stones, which covered the remains of an earlier oven (Figs. 16 and 17). The floor was similar to that of the next oven above. The oven wall was 9 inches high at the north side. The lowest course was complete, showing an entrance 16 inches wide at the east end. The fired stones were evidently the débris of the upper courses. The interior was elliptical in shape and measured about 4 feet by 3 feet. The floor was 4 inches below the first period floor in W 1 and about 12 inches above the level 1 B in the north gate. A large quantity of wood-ashes was heaped against the north wall about 3 feet from the oven door.

The bed of clay on which the flags were laid extended from the wall of the building to the outer wall, completely "sealing" any remains below. The clay covered a layer of wood-ashes from 3 to 5 inches thick which had clearly been smoothed over before the clay was laid upon it. This layer of ashes extended from the face of the lower "step" of the wall of the building to within 9 inches of the outer wall. It can be seen in Fig. 18, and is indicated by the shading of small dots in section E F.

The ashes covered the remains of a still earlier structure. The latter could only be examined at the east side as the oven above was not removed. It appeared to be roughly circular and about 4 feet 6 inches in diameter. Though no part of the flooring remained, the presence of such a quantity of wood-ashes indicates that it was also an oven. It differed from those above in having a built base similar to that of the oven at Haltwhistle Burn. The lowest stones of the base were level with the footing-course of the wall of the building, but nearly 2 feet 6 inches above that of the outer wall. At this level, and within 4 feet of the oven, two fragments of grey pottery showing "rustic" surface decoration were found.

No further remains were found below this oven base. The subsoil was undisturbed near the wall of the building, and the filling of the foundation trench of the outer wall was of clean clay and gravel, as at other points.

It is clear that the outer wall was built before the lowest oven. It is equally clear that the internal building was in existence when that oven was replaced by the second, for the layer of ashes covered the flags of the footing-course and touched the face of the wall.

These five structures may be satisfactorily assigned to the three main periods of occupation. It has been stated that the remains of the second and fourth (last) ovens were covered with the débris of their own walls, whereas no such débris was found above the first (lowest) and third. It is therefore probable that the first and third ovens were removed purposely, being replaced at once by the second and fourth, and that the latter were in use, the one at the first destruction and the other at the final abandonment. This view is confirmed by the presence of the flagged platform, which separated the ovens below it from those above. The different purpose of this platform indicates that it belonged to a distinct period, which must clearly have been the second.

FIG. 17. SECOND OVEN OF FIRST PERIOD.

FIG. 18. FIRST AND SECOND OVENS OF FIRST PERIOD

The second oven probably replaced the first when the road-level in the north gate was raised from 1 A to 1 B. Why the third was replaced by the fourth is uncertain, but it is quite clear that both were worked from the same floor, and therefore do not represent distinct periods.

These ovens were of the same type as the " brick oven " so common even a century ago. In them, a fire of wood, laid on the floor, was lighted and kept burning until the interior was red-hot. The fire was then drawn out, the floor cleaned and the food to be cooked inserted. Since the discovery, already referred to, of the oven at Haltwhistle Burn, similar ovens in better condition have been found at Castleshaw, in 1907, and at CORSTOPITUM in 1910.

PATHS AND ROAD.

In the original arrangement, a path about 5 feet 9 inches wide, quite distinct from the central road, ran the full length of the front of each building. At the edge of the path was a course of kerbstones, faced at the outside, which developed into a low retaining-wall of three or four courses at the north end. Higher up the slope the kerbing was almost entirely removed and no traces of the south end of either path remained.

The paths were roughly terraced to correspond with the number of rooms, though the four sections were never horizontal, but sloped at about 1 in 10 to 12. The steps between them were much destroyed, but they appear to have been formed of irregular flags, with only a small rise between each step. The sloping portions probably had a gravel surface. The steps were just south of the doorway in each case, except between W 1 and W 2, where the fall was only 9 inches and the slope of the path made steps unnecessary. Some remains of steps were found south of the doorways of E 1, W 2 and W 3, and a sharp rise in the ground indicated their position in the other cases.

tcwaas_002_1911_vol11_0026

When the road-level I A was in use, the north end of each path would stand about 15 inches above it, but when the road was raised to I B, paths and road would be nearly level.

The width of the paths clearly suggests that there was a verandah along the front of each building, though the search for post-holes was unsuccessful. The posts may, however, have been as completely destroyed, or removed, as were the structures which retained the terraced floors inside the buildings.

Near the north end of the east path, the *fibula*, No. 1, Fig. 20, was found. Just outside the door of E 1, below a flag at the level of the first threshold, was the coin of Trajan, No. 3, Fig. 19. In the surface of the west path, between the doors of W 2 and W 3, were the coin of M. Antony, No. 1, Fig. 19, and the *fibula*, No. 3, Fig. 20, close to fragments of the bowls, Nos. 2 and 3, Plate III. Near the north end, was another portion of the *mortarium*, No. 5, Plate IV. (cp. W 1, first floor).

In the débris below the second period surface was an illegible and apparently burnt coin, assigned by Mr. Craster to the second century, and a quantity of pottery, including fragments of the Samian D. 37 bowls, Nos. 1 and 2, Plate VI., and the *mortaria*, Nos. 3, 6 and 7, Plate IV.

The central road was about 11 feet wide and followed the slope of the ground between the gates. It was constructed in the usual manner, having a foundation of rough stones, bedded in the subsoil, and a surface of gravel. It was distinctly cambered. A gutter was formed at each side of the road by the kerbing of the paths, as shown in section A B.

At the north end, the surface I B was merged into I A within 12 feet of the gate. A clay sling-bolt was found at I A, close to the east extension. The pottery definitely below the second period surface, within 20 feet

of the gate, included fragments of Nos. 8, 10, 14, 15 and 20, Plate III, and No. 11, Plate IV. (two).

In the northern half, the road and paths were not continued as separate features in the second and third periods, the later surfaces being uniform over the area between the buildings.

Within 3 or 4 feet of the north gate, the second period surface was flagged, but beyond it was generally of gravel. It was not well defined and became so close to the first period surface that much of the pottery found could not be accurately classified. Within about 25 feet from the south gate, it was merged into the first surface, which was retained throughout the three periods, as in the south gate, though the paths would appear to have been nearly obliterated.

The coin of Claudius Gothicus, No. 10, Fig. 19, was found near the east building, about 25 feet from the north gate, at a point where the third period flags were missing and where the second and third surfaces were indistinguishable. The definitely second period pottery included Nos. 8, 19 to 21, 25 to 27 and 33, Plate IV.

In the third period, the whole surface between the buildings was roughly flagged for about 30 feet from the north gate, beyond which the lower surface was utilized. The flagging was intact except near the east building. It was approximately level with the third floors in E 1 and W 1 (section A B), and sloped down to join the upper flagged floor (3, section G H) in the north gate.

The two coins of Maximian, Nos. 13 and 14, Fig. 19, and the *fibula*, No. 5, Fig. 20, were found between the buildings, within 10 feet of the gate and not more than 3 inches above the flags. The pottery included further fragments of Nos. 1, 2 and 6, Plate V. (cp. W 1, third floor). The coin of Constantine I. and a complete hand-mill were found in the south-east corner, between the south wall of the building and the outer wall.

Outside the north gate there was no definite continuation of the road at any level. There were no traces of pitching, like that found below the surfaces 1 A and 1 B, nor of kerbing. Above those levels, the material appeared to be débris only.

Any remains of a road from the south gate to the Military Way, 35 yards to the south, must have been entirely removed during the railway operations of 1835.

Notes on the "Finds."

Two coins, Nos. 5 and 6, Fig. 19, were overlooked at the time and recovered from the upcast later. They were fastened together, evidently as the result of burning, and were covered with burnt matter.

The Coins.

By H. H. E. Craster, M.A.

Seventeen coins were found in the Poltross Burn milecastle, of which one was an indecipherable "second brass" of the second century. The remainder are described below. Fortunately the levels at which they were found were accurately noted. The *denarius* of Mark Antony, the two *sestertii* of Trajan, one (No. 7) of the three *ases* of Faustina Senior and most probably the others (Nos. 5 and 6) also, came from the lowest or "first-period" level, the coins of Gallienus and Claudius Gothicus from the middle stratum, to which the Victorinus probably also belonged, and the later coins, together with a stray *as* of Hadrian, from the top level. Evidently the first occupation extended into the latter part of the second century, and the second occupation to the year 270, or later in the third century.

The value of the historical evidence given by these coins is enhanced by the fact that the coins previously found in milecastles along the line of the Roman Wall have been practically unrecorded. The Cawfields milecastle produced a *denarius* of Vespasian and another of

Marcus Aurelius (*Arch. Ael.*, 1st series, vol. iv., p. 59). In regard to the Housesteads milecastle we have to be content with the vague statement that " coins of Hadrian and Antoninus Pius were found " (Bruce, *Roman Wall*, 3rd edition, p. 162). The other milecastles hitherto excavated either produced no coins, or the coins were not noted.

We have, however, a full list of the coins discovered in the recent excavation of Winshields milecastle, and the coins from its second and third levels give a close and interesting parallel to those found on the corresponding levels at Poltross Burn, viz. :—

Poltross Burn.		Winshields.	
Hadrian	1	Claudius Gothicus ...	1
		Victorinus	1
Gallienus	1	Tetricus	1
Claudius Gothicus ...	1	Carausius	1
Victorinus	1	Diocletian	1
Diocletian	2	Maximianus... ...	1
Maximianus... ...	2	Galerius	1
Constantius Chlorus...	1	Constantine the Great	1
Constantine the Great	1	Constantine junior ...	1

In each case the latest coin is one struck at the London mint between the years 317 and 324. When we take into consideration the extremely common occurrence, in the camps on the Wall, of later Constantinian coins and coins of the house of Valentinian, the absence of such later coins from both these milecastles can hardly be treated as accidental. The presence in both milecastles of several *folles* (large copper coins distinguished by the laureated head of the emperor) points in the same direction. *Folles* first came to be minted at the time of Diocletian's monetary reform of A.D. 295–6. They ceased to be issued in the western provinces of the Empire in 315 when Constantine introduced the *nummus centenionalis*,

a copper coin of much smaller size and weight. The natural tendency, formulated in Gresham's law, for bad money to drive out good, operated upon this as on other occasions. Hence the fecundity of most Roman sites in small Constantinian coins, while the Diocletian *follis* is comparatively rare.

On the neighbouring site of CORSTOPITUM hundreds of examples of the *nummus centenionalis* have been found, while the total number of *folles* hitherto discovered there is only five. Yet the handful of coins from these two milecastles furnishes no fewer than eight specimens.

Such evidence as we have seems to point to the Poltross Burn milecastle being finally abandoned after the year 320, but before 330, since at the latter date the debasement of the coinage had been proceeding long enough, and had become sufficiently marked, for the bulk of the Diocletian coinage to have given way to the new and inferior currency. The same must be true of Winshields, and the conclusion therefore suggests itself that Constantine may have carried out, in the latter part of his reign, a change in the frontier system which involved the disuse of milecastles.

The only one of the coins that calls for special comment is that of Constantine the Great (No. 16). This is a London-minted coin bearing upon its reverse the Christian emblem of the cross; a minor variety of such rarity that the use of Christian emblems in the London mint has been called in question; and the only recorded specimens are a coin of Constantine II. in the British Museum, one of Crispus found in 1909 at CORSTOPITUM, and the present example. All these coins have the same reverse, and form part of the same issue, but the obverse is in each case different. The obverses are:—

IMP CONSTANTINVS AVG. Helmeted and cuirassed bust left, holding spear over left shoulder; a plume in the helmet. Poltross Burn milecastle.

FL IVL CRISPVS NOB CAES. Laureated and draped bust right. CORSTOPITUM.

FL CL CONSTANTINVS IVN N C. Radiated and cuirassed bust left. British Museum.

For a note on this variety and its significance, see *Arch. Ael.*, 3rd series, vol. vi., p. 253.

COIN TABLES.

No.	Obverse.	Reverse.	Remarks.
		Silver.	
		MARK ANTONY.	
1	ANT . AVG III . VIR . R . P . C Galley.	LEG VI Legionary eagle between standards.	Denarius; B.C. 32-31; eastern mint; well worn.
		Bronze and Copper.	
		TRAJAN.	
2	IMP CAES NERVAE TRAIANO AVG GER DAC PM TR P COS V P P Laureated bust r.	S P Q R OPTIMO PRINCIPI S C Fortune standing l. with rudder and cornucopia.	Sestertius; A.D. 104-111; Cohen 477; good preservation.
3	Similar.	S P Q R OPTIMO PRINCIPI S C Rome helmeted seated l. on pile of arms.	Sestertius; A.D. 104-111; Cohen 391.
		HADRIAN.	
4	IMP CAESAR TRAIANVS HADRIANVS AVG Laureated bust r.	Indecipherable.	As; *circa* A.D. 117-119.
		FAUSTINA (SENIOR?).	
5	Inscription illegible; draped bust r.	Indecipherable.	As; shows traces of burning.
		FAUSTINA SENIOR.	
6	DIVA FAVSTINA Draped bust r.	AETERNITAS S C Aeternitas standing l., raising r. hand and holding sceptre.	As; after 141 A.D.; Cohen 29; shows traces of burning.

tcwaas_002_1911_vol11_0026

No.	Obverse.	Reverse.	Remarks.
7	Similar.	Similar.	As; after 141 A.D.; Cohen 29; coated with burnt matter.
		GALLIENUS.	
8	GALLIENVS AVG Radiated head r.	DIANAE CONS AVG Deer moving r. and looking back; mint-mark (in exergue) ϵ	*Circa* A.D. 266-268; struck at Rome; Cohen 154.
		CLAUDIUS GOTHICUS.	
10	IMP CLAVDIVS AVG Radiated and cuirassed bust r.	ANNONA AVG Annona standing l. holding ears of corn and cornucopia; no mint-mark.	A.D. 269; struck at Rome; Cohen 21.
		VICTORINUS.	
9	VICTORINVS P F AVG Radiated and draped bust r.	INVICTVS The Sun-god running to l., raising r. hand and holding whip in l.; a star in the field.	Struck in Gaul; A.D. 268-270; Cohen 50.
		DIOCLETIAN.	
11	IMP DIOCLETIANVS AVG Laureated and cuirassed bust r.	GENIO POPVLI ROMANI Genius standing l. holding patera and cornucopia.	No mint-mark; Follis, probably of Trier or London mint; A.D. 296-305; Cohen 87.
12	IMP DIOCLETIANVS P F AVG Laureated and cuirassed bust r.	M SACRA AVGG ET CAESS NN Moneta standing l. holding scales and cornucopia.	Mint-mark $\frac{|*}{A\ T\ R}$ Follis from Trier mint; A.D. 305-306; Cohen 345; good preservation.
		MAXIMIANUS HERCULEUS.	
13	IMP C MAXIMIANVS P F AVG Laureated and cuirassed bust r.	GENIO POPVLI ROMANI Genius standing l. holding patera and cornucopia.	No mint-mark; Follis, probably of Trier or London mint; A.D. 296-305; Cohen 180.
14	Similar.	Similar.	Same as last.
		CONSTANTIUS CHLORUS.	
15	CONSTANTIVS NOB C Laureated and cuirassed bust r.	Similar.	No mint-mark; Follis, probably of Lyons mint; A.D. 296-305; Cohen 71; good preservation.

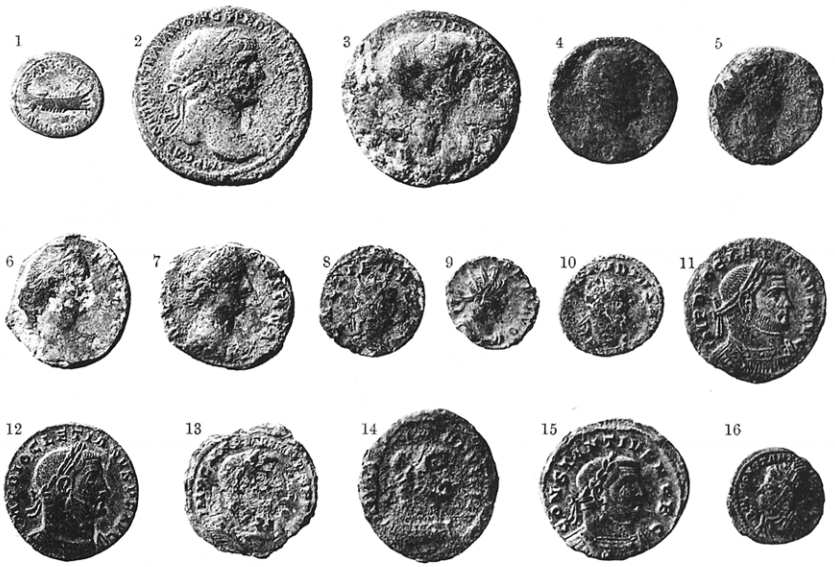


FIG. 19. THE COINS ($\frac{3}{4}$).

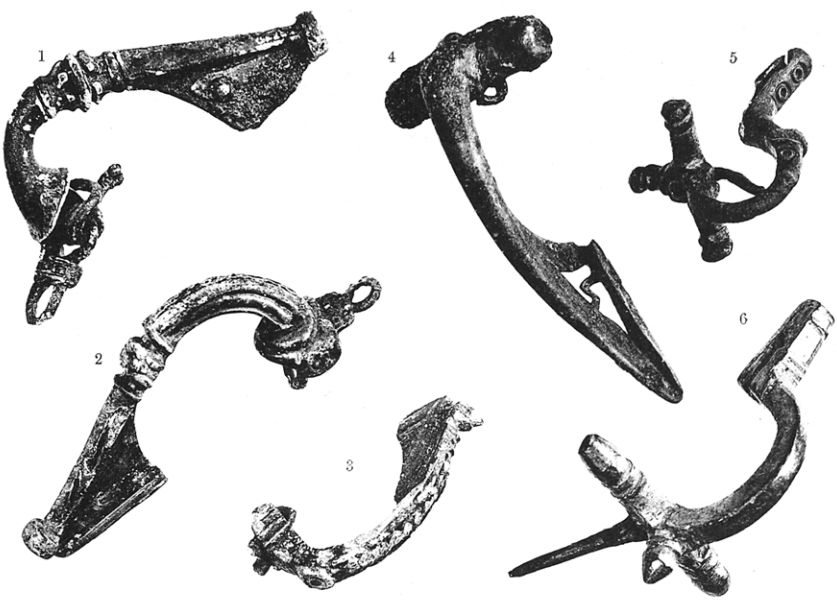


FIG. 20. THE FIBULAE ($\frac{5}{6}$).

No.	Obverse.	Reverse.	Remarks.
	CONSTANTINE THE GREAT.		
16	IMP CONSTANTINVS AVG Helmeted and cuirassed bust l. holding spear over l. shoulder; a plume in the helmet.	VICTORIAE LAETAE PRINC PERP Two Victories placing on an altar a shield inscribed VOT P R; on the face of the altar a cross within a wreath.	Mint-mark P L N; silvered nummus centenionalis of the London mint and bearing Christian emblem; A.D. 317-324; variety of Cohen 638; fair preservation.

THE FIBULAE.

Fig. 20. 1—Bronze harp-shaped bow fibula; length, without ring, 2¼ inches; flat circular knob at foot, decorated collar-mouldings at middle of bow and trumpet-shaped head; no enamel decoration; spiral spring coiled on both sides of single lug cast solid with head; movable ring; sheath has been broken and repaired by rivetting bronze plate on original sheath-plate. First level; north end of east path. Type in use until about 175 A.D. See Curle, *Newstead Report*, p. 321; *Yorks. Arch. Journal*, vol. xxi., p. 148; *Arch. Ael.*, 3rd series, vol. v., p. 400.

2.—Bronze fibula, same general type as No. 1; length, without ring, 2⅜ inches; mouldings at middle of bow not carried round flat underside of bow; between mouldings and foot, bow decorated with enamel of yellowish colour; head box-shaped and hollow, enclosing spiral spring coiled on cross-pin fixed in sides; ring cast solid with head. First level; W 1.

3.—Bronze bow fibula; length, without remains of ring, 1⅝ inches; bow decorated with enamel (decayed) in lozenge pattern; circular ornamental stud near head (survival of stud securing end of spring in original form of this type); head grooved to represent coiled spring; no spiral spring, pin being simply hinged; ring cast solid with head. First level; west path. Type in use as late as Nos. 1 and 2. A fibula exactly the same as No. 3 in

details of pin, decoration, etc., was found with pre-Hadrianic coins and pottery at CORSTOPITUM in 1910. Also see Curle, *Newstead Report*, p. 323.

4.—Bronze bow fibula; length $2\frac{3}{4}$ inches; sheath-plate pierced, forming step pattern; bow undecorated; spiral spring protected by box-shaped cover and coiled on cross-pin fixed in ends of cover. Level uncertain; found in material of waggon-way. Type probably in use as late as Nos. 1–3. See Curle, *Newstead Report*, p. 318.

5.—Bronze cross-bow fibula (bent when found); length originally about $2\frac{1}{8}$ inches; tubular sheath; plain collar-moulding on bow and at ends of arms; decoration of circles on sheath, bow and head; bronze pin, hinged; iron cross-pin through arms. Third level; between buildings, near north gate.

6.—Base silver cross-bow fibula; length $2\frac{1}{4}$ inches; tubular sheath; bow square in section and undecorated; plain collar-moulding on arms and knob; bronze pin, hinged; iron cross-pin through arms. Third level; W 1.

OBJECTS OF BRONZE, ETC.

Fig. 21. 1.—Mounting; silvered surface; attached, probably to leather, by two studs; level uncertain.

2.—Buckle; iron cross-pin; third level, E middle.

7.—Mounting; attached, probably to leather, by single stud; first level, between north gate and oven.

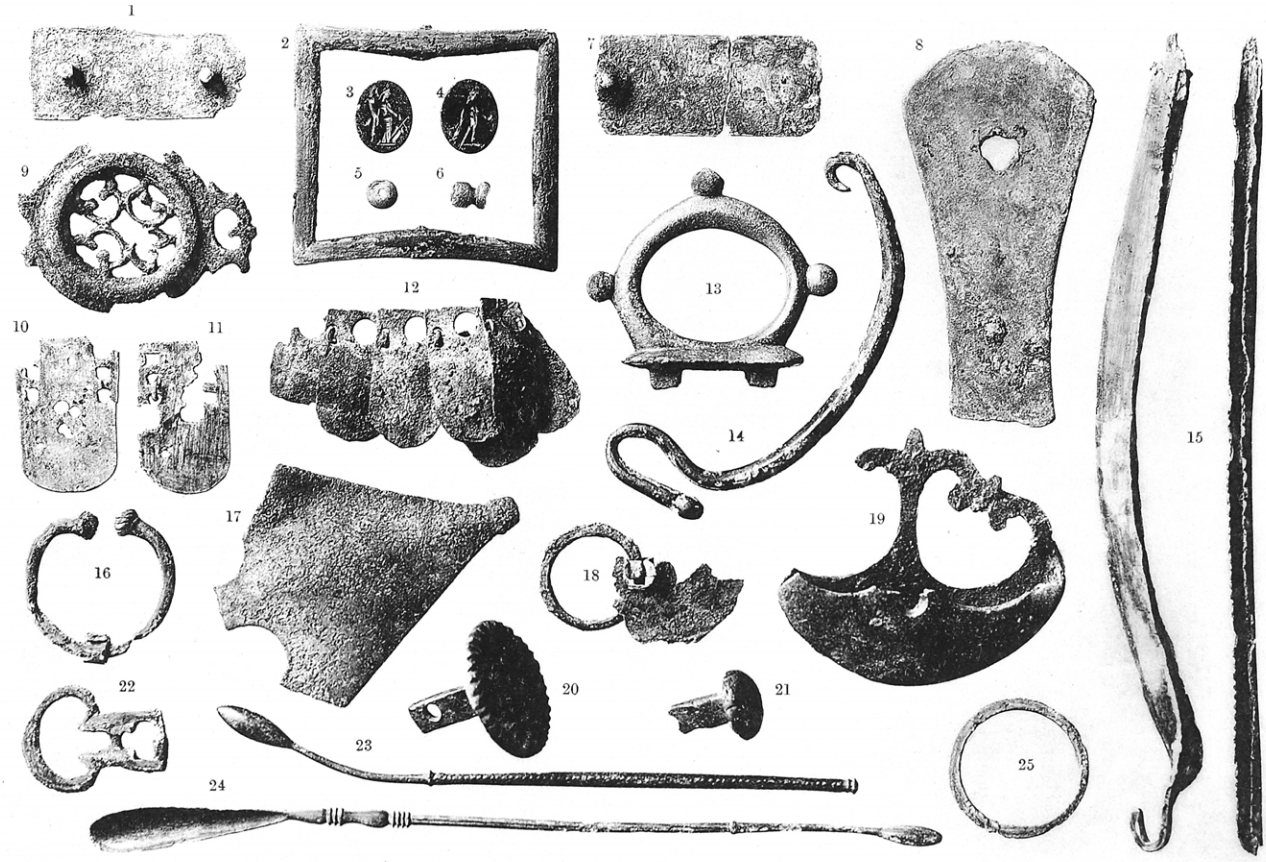
8.—Handle of *patella*; level uncertain, north-east corner.

9.—Pierced ornamental mounting; attached, probably to leather, by two studs; first level, W 1.

10 and 11.—*Lorica*-scales; length, $1\frac{1}{8}$ inches; silvered surface; second level, W 1.

12.—Six *lorica*-scales; length, 1 inch; first level, between north gate and oven.

13.—Harness ring; attached by two studs; much worn by strap; second or third level, W middle.



tcwaas_002_1911_vol11_0026

FIG. 21. OBJECTS OF BRONZE, ETC. (3/4).

14.—Handle of box, or jar; bow square in section; level uncertain.

15.—Guard, or sheath, for edge of large cutting implement (broken when found); length, $11\frac{3}{4}$ inches; has been broken and soldered together close to point of modern fracture; hook at other end missing; level uncertain, found outside south-east corner. Guards of this type have not been previously noted on the line of the Wall.

16.—Penannular brooch; pin missing; level uncertain.

17.—Ornamental plate; silvered surface; level uncertain, found outside north gate.

18.—Remains of lid, with lifting-ring; first level, W 1.

19.—Chape of sword-sheath; second level, W 1.

20.—Button, or fastener, probably for leather strap; first or second level, between north gate and ovens.

21.—Stud; cp. No. 20; level uncertain.

22.—Buckle, for narrow strap; pin and strap attachment missing; level uncertain. For complete example, see *Arch. Ael.*, 3rd series, vol. v., p. 409.

23.—Surgical instrument; length, $4\frac{1}{2}$ inches; roughened grip; level uncertain.

24.—*Ligula;* length, $6\frac{1}{8}$ inches; inside surface of spoon gilt; level uncertain, found outside north wall, east of gate.

25.—Ring; level uncertain.

A small mass of run lead was found.

Intaglios. Fig. 21, 3.—Hard dull red stone, unpolished; Fortune with rudder and cornucopia; second level, E 1.

4.—Similar stone, polished; a genius (?); second or third level, north-east corner.

Stone.

1.—Roughly dressed yellow sandstone pillar, hypocaust type, unfired; height, 14 inches, section $7\frac{1}{2}$ inches by 6 inches; body roughly reduced about middle for 7 inches; second level, north gate.

2.—Unfinished and uninscribed altar, yellow sandstone ; intended finished size about 14½ inches high by 7½ inches by 5 inches ; base reduced to 4 inches by 3 inches by 1 inch, to fit into separate base ; top, sides and lower half of face rough ; upper half carefully dressed, showing plain band, 2 inches, and ogee moulding, 1¾ inches, with space for inscription below ; second level, north gate.

3.—Chisel-dressed yellow sandstone pillar, hypocaust type, unfired ; height, 14 inches, section, 9 inches by 8 inches ; capital and base 4 inches high, remainder of body reduced to about 8 inches by 6½ inches ; second level, W 1.

4.—Lamp, yellow sandstone ; roughly circular body, 5 inches diameter, 2 inches thick, curved on underside, one projection 1 inch long for wick ; oil reservoir 3¼ inches diameter, ⅞ inch deep, hole for wick 1¼ inches diameter, the two connected by a small channel ; second or third level, W middle.

5.—Roughly rounded sandstone ball, diameter about 4 inches ; two grooves cut at right angles round circumference apparently for attachment of cord ; probably a weight ; level uncertain.

6.—Hand-mill ; upper stone, yellow sandstone, beehive type ; diameter 13 inches, height 6 inches ; two handle-holes ; grinding surface much worn : lower stone, grey granite ; diameter 15 inches ; probably third level, south-east corner.

7.—One half upper millstone, yellow sandstone, ordinary flat type ; diameter 15½ inches ; second level, E 1.

8, 9 and 10.—Fragments of three upper millstones, yellow sandstone ; each, diameter 17 inches ; levels uncertain, one from E middle.

No inscribed stones were found.

Iron.

1.—Joiner's hammer (?) ; length 7¼ inches, about 1 inch square in section, with rounded edges ; large claw at one end apparently for extracting nails ; first level, E 1.

2.—Pickaxe ; length about 15 inches originally ; axe portion 8½ inches long, width of cutting edge about 4¼ inches ; pick point broken ; second level, E 1.

3.—Heavy hammer, apparently for dressing stone ; length 7¾ inches, section at middle 2 inches by 1¾ inches, tapering to point at one end and to cutting edge 1¼ inches wide at other ; hole for handle 1 inch diameter ; cutting edge parallel to handle ; first level, about middle of west path.

4.—Fork-shaped object, originally with two prongs, one missing, possibly for guiding rope or strap ; full length 10¼ inches, prong 5¾ inches, shank for fixing into handle, or rest, 3¾ inches, space between prongs 1¼ inches ; signs of wear at base of prongs ; level uncertain.

5.—Knife ; blade 5½ inches long, 1⅜ inches wide, tapering to point ; shank 2½ inches long ; level uncertain.

6.—Socket, head missing ; length 6½ inches, to fit shaft about 1½ inches diameter ; first level, E 3.

7.—Spear head ; length 6 inches ; blade, 3¾ inches by 1⅜ inches ; first level, E 3.

8.—Spear head ; length 7½ inches ; blade 4½ inches by 1½ inches ; first or second level, near ovens.

9.—Spear head ; length 8 inches ; blade 5 inches by 1½ inches ; first level, W 1.

10.—Spear head ; length 5 inches ; level uncertain.

11.—Spear head ; blade 2½ inches by 1 inch, solid shank 2½ inches long, instead of hollow socket.

12 and 13.—S-shaped hooks, probably used for suspending cooking-pots or other articles.

14.—Blades of pair of shears, spring bow missing ; each blade about 2½ inches by 1 inch, tapering to a point.

Several nails of medium and small size were also found.

All the objects were much corroded. Where possible, they are being " reduced " by Krefting's method, by Mr. H. A. Auden, M.Sc., D.Sc. of Liverpool.

Glass.

Six fragments of window glass were found, all at the first level. The difference in the grain of the rough surface indicates that they came from different sheets. One piece is flaked to a sharp edge on one side, like the edge of a flint implement. There were several fragments of a very thin vessel, and portions of two long and narrow bottle-necks. Two small beads were found, Fig. 21, Nos. 5 and 6. No. 5 is of green glass; second level, E 1: No. 6 of blue glass-paste; level uncertain.

Tiles.

Five fragments of *tegulae* and two of *imbrices* were found, mostly below the second level. There were also three fragments of one flue (box) tile, and one pillar tile measuring $7\frac{1}{2}$ inches by $7\frac{1}{2}$ inches by 2 inches.

Pottery.

Portions of nearly 300 vessels were found. The shape and use of over 250 could be ascertained, and the fragments of these have been deposited in the Museum at Tullie House, arranged in the order given below. Sectional elevations of 100 vessels are shown on Plates III., IV. and V. No whole vessels were found, all the sections being drawn from fragments. Broken lines indicate the probable shape of the vessel beyond the portion supplied by the fragments. The decorated Samian is shown on Plate VI.

The number of vessels of each main type is as follows:— Bowls, other than *mortaria*, 22; *mortaria*, or *pelves*, 21; jars, other than cooking-pots, 76; cooking-pots, 63; vases or urns (*i.e.* large jars, average height 10 inches), 9; bottles, or jugs, single-handled, 19; dishes, or plates, 14; Castor ware, small vases, 3; Samian ware, decorated vessels, 10; plain, 10; large two-handled storage vessels, globular type, 6 or 7.

The distribution of the vessels is as follows :—17 appear to belong to the earlier part of the first period ; 49 found mostly in first-period débris ; 45 uncertain, first and second, from between buildings, northern half ; 32 in second-period débris ; 11 uncertain, second and third ; 50 in third-period débris ; and 43 uncertain, mostly from southern portion of interior, clearly including vessels of all three periods.

The diameters given refer to the outside measurement of the rim in each case.

Unglazed Wares.

Early First Period.

Bowls (8). Plate III., Nos. 1–6. No. 1, diameter 6¼ inches, light grey, dark surface wash inside and on rim ; grooved rim, double hollow mould at bend in side ; W 1. No. 2, diameter 7¾ inches, dark brown, traces of dark surface wash ; grooved rim ; west path. No. 3, diameter 7¼ inches, grey ; grooved rim ; west path. No. 4, diameter 8⅜ inches, brown ; plain rim ; lattice decoration on side above bend ; W 2. No. 5, diameter 7⅜ inches, grey ; plain rim ; W 2. No. 6, diameter 7⅛ inches, grey ; plain rim ; west path, or road. One, not drawn, diameter 7 inches, red ; similar to No. 4 without lattice decoration ; W 1.

Bowls of this type are generally associated with first century sites. It is now clear that they continued in use until the time of Hadrian, though apparently not as late as 140 A.D. They have not been found in the forts on the Antonine Wall, nor in connection with the Antonine occupation of Newstead (Curle, *Newstead Report*, p. 249).

Plate IV., No. 4, diameter 8½ inches, brow[illegible]l ; similar to three bowls from Haltwhistle Burn (*A[illegible]el.*, 3rd series, Plate V., No. 3) ; W 1 and north g[illegible]vel 1 A.

Mortaria (2). Plate IV., No. 5, diamet[illegible] inches, brown, cream surface wash ; W 1 and wes[illegible] Frag-

ment of base of similar vessel; transparent grit; north gate, level 1 A.

Jars (3). Two fragments of same vessel; grey, "rustic" surface decoration; between north gate and lowest oven. "Rustic" ware is usually associated with first century remains (Curle, *Newstead Report*, p. 247). Fragments of one or two "rustic" jars were found in the Fort to the south-west of the milecastle in 1910. Plate III., No. 24, diameter 5⅜ inches, brown-red body, black surface; W 1 and W 2. Plate III., No. 26, diameter 4⅝ inches, grey, blackened surface; roughly wheel-made; E 3, near hearth, below first floor. The details of this jar are typical of most of the first period jars Nos. 12–21.

Bottles, or jugs, single-handled (4). Two, type Plate IV., No. 11, brown, cream surface wash (?); north gate, level 1 A. One, same type, white; W 1. One, type not drawn, grey brown; sides of mouth pinched together to form spout; east side of road, near north gate, level 1 A; cp. Curle, Newstead, Fig. 33, No. 9, and Melandra Castle, Plate V., No. 4.

First Period (mostly in Débris).

Bowls (5). Plate III., Nos. 7–10. No. 7, diameter 7½ inches, brown-red, hard; cp. Melandra Castle, Plate IV., No. 10. No. 8, diameter 8¾ inches, light brown, soft; road, near north gate; cp. Samian bowl from Newstead, Plate XL., No. 20. No. 9, diameter 6⅛ inches, light brown, hard; E 1. No. 10, diameter 7 inches, light red, soft; road, near north gate; cp. No. 9, or Haltwhistle Burn, Plate V., Nos. 18 and 19. One base, grey.

Mortaria (6). Plate IV., 1–3, 6 and 7. Grit, white (opaque), or transparent. No. 1, diameter 10⅜ inches, brown-red, cream surface wash originally; leaf pattern stamp on rim (twice); W 2. No. 2, diameter 10⅛ inches, light brown, cream surface wash; found outside north wall, at level of offset, close to fragment of Samian, Drag.

tcwaas_002_1911_vol11_0026

27. No. 3, diameter 10⅛ inches, cream ; has been broken and repaired by rivetting ; west path. No. 6, diameter 10¼ inches, brown, cream surface wash ; west path. No. 7, diameter 9¾ inches, red body, blue surface (due to over-firing ?) ; illegible name-stamp on rim ; west path. One base, cream ; road, near north gate.

Jars, special types (3). Plate III., Nos. 25, 27 and 28. No. 25, diameter 2⅛ inches, hard red body, black surface ; lower portion decorated with incrustation of fine grit ; W 3 ; cp. Haltwhistle Burn, Plate V., No. 7. No. 27, diameter 4½ inches, brown, soft ; probably had lid originally ; W 1. No. 28, diameter 3½ inches, light brown body, grey surface ; west path.

Jars, ordinary types (14). Plate III., Nos. 12–21. These vessels are roughly wheel-made, with bases generally moulded like that of No. 26, and sides undecorated. The clay, except that of No. 12, is somewhat coarse. No. 12, diameter 5⅞ inches, dark grey, fine, hard ; moulded base ; W 2. Nos. 13–16, 20 and 21, diameters 4¾–5⅜ inches, light grey, dark surface ; Nos. 17–19, diameters 4⅞–5⅜ inches, light brown ; No. 13 from E 2, Nos. 14, 15 and 20 from road, near north gate, and remainder from E 1, W 1, W 2 and paths.

Cooking-pots (7). Plate III., Nos. 22, 23, 29 and Plate IV., No. 32. This type was used throughout the first and second periods, but was practically superseded by the type, Plate V., Nos. 6–15, in the third. The clay contains a large proportion of very fine grit. The ware is either black throughout, or the body grey (or reddish), with a black coating on the surface. The uniform black body colour is produced by fuming vessels of ordinary clay in dense black smoke at the end of the firing process ; and the black coating by dipping the vessels, in biscuit state (after first baking), in a solution of black iron oxide and refiring at a lower temperature (May, *The Roman Pottery in York Museum, Part III. ; Report of York Phil. Society*, 1910, p. 7).

tcwaas_002_1911_vol11_0026

The rim appears to have been finished on the wheel, but the vessels do not show the internal grooving common to ordinary wheel-made vessels. The base, which is quite plain, and the lower part of the body, have a uniform thickness, usually less than $\frac{3}{16}$ inch. About half the body is decorated with a lattice pattern on a rough ground, the remaining surface and the rim being roughly burnished. There is often a zigzag decoration on the neck below the rim.

Average diameter 5 inches, but No. 22, $6\frac{1}{4}$ inches; cp. Newstead, Fig. 28, Nos. 1–10. No. 23, uncommon type, diameter $5\frac{1}{4}$ inches, black, bright surface. No. 29, diameter $4\frac{5}{8}$ inches, grey, bright black surface; handle-hole formed by pressing in side of vessel; W 2. In some cases, lifting holes have been drilled through the rims.

Vase, or urn (1). Plate III., No. 11, diameter $4\frac{1}{8}$ inches (body, $8\frac{3}{8}$ inches), black, hard; band of lattice decoration between double hollows; cp. Newstead, Plate XLVII., No. 38 (pre-Antonine).

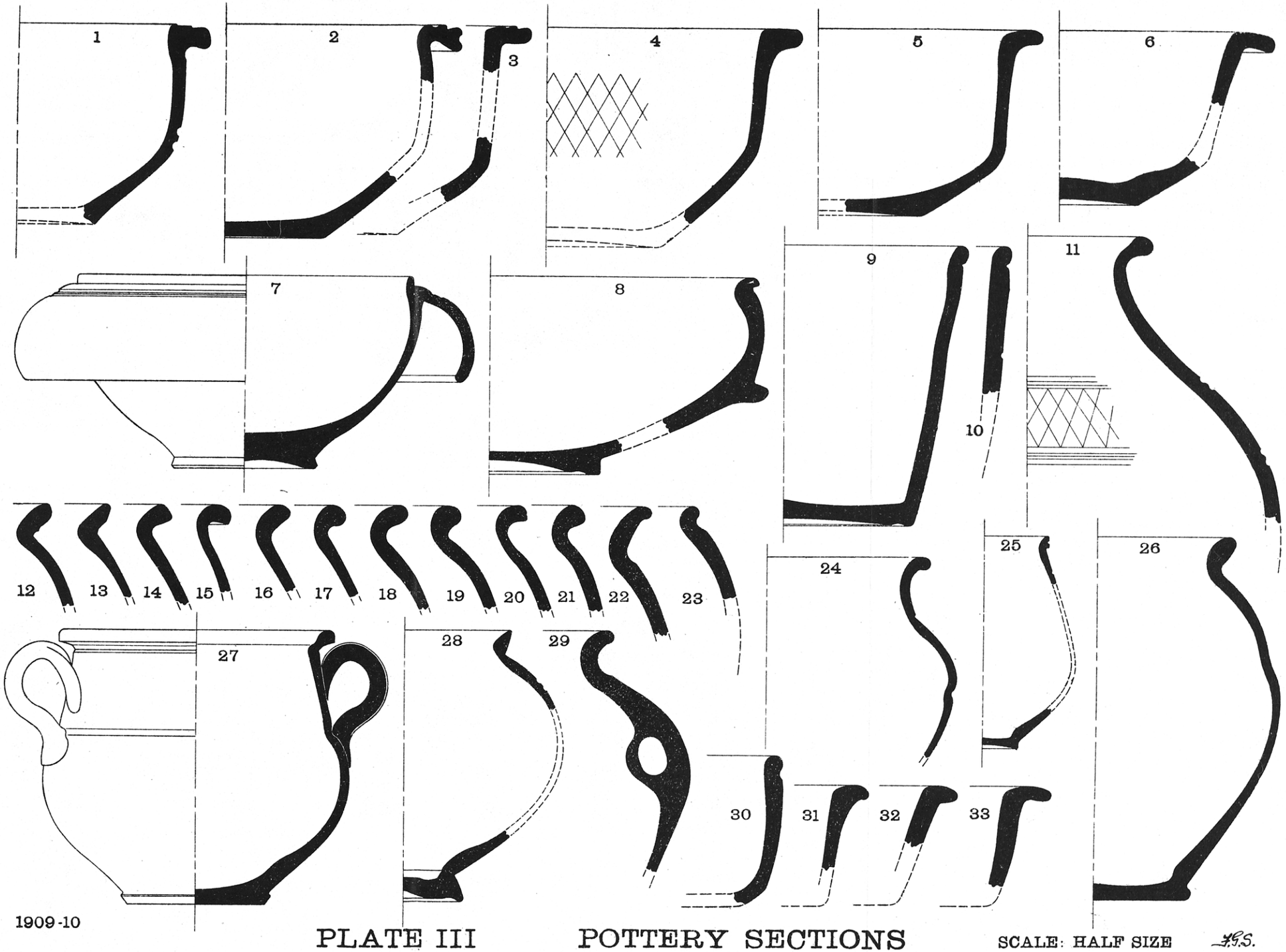
Bottles, or jugs, single-handled (4). Type Plate IV., No. 11. One, red, cream surface wash; road, near north gate. One, brown, cream surface wash; road, near north gate. Plate IV., No. 12, cream; W 3. One base, buff, hard; W 1.

Dishes, or plates (6). Plate III., Nos. 30–33. All of "cooking-pot ware," and usually decorated with lattice pattern. No. 30, diameter $7\frac{1}{4}$ inches, black. No. 31, diameter 7 inches, grey, black surface. No. 32, three, average diameter 8 inches, grey, black surface. No. 33, diameter $8\frac{1}{2}$ inches, black, bright surface..

UNCERTAIN, FIRST AND SECOND.

Bowls (2). One rim, type Plate III., No. 9, brown. One moulded base, red, hard.

Mortaria (2). Plate IV., No. 9, diameter $9\frac{1}{4}$ inches, brown; outside north gate. One rim, type Plate IV., No. 7, brown-red.



1909-10

PLATE III POTTERY SECTIONS SCALE: HALF SIZE H.G.S.

tcwaas_002_1911_vol11_0026

Jars (21). Of these, six approximate to the first period types, in section, clay and finish, and eight to the second period types Plate IV., Nos. 19, and 22–28, described below. The remainder include Nos. 39 and 40 and several bases.

Cooking-pots (10). Type Plate IV., No. 32.

Bottles, or jugs, single-handled (6). One, type Plate IV., No. 11, light brown, cream surface wash (?). Plate IV., Nos. 15, 17 and 18, brown red, cream surface wash (?). One base and one handle (different). Plate IV., No. 35, diameter $5\frac{1}{8}$ inches, dark grey, hard ; cp. Newstead, Plate XLIX., B., No. 3.

Second Period.

Bowls (2). Plate IV., No. 33, diameter $6\frac{3}{4}$ inches, whitish, hard ; zigzag decoration on side in brown paint ; road, near north gate. One, type Plate V., No. 19, diameter 6 inches, grey.

Mortaria (2). Plate IV., Nos. 8 and 10. Grit, white (opaque), or transparent. No. 8, diameter $9\frac{3}{8}$ inches, red, soft ; moulded base ; road. No. 9, diameter $12\frac{1}{4}$ inches, brown-red, hard, hematite surface wash ; W 1.

Jars (14). Plate IV., Nos. 19, 22–28, 30, 31, and 41. The second period jars are distinctly superior to those of the first in quality of clay and workmanship. The clay is generally free from grit. The colour is light grey, or a grey-blue not met with in the earlier vessels. The change in the type of rim is distinct. The bases found are mostly plain, but the sides are often decorated with the lattice pattern. Diameters $4\frac{1}{4}$ inches (No. 27) to $5\frac{1}{2}$ inches (No. 23) ; Nos. 19 and 25–27 from road, northern portion, rest from E 1 and W 1. No. 28, two, diameter $4\frac{5}{8}$ inches, " cooking-pot ware," reddish body, black surface ; wheel-made ; E 1. No. 30, diameter $3\frac{3}{8}$ inches, light grey, gritty ; single handle (?) ; E 1 ; cp. Newstead, Fig. 31, p. 256. No. 31, diameter $4\frac{7}{8}$ inches, black body, white

surface, hard; lattice decoration; W 1. No. 41, three, average diameter 3⅜ inches, grey, gritty; two from W 1.

Cooking-pots (3). Type Plate IV., No. 32.

Vases, or urns (4). Plate IV., Nos. 20, 21, 29 and 34. No. 20, diameter 3⅞ inches, grey-blue, hard; road, near north gate. No. 21, diameter 5⅛ inches, grey-blue, hard; road, near north gate. No. 29, diameter 4 inches, grey-blue, hard; road. No. 34, diameter 6⅜ inches, grey, soft, gritty; W 1.

Bottles, or jugs, single-handled (3). Plate IV., Nos. 13, 14 and 16. No. 13, brown, cream surface wash (?); road, near north gate. Nos. 14 and 16, light-red; E 1.

Dish, or plate (1). Plate IV., No. 42, diameter 8⅝ inches, dull red; W 1.

Uncertain, Second and Third.

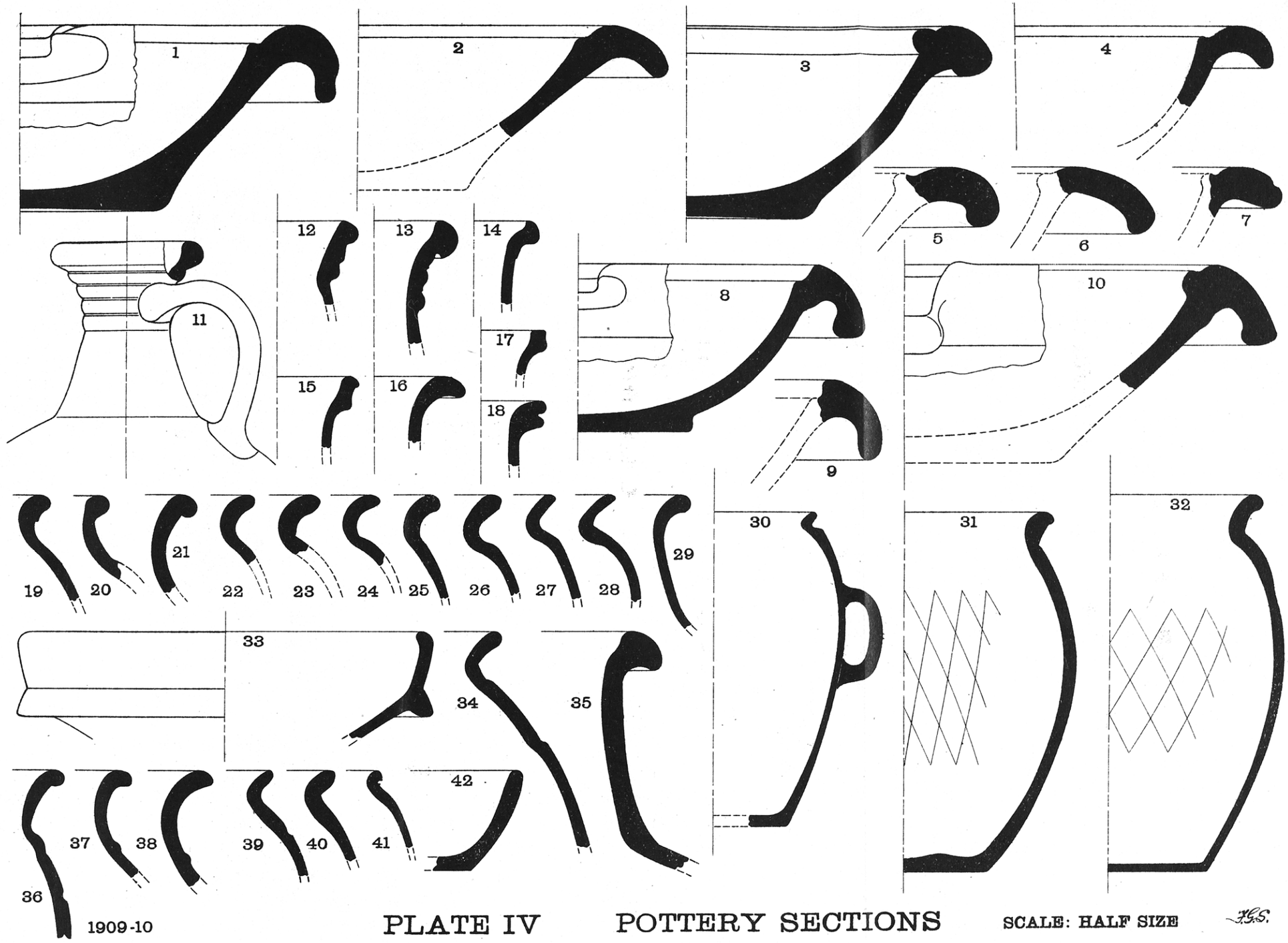
Jars (3). Types Plate IV., Nos. 22–27, grey, hard.

Cooking-pots (7). Type Plate IV., No. 32.

Third Period.

Bowls (2). Plate V., Nos. 18 and 19. No. 18, diameter 9 inches, grey body, blackened surface; W 1. No. 19, diameter 6 inches, light brown.

Mortaria (6). Plate V., Nos. 1–4. This type, usually called the "hammer-head," appears to have been in use in the third period only, at this milecastle. The flange, which was distinctly curved in the first period, became flatter and more inclined in the middle types (Plate IV., Nos. 8 and 9) and finally almost flat, except for the characteristic reeding or grooving, and nearly vertical, as in Plate V., No. 4. The spout is very small, being merely a depression in the rim and quite different from the prominent spouts of the earlier types. The grit is also different, being coloured (red, blue or brown), or black, but not white, or transparent. The grooving is an almost invariable feature.



1909-10

PLATE IV POTTERY SECTIONS

SCALE: HALF SIZE

H.G.S.

tcwaas_002_1911_vol11_0026

No. 1, diameter 10⅛ inches, cream, hard ; W 1 and road. Base of similar vessel ; road. No. 2, diameter 10 inches, light red, cream surface wash ; W 1 and road. No. 3, diameter 10 inches, pink body, white surface ; W middle. No. 4, diameter 10 inches, white ; found in Vallum Ditch. Rim and side, similar to No. 4, white ; W middle.

Jars (7). Three, type Plate IV., Nos. 22–24, grey. Four, type Plate V., No. 5, diameters 4½–5 inches, light grey, gritty, similar to cooking-pots type Plate IV., No. 32, but without black surface ; lattice decoration on body.

Cooking-pots (29). Four, type Plate IV., No. 32 ; twenty-five, Plate V., Nos. 6–17. The latter belong to an entirely different type, which appears to have been in use in the third period only, at this milecastle and also at Winshields. The vessels are usually larger than those of the earlier type, the height being from 8–10 inches. Two, Nos. 12 and 14, had very large mouths, the rim diameters being 7¼ inches (No. 12) and 7¾ inches (No. 14), but the heights could not be ascertained. No. 6, diameter 6⅜ inches, is typical of the shape and proportions of the bodies and bases. The rims vary considerably ; Nos. 7–9, 16 and 17, are uncommon, there being only one example of each : Nos. 6 and 13–15, with a groove inside the mouth, and usually a prominent shoulder below the neck, are represented by ten examples, and Nos. 10–12, without groove and shoulder, by nine. The sides are often undecorated, but when present the decoration consists of horizontal grooves (No. 6), instead of the familiar lattice pattern. The vessels are hand-made, though the rim and upper part of the body has been finished on the wheel.

The clay is coarse, and the surface of the fragments is usually full of small cavities. In several cases, however, the surface is not pitted, but the clay contains a large proportion of white grit, which is also found in the body of the pitted fragments. Mr. W. McD. Mackey of Leeds, who has examined several pieces of this pottery, informs

us that the grit is limestone, which must have been mixed with the clay by the potters, and which, in the majority of cases, has been dissolved by the continued action of water containing carbonic acid. The grit was entirely removed from one fragment by soaking in a 10 % solution of hydrochloric acid.

The colour is dull black, or grey with a black surface, but the lower part of the body is usually light brown on the outside, as the result of firing.

Vase, or urn (1). One, light grey, gritty; rim missing, moulded base; wave pattern decoration on body; W 1.

Dishes, or plates (3). Plate V., Nos. 21 and 22. No. 21, two, diameter 7¼ inches, whitish, hard. No. 22, diameter 8 inches, whitish, grey surface.

Uncertain.

Bowls (3). One, type Plate IV., No. 4, cream. One, type Plate V., No. 18, grey. Plate V., No. 20, reddish, hard, gritty, black surface.

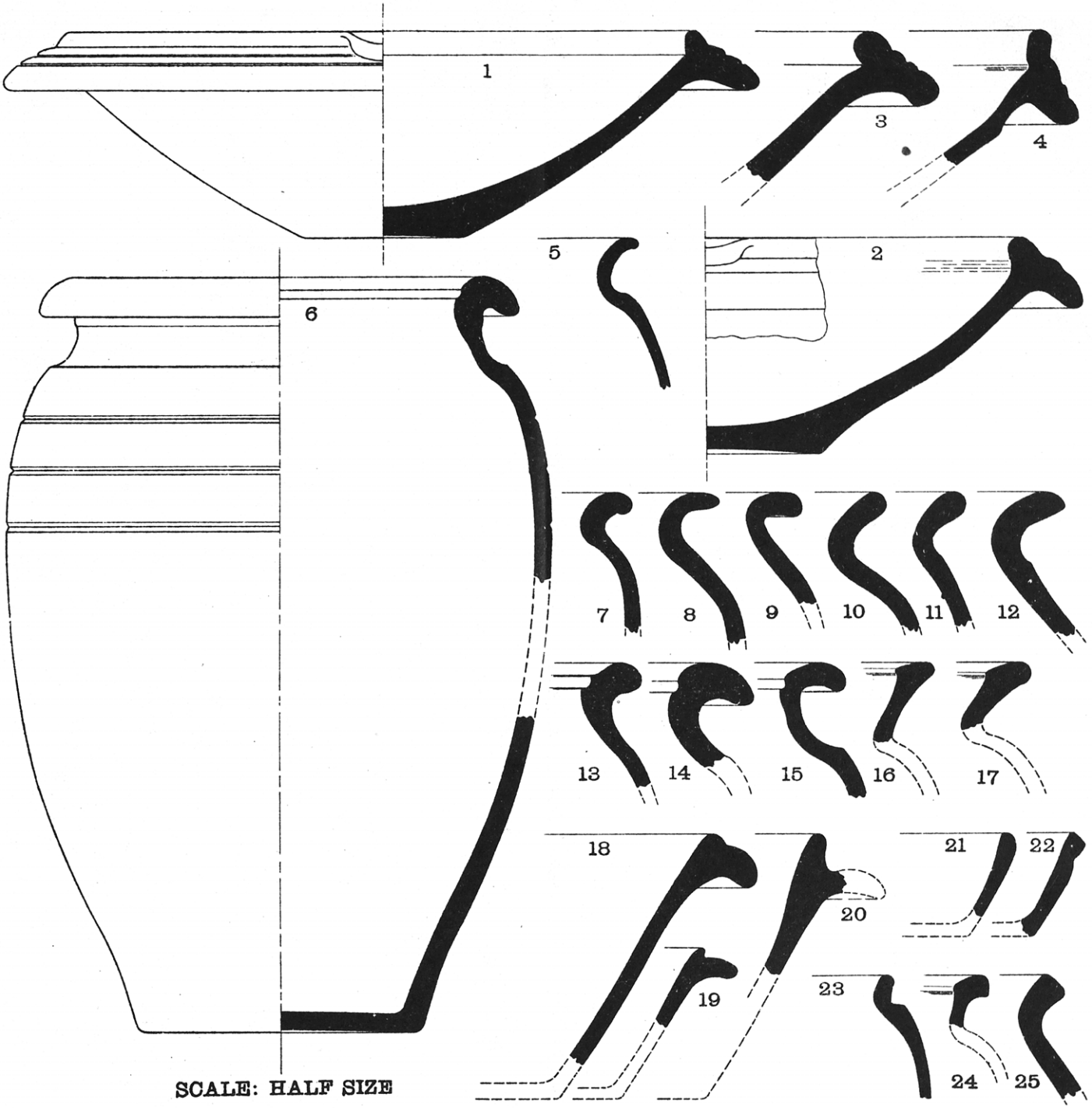
Mortaria (3). Two spouts, brown; first or second period type; outside north wall, east of gate. One base, brick-red; first or second.

Jars (11). Three, first period types; eight, second or third.

Cooking-pots (7). Four, type Plate IV., No. 32; Plate V., two type No. 6, one type No. 11.

Vases, or urns (3). Plate IV., Nos. 36–38. The raised bead below the neck indicates that they probably belong to the first period. No. 36, diameter 7 inches, grey, traces of blue surface wash; zigzag decoration and traces of red colouring on band between bead and hollow; cp. Newstead, Fig. 25, No. 15. No. 37, diameter 4½ inches, grey; moulded base. No. 38, diameter 5 inches, red, soft.

Bottles, or jugs, single-handled (2). Two bases, buff, with cream surface wash; moulded.



1909-10

PLATE V POTTERY SECTIONS

F.G.S.

tcwaas_002_1911_vol11_0026

Dishes, or plates (4). Three, type Plate III., No. 32. One, type Plate IV., No. 42, grey, soft, gritty.

Castor Ware.

Small vases (3). One base, white, light red surface; W 1. One rim, white, black surface; uncertain. One base, grey, black surface; uncertain.

Plain Samian.

Cups (2). One, type Drag. 27, diameter 4 inches; outside north wall, east of gate, at level of offset; probably early first period. One, type Drag. 33, first or second period, road.

Bowls (2). One, type Newstead, Plate XL., No. 21; cp. CORSTOPITUM (*Arch Ael.*, 3rd series, vol. v., p. 419); first or second, road. One, type Drag. 38; second or third, road.

Dishes, or plates (6). All type Drag. 31. One, first or second. Two, third, W 1 and road. Three, uncertain, south end.

Decorated Samian.

By Professor R. C. Bosanquet.

Plate VI.—1. Two fragments of a small 37 bowl, diameter 6½ inches. Glaze perished; where it survives, it is dark red. Narrow blank band. Egg-and-tassel border, the tassels ending in a star. Below this a zigzag line. Similar zigzags divide the field into panels. Where they meet the bordering zigzag above or below, the junction is covered by a trefoil ornament.

Design, in panels from the left. (1) Nude man runs l. Further l. another figure effaced. In field, a double reel ornament; (2) Below, smaller panels, one containing a full-face mask; this appears also on the smaller fragment; (3) Warrior looking l., wearing helmet and cuirass, and holding small round shield; r. arm raised as though lean-

ing on a spear (D. 106). Beside him another, in cuirass, with r. arm in the same position (D. 102). Below, ornament like a thunderbolt, formed of two units of a common wreath pattern placed back to back. Cp. D. 1178, a cruciform ornament formed of four such units, and Walters, Pl. xxxiv., 34; (4) Crouching archer, to r. (D. 169). Below him, pygmy walking to r. Lezoux, excellent crisply modelled ware.

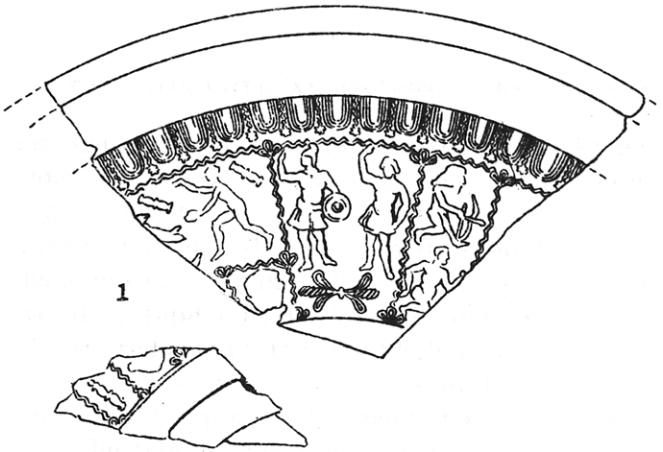
2.—Three fragments of a large 37 bowl, diameter 9¼ inches. Bright hard glaze. The blank band is unusually deep (1⅝ inches) and cuts off the upper edge of the egg-and-tassel border. Below this a zigzag line. The field is divided into panels by vertical zigzag lines; where one of these meets the horizontal zigzag, a rosette covers the junction.

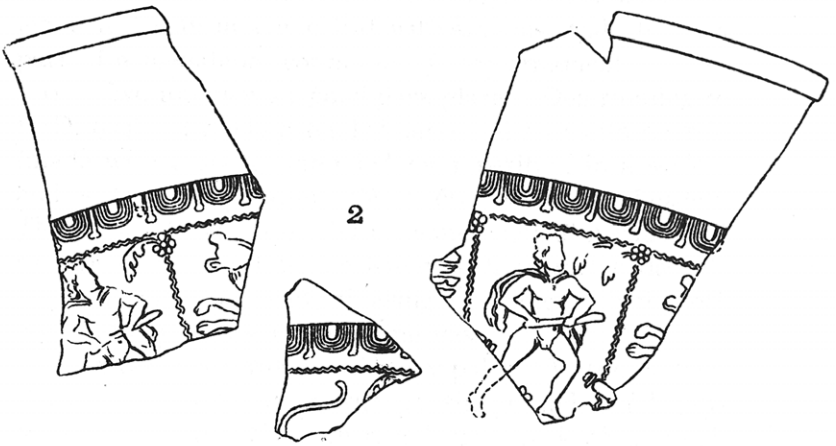
Design, in panels. (1) Warrior, with short cloak fastened about neck and thrown back, moves to r. and draws sword from sheath (like D. 111 but smaller). Two examples of this panel are preserved. In one there are seen two pendent acanthus-leaves in upper r. corner, in the other one such leaf. A bead ornament lies across the vertical zigzag on either side; (2) Lioness? charging to l. and looking back to r. Incomplete. Cp. D. 793; (3) Lion? charging to r. Lezoux.

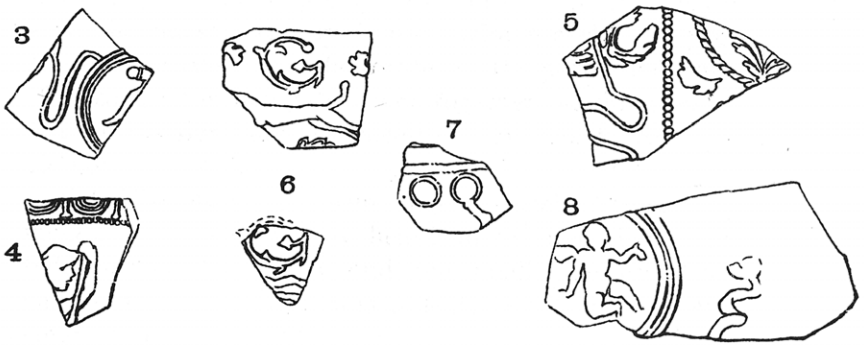
The lioness (D. 793) is used by Doeccus (Walters, *Catalogue of Roman Pottery in Brit. Mus.*, M. 1031) and Cinnamus (*ib.* M. 1551): and, somewhat earlier, by Janus of Heiligenberg and Rheinzabern (Knorr, *Rottenburg*, Taf. xii., 3, 5 and 10). Another potter of this German district, Reginus, used the warrior (D. 111, Knorr, *Rottenburg*, xvi., 10 and 11). Knorr thinks they began work early in the reign of Trajan, Barthel (*O.R.L. Zugmantel*, p. 124) would make them later. They probably borrowed these types from Lezoux.

3.—Fragment of different clay and glaze. The clay is paler even than that of No. 8, the glaze poor and dull.

PLATE VI







1909-10 **DECORATED SAMIAN**

SCALE: HALF SIZE

Of the design part of a medallion containing a reel-ornament, and a sinuous stalk issuing from it, are alone preserved. German ?

4.—Small fragment, showing a male head to r. and raised hand grasping a staff. The complete figure (D. 3) is identified as Jupiter by Déchelette, who explains an object in the right hand as a thunderbolt, and suggests that the face only seems to be beardless owing to defective moulding. But the present fragment shows no trace of a beard. The type is known at Lezoux.

5.—Fragment showing a beaded vertical division. To left is a deeply indented leaf with sinuous stalk, to right part of a medallion, containing a leaf ornament.

6.—Two fragments ; good dark glaze. Dog running to l. (D. 934). In field a tendril curved almost into a circle (made with a stamp intended for repetition in a scroll), and a leaf like Walters, M. 1166. Probably Lezoux. This type of dog is used by Cinnamus and Paternus, but the fine style would be consistent with an earlier date.

7.—A third fragment, showing two rings, which does not seem to belong to the same vase.

8.—Much worn fragment. Clay paler. Within a medallion Cupid, full-face, r. knee on the ground, hands outspread (D. 264). Next on r. a figure much obliterated, resembling D. 411, Pan playing his pipes. Next, a figure which is almost certainly Triton wielding a club (D. 16). These three types were favourites of the potter Paternus of Lezoux ; the first two occur together on three bowls bearing his signature (Déchelette, i., p. 290, ff. Nos. 65, 66, 90).

Not Illustrated.—9. Rim of a 37 bowl, diameter 8½ inches, with exceptionally heavy upper moulding. The bold curving line below and the small ring ornament suggest that the design was a leafy scroll such as was common in the Antonine age.

Only Nos. 1 and 2 were found in stratified deposit.

These, I am told, were " in first period débris," by which I understand débris which had accumulated during the first occupation and before the making of the second floor. As the greater part of the two vases in question was missing, it is not necessary to suppose that they were in use immediately before the first destruction or reconstruction of the milecastle. No. 1 resembles the pottery of Trajan's time, but might no doubt have been made in that of Hadrian. No. 2 is probably Hadrianic. Both belong to vases which had been rivetted and might have been in use for a number of years. The finding of them at this level is consistent with the assumption that the milecastle was occupied under Hadrian.

Three other pieces " were found *above* the *second* floor, but they are very small and may have been moved." These are Nos. 6, 7 and 9. It is difficult to judge from such small pieces, but they do not seem to be later in character than the Antonine pottery of the Scottish forts. If any inference could be drawn from their position, it would be that the second floor was constructed during or very soon after the Antonine age.

The Periods of Occupation.

In making this excavation, special attention has been directed to the possibility of any previous occupation of the site associated with defences similar in construction to the turf rampart west of AMBOGLANNA, and to the evidence of the erection of the milecastle and Great Wall in stone.

There was no evidence of outer walls earlier than those of stone, nor of an occupation prior to the building of the stone walls.

Had there been an earlier occupation, remains such as pottery, ashes, etc., ought certainly to have been found in the large amount of levelling material below the lowest floors. In the absence of such evidence, it must be con-

cluded that the lowest floor was that of the earliest occupation of the site.

It may be urged that as the paths, the road between them, and the inside of the buildings furnished most of the dateable "finds" of the first period, they may have been the work of Hadrian, and that the original outer walls have been removed.

The evidence of the lowest road surface, which is continuous in the roadway and in the north gate, over the footings of which it passes, shows that the gate must be of the same date as the buildings and the road.

It has recently been suggested that the gates of milecastles might have been built of stone in conjunction with outer walls and a Great Wall of turf. This would imply that the date of the gateway need not affect the question of the date of the outer walls.

This question is decided by the position and level of the structures in the north-west and north-east corners. The lowest oven and the lowest step could only have been used in conjunction with the lowest road surface and the three must therefore have been contemporaneous.

Portions of the oven and the steps are, however, vertically above the footing-course, and could not have been constructed until the outer walls were made, proving that the outer walls were built at the same time as the internal buildings; and the lowest floors, the oven and the steps added as soon as the walls were completed.

The question of date can only be decided by the finds associated with the first occupation. Judged by the present knowledge of Roman sites in Britain, the pottery, coins and *fibulae* found below the second floor, belong uniformly to the second century. The presence of the "rustic" ware and the bowls (Plate III., Nos. 1–6), hitherto looked upon as of late first century date, as well as the practically unworn coins of Trajan, all point strongly to the conclusion that the building of the mile-

castle and Great Wall took place about 120 A.D., while the three burnt coins of Faustina the Elder suggest that the great invasion of 180 A.D. was the occasion of the first destruction.

History fails to assist in fixing the date of the second destruction.

The coin of Claudius Gothicus indicates that the date was subsequent to 270 A.D., while the coins from the third floor show that the third and last occupation had commenced before 300 A.D. The view that the second destruction occurred not long after 270 A.D. is confirmed by the composition of numerous hoards of coins found throughout the country, of which two at least are from the line of the Wall.

In the hoard of over 5,000 coins of the mid-third century, found in 1878 between CONDERCUM and VINDOBALA, the latest coins were of Aurelian, 270–275 A.D. (*Arch. Ael.*, 2nd series, vol. viii., p. 256), while in the hoard of 120, found in the " villa " at AESICA in 1897, the earliest coin was one of Valerian and the latest, one of Quintillus, 270 A.D. (*Arch. Ael.*, 2nd series, vol. xxiv., p. 63).

The evidence of the third period coins has led Mr. Craster to suggest that the final abandonment of the milecastle took place as early as 330 A.D.

It has been taken for granted hitherto, that the milecastles were in use until the close of the Roman occupation. Had this been the case, remains of the re-occupation following the destruction in the early years of Valentinian I., 364–369 A.D., which are found in the forts, ought to appear in the milecastles also. The absence of these remains at Poltross Burn, and at Winshields, lends some support to Mr. Craster's suggestion.

It is our pleasing duty to record the kind help received in the carrying-out of the work.

To Mr. T. H. Hodgson, F.S.A., President of this Society,

and Mrs. Hodgson our warmest thanks are due for their kind assistance in making the requisite arrangements with property owners, as well as for their valuable personal service and advice during some weeks' residence at Gilsland, while the excavations were in progress.

The late Earl of Carlisle very readily gave permission for the excavations here recorded, as well as for others not included in the present report, and his tenants have loyally carried out his wishes by affording us all the help in their power. The difficulty which arose in examining the north gate and wall was overcome by the kind assistance of Mr. C. A. Harrison, Chief Engineer of the North Eastern Railway Company.

To Professor Bosanquet and Mr. H. H. E. Craster, M.A., we are indebted for valuable notes on the Samian pottery and coins printed herewith ; to Mr. H. A. Auden, M.Sc., D.Sc., for treating the iron objects ; to Mr. W. McD. Mackey for chemical examination of the coarse pottery, and to the Rev. W. G. Bird, vicar of Gilsland, for taking charge of numerous visitors and for other kind assistance.

From Mr. Collingwood, F.S.A., Mr. R. Blair, F.S.A., Mr. W. Parker Brewis, F.S.A., Mr. J. Curle, F.S.A., Dr. Haverfield, V.P.S.A., and Mr. T. May, F.S.A.Scot., we have received, during the course of the work, much valuable advice and encouragement.

Towards the expenses of the work, we are indebted to this Society for a grant of £10, and to Mr. D. Garnett, Mr. M. Mackey and Mr. W. Maudlen (the late), for kind donations.