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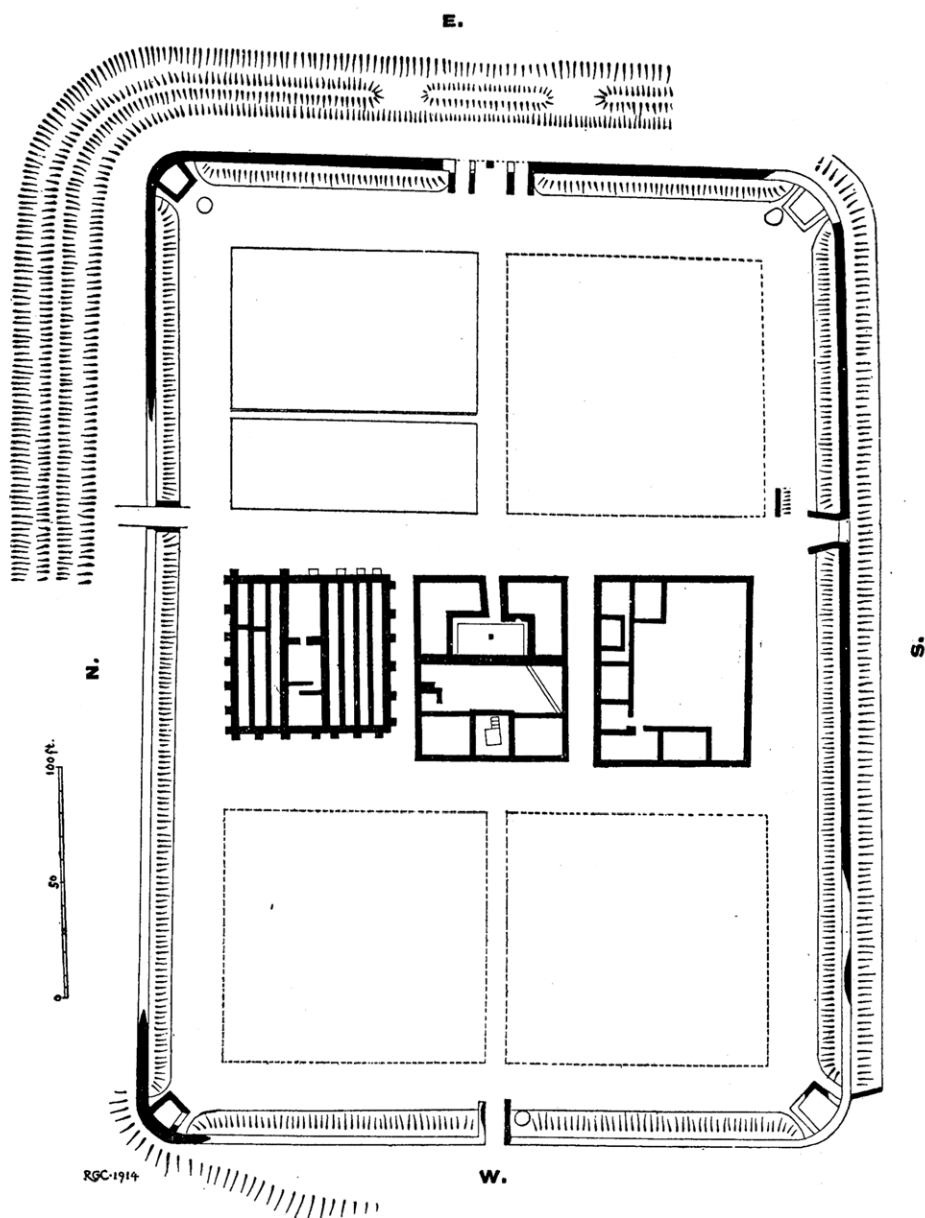


FIG. I.—GENERAL PLAN OF AMBLESIDE FORT.

ART. I.—*The Exploration of the Roman Fort at Ambleside: Report on the second year's Work (1914).* By R. G. COLLINGWOOD, M.A.

THE work done in 1914 covered 14 weeks in all. In the spring, digging began on March 23. The present writer directed for a week, and was followed by Mr. L. B. Freeston, who supervised for a fortnight, when digging came to an end. It recommenced on July 6th and continued till September 19th. During this period Messrs. L. B. Freeston and N. C. Dibben were in charge for a fortnight (August 17th to 30th); the rest of the work was directed by the writer, with help from Professor Haverfield, who spent over a fortnight at the site, and Mr. Wordsworth, who supervised much of the filling-in. Eight men were employed beside the foreman, Mr. Richard Banks, whose energy and enthusiasm have again contributed greatly to the success of the work. The expense was met as before by special subscriptions to the Research Fund, supplemented by a charge for admission and the sale of reports.

The Easter season was spent in excavating the rampart, gates and towers, so far as these had been untouched in 1913; in July we began at once on the three central buildings, the *principia*, granary and commandant's house. The two former were completely explored; of the commandant's house about two-thirds was uncovered. A few trial trenches were also put through the ground N. of the *via praetoria* and E. of the *via principalis*, that is to say the northern half of the *praetentura*. These sites will be described in order. Those excavated by Mr. Freeston are described from rough notes sent by him to myself during his work, and from my own subsequent observations; having joined the Army in September, he

was unable to present any kind of report, and the account given below of his work on the corner towers and the commandant's house is therefore inevitably slight. It is, however, to be relied upon as far as it goes.

I.—DIMENSIONS.

The following notes may now be added to the description of the situation of the fort, given in the 1913 report (these *Transactions*, N.S., xiv., pp. 435-6). The fort lies almost square to the points of the compass, its chief gate facing only a few degrees south of due east. It measures, including ramparts, 426 feet on the north and 418 on the south, by 307 on the west and 298 on the east (these measurements are taken to the nearest foot). Its average length is 422, and the average breadth 302 feet. This gives it an area of 2.75 acres. It is therefore distinctly larger than Hardknot (2.4) and Melandra (2.2) and slightly larger than Aesica (2.6) or Gellygaer (2.6), but these are all of a comparatively square shape, whereas the higher ratio of length to breadth at Ambleside, no doubt due to the necessity of getting it into the narrow space between the marsh and the rocks, makes it more like the larger forts of Housesteads, Birrens, etc.

Its north and west sides are longer than the south and east; and consequently, though the S.W. corner is approximately a right angle, the N.W. corner is 89° and the N.E. 88° , while the S.E. is over 93° . Further, the north and south walls are bent at their respective gateways to the extent of about a degree each, and the southern gateway is five feet nearer the east end than the northern. Irregularities of this kind are practically universal in Roman forts.

2.—THE RAMPART.

The rampart has now been traced for its whole length. It is a wall averaging about 4 feet in thickness and built of local stone. The outer face is of rough ashlar work;

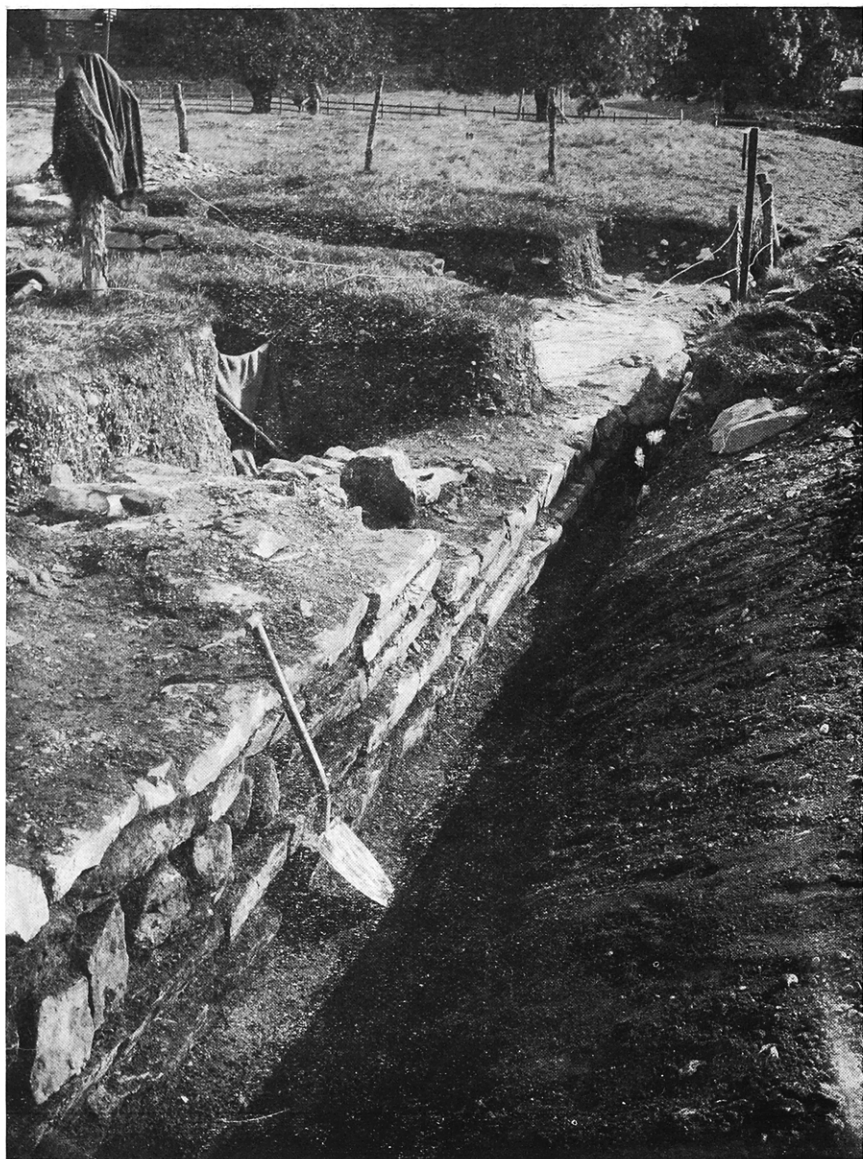


FIG. 2.—S. RAMPART WITH THRESHOLD OF GATE, LOOKING EAST.

TO FACE P. 5.

the specimen figured in last year's report is a fair sample of the whole. Fig. 2 shows a portion, immediately west of the south gate, which has been left open for the inspection of visitors. The inner side of the wall shows practically no face at all (see last year's report, fig. 4). It was hidden by a bank of stiff light-coloured (grey or yellow) clay. Such a bank was found at Melandra, and the whole subject is discussed in "Melandra Castle," pp. 43-53, in terms applicable almost without exception to Ambleside. "The general inference is that the fort was defended by a wall a little over 5 feet thick, which served as a revetment to a clay bank which ran back some 15 feet further" (p. 45). Mr. Bruton goes on to examine the parallel cases of Gellygaer (where, however, the back of the bank, as well as the front, is supported by a wall) and Saalburg. Further parallels can now be found in Newstead and the Haltwhistle Burn fort; and Mr. Dymond's observation that at Hardknot there was practically no inner face to the rampart may lead one to suspect that the same plan was adopted there.

In the case of the Melandra defences there seems to have been a doubt whether the stones which were found between the ashlar facing of the rampart and the clay bank "once formed a roughly coursed rubble backing, making with the ashlar a wall 5 feet thick" (p. 48), or whether there was no such solid mass of rubble masonry behind the facing. Mr. Bruton decides in favour of the former hypothesis, chiefly on account of the necessity of a strong wall to support the pressure of the clay bank. At Ambleside the doubt does not arise. In places, it is true, the outer face alone remains; but west of the south gate the whole thickness of the coursed rubble wall was found to be solidly cemented together with hard mortar. As often happens in Roman work, the quality of this mortar varies greatly in different places, and it has here and there quite disappeared.

Against the rough inner side of the wall, the bank terminates in a vertical face (for parallel, see again "Melandra Castle," p. 45, and Professor Conway's note, p. 53), from which it may perhaps be inferred that wall and bank were built simultaneously. There is no sign that a pre-existing clay rampart was cut vertical to receive a later wall, and the wall is undoubtedly built with reference to the clay. The corner towers seem to have been bonded into and therefore contemporary with the stone rampart; and since their existing walls date back to Hadrian, we may take it as certain that both the clay and stone ramparts date from the same period. The defences therefore belong to the composite type intermediate between the earth rampart and the stone rampart; but whether this typological development corresponds at all closely to a chronological sequence, so as to assist in dating the remains, is very doubtful.

The clay bank was terminated at its inner or free edge by a line of flags set sloping up against it at an angle of about 60° . These took the place of the inner retaining-wall at Gellygaer, and protected the clay against water running in the gutter between the bank and the road which lay between it and the internal buildings. They were only found at the north gate, but the inner edge of the bank was not examined in many places.

In the case of the Haltwhistle Burn fort Messrs. Gibson and Simpson attempt to deduce the height of the wall from the width of the bank, which is 8 feet. Assuming that a clay bank would stand safely at 45 degrees, its height would be equal to its width at the foot. A rampart-walk of about 3 feet 6 inches must be allowed for. One foot 6 inches of this is obtained by reducing the stone wall from 3 feet to a parapet 1 foot 6 inches thick, and the remaining 2 feet by truncating the top of the clay bank to the extent of 2 feet. This leaves the walk 6 feet above ground, and the top of the wall, allowing for a 4

foot parapet, 10 feet high (*Arch. Ael.*, ser. III., vol. v., p. 233). The same argument, which at Haltwhistle Burn finds some support in other details, may be applied to the rampart at Ambleside. Here the clay bank is 10 feet wide and the wall 4 feet thick, or rather less in places (1913 Report, p. 442), ignoring its greater thickness at the corner towers where the bank was interrupted. If the parapet was about 4 feet high and $1\frac{1}{2}$ to 2 feet thick, a rampart-walk 4 feet wide would come 8 feet above the ground and the stone wall would be altogether 12 feet high. This may be taken as an outside estimate, since it depends on the slope of the bank, which can hardly have exceeded 45° and may have been less. The angle of the flagstones at the foot of the bank is of course no guide to its general slope.

No good face was found between the E. gate and the S.E. corner; the wall was here traced as a mass of disturbed stone. The S.E. corner has been destroyed beyond recognition by previous excavation, perhaps in 1846 when it is on record that an inscribed stone now lost was found in this corner of the fort (1913 Report, p. 437: *Arch. Journal*, ii., p. 395). Before that time this corner was in an excellent state of preservation; the E. end of the S. wall stands 6 courses high in good masonry to within 5 feet of where the S. corner of the tower must have been, but ends abruptly where it has been cut through by the excavators.

The S. rampart as a whole is well preserved. From this corner to the S. gate it averages 3 or 4 courses high. Beyond the gate comes the piece referred to above, of 5 to 7 courses; beyond this it gradually falls off again till, 130 feet from the S.W. corner, it disappears entirely and only a few isolated stones remain. Here, however, as in other places where the wall has been removed, its exact situation can be seen by the vertical outer face of the clay bank.

Along the outside of the south rampart a large deposit of cobbles and waterworn gravel was found. It is about 20 feet in width and slopes downwards from the wall-face towards the lake. Its outer edge is retained by a line of large cobbles, and its inner edge carefully fitted against the rampart by the building-up of a face in contact with that of the wall. Its artificial character is also shown by the quantity of potsherds it contains. These occur not merely on the surface but all through its thickness, and this fact, together with their variety as regards type and date, proves that it was laid down not all at once but from time to time, in small quantities, as occasion demanded. On the east, it continued some little way round the curve of the corner, so far as the disturbance mentioned above permitted us to observe its course; westward it was bounded just before reaching the corner by a line of cobbles pointing approximately S.S.E. There seems to be no doubt that this gravel was intended to protect the wall against the force of waves during winter floods and storms. As we mentioned last year, there is no reason to believe that the lake-level has altered either way since the Roman period; and floods nowadays come up to the foot of the well-marked bank which shows the line of the south rampart. When the wind blows direct up the long upper reach of Windermere, the waves here are often very violent and would do great damage to the exposed face of the rampart. An artificial foreshore of stone and gravel, like that which the National Trust has recently made at the water's edge, near the ancient wall in the lake, would completely defend the masonry against such damage. The angle of the little retaining-wall which terminates the deposit on the west is an additional proof of this view; it is so arranged that as soon as the wind reaches a quarter in which it could raise a dangerous sea, the foreshore would receive the full force of the waves; whenever the wind is west of this point the waves are inconsiderable.

Of the west rampart hardly a trace is visible till it approaches quite close to the N.W. tower. Here we found a section of well-preserved masonry, though just at the corner the outer face has disappeared, having no doubt rushed down the steep though very short slope into the old river-bed. East of this again it gradually disappears, till towards the north gate the clay bank affords the only evidence of its position. From the north gate to the east it was traced in 1913.

3.—THE CORNER TOWERS.

In 1913 the *N.E. tower* was excavated, and proved to contain 3 distinct floor-levels (1913 Report, pp. 443-4). Whether a fourth was to be distinguished between the lowest and middle floors we were unable definitely to say. In the spring of 1914 Mr. Freeston examined the remaining towers, and the following account is put together from his notes.

The *S.E. tower* was not to be found at all. It had evidently been destroyed completely, together with the rampart adjacent (above, p. 7). Mr. Freeston thought he detected a trace of its N.E. wall in some foundations lying deep down where it ought to have been. Close at hand, near the probable site of its door, he found an oven-base of burnt and reddened stones, solidly constructed and at a level which seems to me to show that it belonged to a late period, IV. or perhaps III.

The *S.W. turret* had been much ruined, but its eastern angle was intact, and this proved to contain three floors. Floor I. (counting upwards as usual) contained much window-glass, a buff mortarium of the first half of the second century, a "pie-dish," and some Samian, probably all of the early second century.

Floor II. produced some sheet lead $\frac{1}{16}$ " thick, some small nails and two large ones $4\frac{1}{2}$ " long, an *olla* with indented rim, and Samian of shapes 27, 33. Nothing very definitely datable.

Floor III. produced a piece of German Samian (Heiligenberg ; No. 13, p. 54, *inf.*) ; fragments of Dr. 35 and 36, with barbotine on lip ; a large *olla* ; a piece of a buff *mortarium* with white grit ; two tiles with the usual cross-broaching, and corroded fragments—probably of a knife in a wooden sheath. It seems very difficult to place this group as late as its position in the stratification would appear to demand. But it represents only a very small corner of the original floor and cannot be taken as representative.

The *N.W. tower* was better preserved. Two of its free walls were intact, and a portion of the third was standing. It showed four very clearly stratified floors. Of these I. (the lowest) contained six fragments of Samian. Four belonged to a shallow vessel of the early type known as Dr. 18/31, one seemed to come from a Dr. 29, and the other from a figured Dr. 37. There was also the base of an early-looking *mortarium*, red with white grit ; several iron nails and an eye-bolt. This group certainly cannot be later than the first half of the second century.

Floor II. contained little datable matter. There was a large lump of lime, possibly intended for mortar and not used ; parts of a soft buff jar ; a cooking-pot, probably of the late third century ; a black beaker resembling late second-century types, and the rim of a late Dr. 31. This group then seems roughly to cover the third century.

Floor III. produced some late figured Samian, Lezoux and German, an L-shaped angle-nail probably for fastening tiles to a wall, a black vessel of the undatable "pie-dish" type, and the spout of a roll-rim *mortarium*. The last item suggests the second or early third century.

Though Mr. Freeston notes four floors in this turret, of which II. and IV. are burnt (1913 Report, p. 465), there are only three bags of objects belonging to it, from which I gather that floor IV. produced no finds.

It will be observed that the finds in these towers do not date the successive floors with any clearness.



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FIG. 3.—PIERS OF EAST GATE, LOOKING WEST.

4.—THE GATES.

At the *East Gate* in 1913 a block of freestone masonry, about 5 by 2 feet, consisting of three large stones on a flag foundation, was discovered at the very end of the season (1913 Report, p. 446 and Fig. 11). We were unable then to follow it up, and supposed it to be the *spina* of the gateway. The general survey in 1914 however showed that the central point of the wall lay some 5 feet south of it, and accordingly the latter point was examined. Here a single square stone was found, much worn with the tread of feet and bearing marks of the sharpening of knives and pointed implements. This was evidently the stop-block of a gateway whose north jamb was formed by the supposed *spina*. Of the corresponding south jamb we found the flag foundations; so that the gate is now seen to have been a single passage of the usual width of about 10 feet, with a double door opening inwards and shutting against a stop-block. All thresholds and pivot-stones have been removed, and the stop-block seems also to have been disturbed, though not very much; the reconstruction planned in fig. 4 assumes it to be about 4 inches south

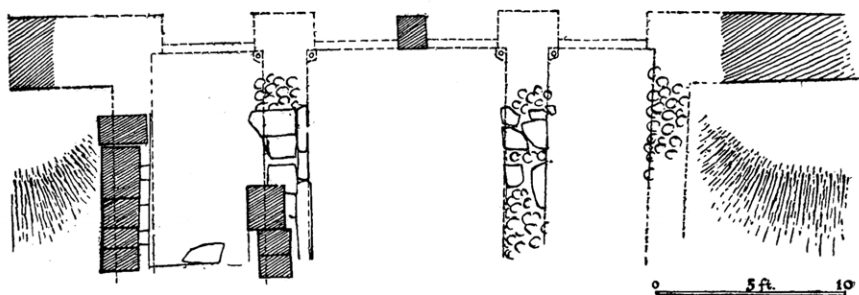


FIG. 4.—EAST GATE.

of its proper place, as otherwise, if it is central to the gateway, the flag foundations do not truly indicate the site of the south jamb.

To the north of this gateway another passage, about 6 feet wide, was found, the north side of which was formed by another block of freestone masonry. Traces of a similar passage were found on the south, where however even the flag foundations of the jamb have been removed, leaving only clay and cobbles.

Three interpretations of these " passages " are possible.

(a) They may be guard-chambers. As against this view, no rampart was found to form their eastern wall, and no west wall at all was discovered, though some flagstones, perhaps a foundation, ran across the west end of the northern one. A more serious objection was the entire absence of any sort of finds, flooring or sign of occupation, and though stone-robbing may well have destroyed all stratification, it would hardly account for the absence of pottery, bones, charcoal, etc.

(b) They might be the remains of solid masses of masonry such as flanked the gates of Melandra and also, as Mr. Bruton kindly tells me, at Elslack. But it seems clear that at Ambleside our two blocks of ashlar are not the faces of a solid mass of rubble, since no remains whatever of the rubble were forthcoming, and no foundations underlay the open space where, on this supposition, the rubble core should have been. Moreover the ashlar, which at Melandra is finished on one face only (see plan of east gate, " Melandra Castle," p. 38) is here equally finished on both faces.

(c) It remains to suggest that they were foot-passages on each side of a central road, forming a triple gateway instead of the usual symmetrical double one. I do not know of any parallel to this arrangement, except in towns—e.g., Lincoln ; where the gates had a single opening, about 17 feet wide flanked by foot-passages 5 to 7 feet wide on either side. One of these gates is still standing, and is known as the Newport Arch ; one of its foot-passages has been destroyed. The Balkerne Gate

at Colchester had similar foot-passages, but its central opening was double. These sites however belong to a class whose features are not at all parallel to those of small forts like Ambleside, and it seems unsafe to argue from them to possibilities here. The evidence of analogy is overwhelmingly in favour of the supposition that these spaces were guard-chambers, and my only reason for not restoring them as such in fig. 4 is that, as above stated, what little evidence there is tends against that view. On the other hand, the whole gateway is so disturbed that there is not enough evidence to prove anything definitely.

Immediately beyond the outer walls of these passages or chambers the clay bank recommenced. The whole gateway is much robbed of stone; of the two southern piers not a stone remains. The northernmost pier has lost nearly half of even its lowest course, and of the one next it only three blocks remain, of which one bears a lewis-hole. For a view of these two piers see fig. 3. All the stones have been shifted from their original place, possibly by the fall of the arch, if (as is most probable) the gateway was vaulted. The shift, as may be seen from fig. 4, is too uniform to be due to stone-robbing.

The *south gate* (fig. 5) has been less disturbed. Its

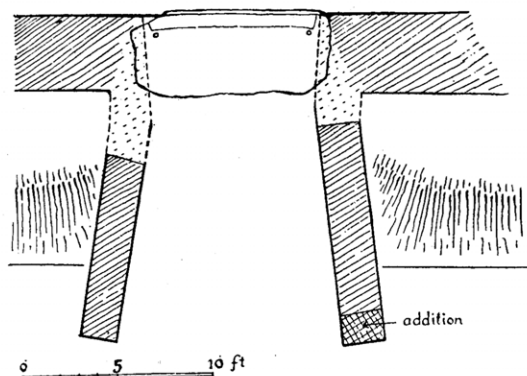


FIG. 5.—SOUTH GATE.

remains consist of two flanking walls of local stone, converging from 12 feet apart on the north to $8\frac{1}{2}$ on the south, and abutting on the rampart where it is interrupted by the threshold. This is made of a single stone slab $10\frac{1}{2}$ feet by $4\frac{1}{2}$, and about a foot thick. Its upper surface is worked flat, with a raised moulding along its outer or southern edge to act as a stop for the double gates, which worked in pivot-holes sunk in the ends of the same stone. Door-sills made of a single stone are often on a considerable scale, as for instance specimens at Caerwent about 7 feet long; but I do not recollect another of this size. The stone is local and may have come from Loughrigg immediately across the Rothay, or even from the outcrops of rock just north of the fort itself; but it is hard to say what purpose was served by its use, which must in any case have involved much labour. No trace whatever of wear is visible on the stone, and no road led out of the gate; this could hardly be otherwise, considering that a marsh, during high lakes covered with water, lay immediately outside it. There were no guard-chambers; the clay bank abutted directly on the flanking walls.

The *via principalis* was examined inside the gate by Mr. Freeston. It was found to consist of hard gravel, which on being cut through revealed an earlier surface of larger stones nearly a foot below it. Mr. Freeston also found a section of an elongated depression, running E. and W., and having apparently the footing of a wall on its N. side. at a low level immediately E. of the *via principalis* at this point (marked on general plan, fig. 1). For the explanation of this, see below, on the Traces of an Earlier Fort, p. 34.

The *west gate* (dug by Mr. Freeston), like the south, was single, without stop-block, side passages or guard-chambers. It opened on the old bed of the Rothay, and can never have been used except as a water-gate, or to give access to a bridge. But a bridge would only lead

across the river to a considerable stretch of very marshy ground towards Brathay, and it seems improbable that a road would be taken along such a line. It was therefore not surprising to find that the gate was completely blocked by an ash-heap consisting of refuse from an oven built on the clay bank in the corner between the rampart and the southern flanking wall. This refuse-heap overlay (a) the original roadway ; (b) some large stones lying irregularly upon it. This shows that the heap does not date back to the earliest period of occupation, but began at a period when some throwing-down of the walls had already taken place. The evidence of the north-east tower proved that walls were ruined at the end of periods I. and III., *i.e.*, in 180, and about or not later than 330 A.D., if, as seems possible, those periods at Ambleside may be equated with the similarly numbered periods on Hadrian's Wall. Had the oven-deposit dated from the latter event only, the roadway would most probably have already been once reconstructed. This was not the case ; therefore it seems most likely that it dates from the beginning of Period II., *i.e.*, (on the above hypothesis) the occupation following the destruction in the reign of Commodus. Since the deposit was never cleared away or levelled over, it evidently continued in use through all subsequent periods of occupation ; and accordingly we may suggest that the gate was probably kept clear in Period I., even if it was never of any practical value, and that the oven and ash-heap belong to periods II. to IV.

The *north gate* (fig. 6) is in all respects like the west, and resembles the southern, except in the absence of any massive stone threshold. No signs of its having been closed up were found, and it was probably kept in repair as the readiest means of access to the dry ground north of the site. The flanking walls, in common with the neighbouring parts of the rampart, have been much robbed but the road is clearly visible, making its way out through

the clay backing of the rampart. This site also was dug by Mr. Freeston in April.

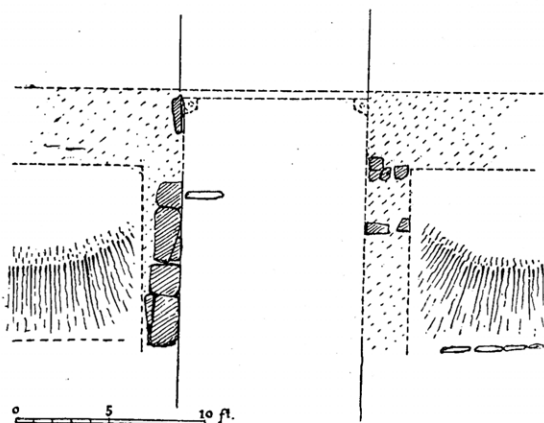


FIG. 6.—NORTH GATE.

Some attention was also given to the *ditch*. About half a dozen sections were cut through it, the largest opening being opposite the north gate. We wished to see whether the ditch was interrupted by a causeway, and found that on the contrary it was slightly deeper here than elsewhere, and must have been crossed by a bridge, of which we found possible evidence in the shape of charcoal. It was still double, the inner ditch being a little the deeper of the two. In the inner face or scarp of this inner ditch we found, here as in the section made through the north ditch last year, a considerable quantity of brushwood laid flat. It is possible that this brushwood originally formed some kind of entanglement similar to that found at Hofheim; but no definite evidence of such an arrangement is forthcoming. On the east, however, it is now fairly clear that the oak beams, which occur all along the east side of the fort, are the remains of a palisade of some kind planted in the bottom of the inner ditch, and beginning at the N.E. corner. We intended to examine the ditch further, with

a view to discovering whether the large rock N.W. of the fort lay outside it or was treated as an annexe ; but comparatively wet weather put a stop to work at low levels. The higher levels drain extremely well, and in spite of the general flatness of the site no trenches inside the fort have ever been flooded for long together.

5.—NOTE TO LAST YEAR'S REPORT.

Stakes in the Ditch :—I should have observed that precisely similar "stakes" had been described and figured by Dr. Norman and Mr. Reader in an article entitled "Further Discoveries relating to Roman London," in *Archaeologia*, vol. 63 (1911-12). A section of the Roman wall of London recently examined was built on a platform of squared timbers laid flat on ballast with piles of triangular section, having a groove running down one end, driven between them at intervals of about 3 feet. The description of the piles exactly tallies with those at the east gate at Ambleside, and the latter may have secured a platform of timbers on which the bridge over the ditch was built. If so, these timbers have with one exception disappeared. A construction like the London one was found in our district at Carlisle and is described by the late Chancellor Ferguson in these *Transactions*, O.S., xii., p. 344 ; see especially diagram v., p. 351.

6.—PRINCIPIA (PRAETORIUM). (fig. 7).

This building (68 feet by 75 feet) was approached by trenches across the *via principalis* at the beginning of the summer's work. Results were at first not satisfactory. Of the eastern half very little good masonry is left, and the walls are only traceable by masses of rubble. The entrance, a rammed gravel road nearly 5 feet wide, led us into the courtyard, which was also made of rammed gravel and had in its centre a single block of freestone 2 by 2 feet by about 5 inches thick (fig. 8). It was

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broken to pieces but not disturbed ; we secured it with a little cement and a piece of turf. South-west of this lay a stone with a square mortise-hole in it, evidently

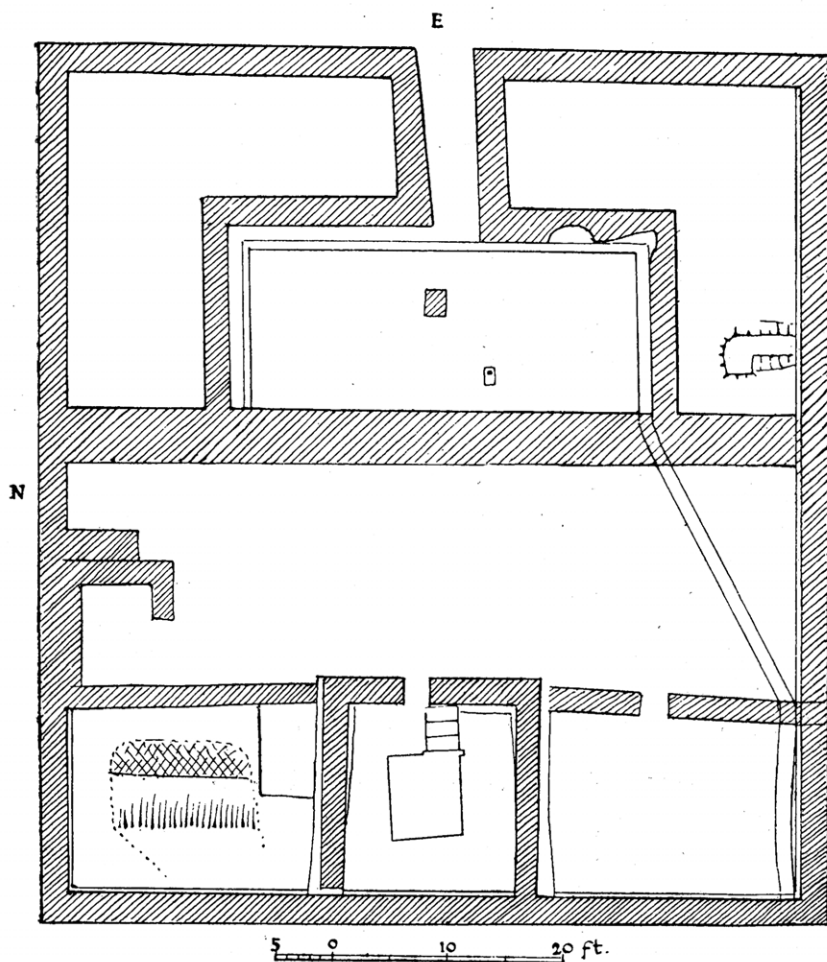


FIG. 7.—PRINCIPIA.

intended to carry a wooden post (fig. 10, p. 21). It cannot be in its right place, and most probably it has been swept two or three feet eastward by the



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FIG. 8.—COURTYARD OF PRINCIPIA, LOOKING SOUTH.

plough, having originally stood on the wall forming the western edge of the courtyard, and was one of a row of similar stones carrying the wooden posts of a penthouse roof. Such a penthouse roof doubtless ran round the other three sides of the courtyard, where a continuous wall was found, as at Hardknot and Melandra, taking the place of the portico with stone piers found *e.g.* at Chesters and Gellygaer. The presence of a penthouse on the inner side of the courtyard also, whose supports would correspond to the row of piers across the *principia* at Chesters, is at Melandra proved by the discovery of its posts *in situ*. It should be observed that the resemblance between the *principia* at Hardknot, Melandra and Ambleside is very close (fig. 9).

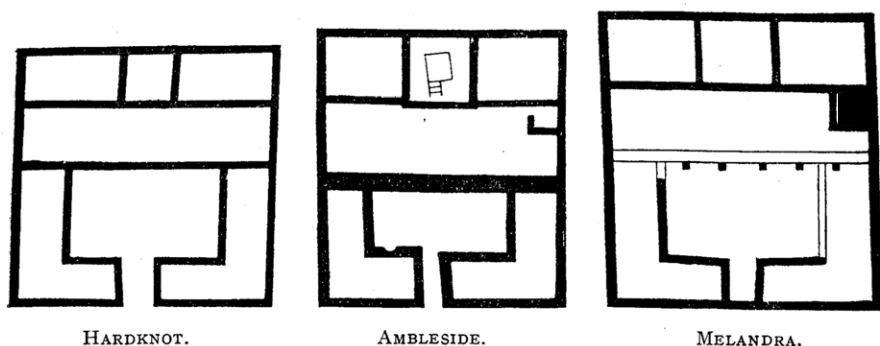


FIG. 9.—PRINCIPIA.

This resemblance in the case of Ambleside and Hardknot is increased by a curious feature in the courtyard of the former site, namely the projection of the south re-entrant angle of the gateway and the semicircular niche close by. We found no evidence as to the purpose of these features ; but in the courtyard at Hardknot, "on the left on entering, 3 feet 9 inches from the angle of the gateway, where the face of the court wall is gone, several bold quarry-stones projected like a pier about a yard from the wall".

(these *Transactions*, O.S., xii., p. 407). This projection was destroyed by the excavators, who thought that it might be the base of an altar of which they found fragments not far away. The fact that the wall had no face here shows that the "pier" was an integral part of the plan.

The whole of the courtyard was examined to find a well; though none was found, we discovered traces of a low-level occupation, two feet below the surface of the courtyard, in a heap of wood-ashes and some pottery. The gutter which surrounded three sides of the courtyard, made of slates on edge, ran down towards the S.W. corner, whence the water was carried under the floor of the cross-court diagonally to its S.W. corner by a drain similarly constructed of slates, and then westwards under the southern end of the room south of the *sacellum*, to the back of the *principia*.

South of the courtyard a small furnace was found. That it was used at high temperature and was not a mere oven is shown by the strongly burnt and flaked condition of the stones forming its horizontal vent-hole, which leads to the south wall of the *principia*. No remains were found in excavating it; but its ashes had been scattered broadcast over the floor and in the adjacent gutter of the courtyard.

The cross-court, *i.e.*, the space between the courtyard and the rooms at the back, was next uncovered. Whether these large halls were roofed or not is a well-known problem, and we were careful to look for evidence pointing one way or the other. We observed (*a*) that the floor was of clay, not gravel. This, if exposed to weather, would soon be nothing but mud; but we found no trace of the disturbance that would result from using it in such a state. On the contrary, the floor-surface was indistinguishable in character from that of the rooms in the commandant's house. (*b*) It was not supplied with any means of drain-

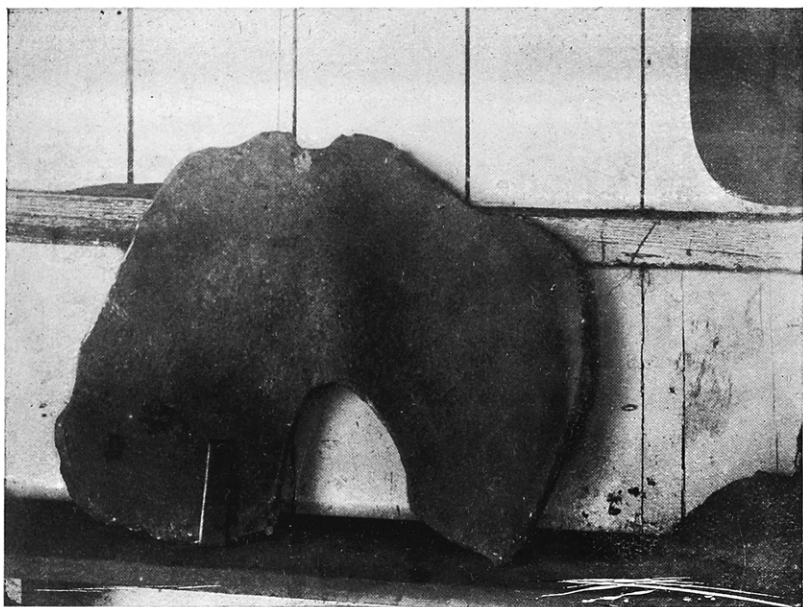


FIG. 11.—SHEET OF LEAD FROM SACELLUM (SIX-INCH RULE).



FIG. 10.—SOCKET STONE IN PRINCIPIA (SIX-INCH RULE.)

age, though it would have been easy to give it a gutter leading into the drain which already ran below its floor. (c) Large quantities of roofing-slate were found in it. This however may be due to the fall of the rooms at the back. That these buildings did fall eastward is clear from the presence of their stones on the floor of the cross-court, and it is difficult to judge what amount of roof-débris may be accounted for in this way.

In conclusion, whatever may have been the common practice, the evidence available at Ambleside tends to prove that the cross-court, like the walk round the other sides of the courtyard, was covered with a slate roof, carried on wooden posts. As mentioned above, one stone (fig. 10), cut as if to hold such a post was found; and the discovery of the posts themselves in the very similar site of Melandra can hardly be accounted for unless we suppose the cross-court to have been roofed in that case. This analogy seems to be an additional confirmation of the hypothesis that the Ambleside building was roofed. It is to be noticed however that the Melandra posts are far too heavy to fit the socket-stone found at Ambleside.

In the N.W. corner of the cross-court a small square building was discovered. Such chambers are not uncommon; e.g., at Melandra, Housesteads, Chesters (where it is not shewn on Bruce's plan, but is perfectly visible in the present state of the "Forum" and is marked on Mr. and Mrs. Hodgson's plan, *Proc. S.A. Newcastle*, ser. III., vol. ii., p. 293), etc. Their purpose is not known. They resemble in size and character the guard-rooms of a gateway, and may possibly have served as some kind of sentry-box at the door of the orderly-rooms. Against and outside the east wall of this building was a block of masonry which seems to have been a seat. Prof. Haverfield points out that this small building is not easy to fit into the conception of a roofed cross-court.

A line of stones projecting into the cross-court, from

the west side, rather S. of the middle, has been treated in restoration as a wall, but is not marked on the plan ; it is probably accidental.

At the back of the cross-court the usual row of offices was found. The parallel with Hardknot and Melandra holds good once more in the fact that there are only three such rooms instead of five. The south room yielded no remains of any importance except the drain running across its southern end.

In the central chamber, the so-called *sacellum*, we were unable to find anything resembling a floor-level. We dug to a depth of about 4 feet at its western end into loose stones and various kinds of sand, largely composed of masons' refuse ; nothing was found except quantities of window-glass and fragments of iron. Marks of fire were observed throughout. Proceeding eastward we came upon the back of a wall one stone thick, with its face to the east ; and on examination this proved to be the west wall of a cellar, 6 feet 6 inches by 6 feet 3 inches and about 4 feet deep, approached by three steps downwards from the *sacellum*, the stairhead lying immediately south of the door of the latter room. This was doubtless the *aerarium* or treasure-vault of the fort, a feature known at Chesters, Birrens, South Shields, etc. ; it commonly lies under one of the side chambers, but is always reached from the *sacellum*, of which it is in fact a kind of annexe. It is supposed to be a late introduction ; but there is no proof that this was the case at Ambleside, unless the fact that it is not square to the building be regarded as such. That it was not built quite at the end of the occupation is shown by the fact that the stone steps are a good deal worn ; twice or three times as much as cellar steps of similar stone and in daily use which I have examined, in a house 70 or 80 years old (see also below, on the date of the occupation, p. 38).

At the foot of the stairs had been a door strengthened



FIG. 12.—UNDERGROUND CHAMBER IN SACELLUM, LOOKING S.W.

TO FACE P. 22.



FIG. 13.—UNDERGROUND CHAMBER IN SACELLUM, LOOKING EAST.

TO FACE P. 23.

with iron bands and sliding in a vertical groove (fig. 13), in the wall on the left. On the right, the angle of the wall was truncated by a rebate, which possibly in conjunction with a wooden post received the other edge of the door. Fragments of the iron bands were the only remains forthcoming of the door itself. The cellar was floored with large and irregular, but carefully-fitted Brathay flags; these lay upon puddled clay, and more clay had been put down over them, especially in the corners of the vault, no doubt to stop the incoming water.

We found no remains whatever, except the above-mentioned iron fragments, on the floor of the cellar. On the steps, however, we found a large sheet of lead, about half an inch thick and weighing about a hundredweight and a half (fig. 11). It had been fused at the edges, and fused fragments were lying about the steps, the doorway of the *sacellum*, and the neighbouring parts of the cross-court. Its purpose cannot be definitely stated. That the *sacellum* was not roofed with lead is clear from the slate found in it; the discovery of the metal on the steps at first suggested that it was part of a treasure-chest; for which however lead would hardly be suitable, and moreover the broken state of the steps and the way in which the lead was bent round the edge of the step on which it lay showed that it had fallen from some little height. The only place where any sort of moulding could be seen looked as if it had been a shallow flat-bottomed basin about 3 feet in diameter; but the indications are very slight and may be misleading (fig. 11, right hand).

The flags of the cellar floor sloped downwards from the west to the centre, and a corresponding slope probably exists in the eastern half, though the flags here cannot be seen owing to the clay over them which we have not disturbed. This subsidence of the centre of the cellar is repeated in the north and south walls, both of which sag

downwards 6 or 8 inches in the middle. It is also found in the north wall of the *sacellum*, and in a less degree in the south.

The third or northernmost room in this range yielded a floor at a somewhat low level, viz., $2\frac{1}{2}$ to $3\frac{1}{2}$ feet below the modern surface of the ground. This floor, all over the southern half of the chamber, was of clay, about 4 inches thick, of a strong red colour, perhaps due to the presence of pounded brick. In the S.E. corner a large deposit of burnt wheat was found, which rested upon a thin layer of charcoal. This was evidently the remains of an oak bin 6 by 4 feet, but nothing more was found to indicate why corn had ever been kept here. The construction, subsequent to the main building, of a small granary in the *principia* at Balmuldy may perhaps be regarded as a parallel. There was no sign of a kiln, and no millstones; and of *mortaria* only a few fragments. The floor disappeared in the northern half of the room with an abruptness which almost proved the existence of a light wooden partition bisecting it. In the northern half no floor level at all could be traced with any certainty. This floor again showed the subsidence mentioned above. Its centre line was a foot below its east and west sides.

7.—GRANARY. (fig. 14).

The granary lies west of the *via principalis*, immediately within the north gate (*porta principalis sinistra*). It is the most solidly-constructed and well-preserved building hitherto discovered at Ambleside, but whereas the granaries of Roman forts are as a rule long narrow buildings, generally arranged in pairs with passages between them, the Ambleside granary is at first sight highly unusual in being square. It measures about 66 feet each way, and is buttressed all round. The buttresses on the front (east) of the building, however, have been more destroyed than the rest and cannot all be discovered.



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FIG. 15.—GRANARY, LOOKING EAST.

The best masonry is on the north side, and especially at the N.E. angle. The two buttresses at this corner (fig. 17) stand three courses high in good freestone ashlar with a bold chamfer. All the buttresses on the north side

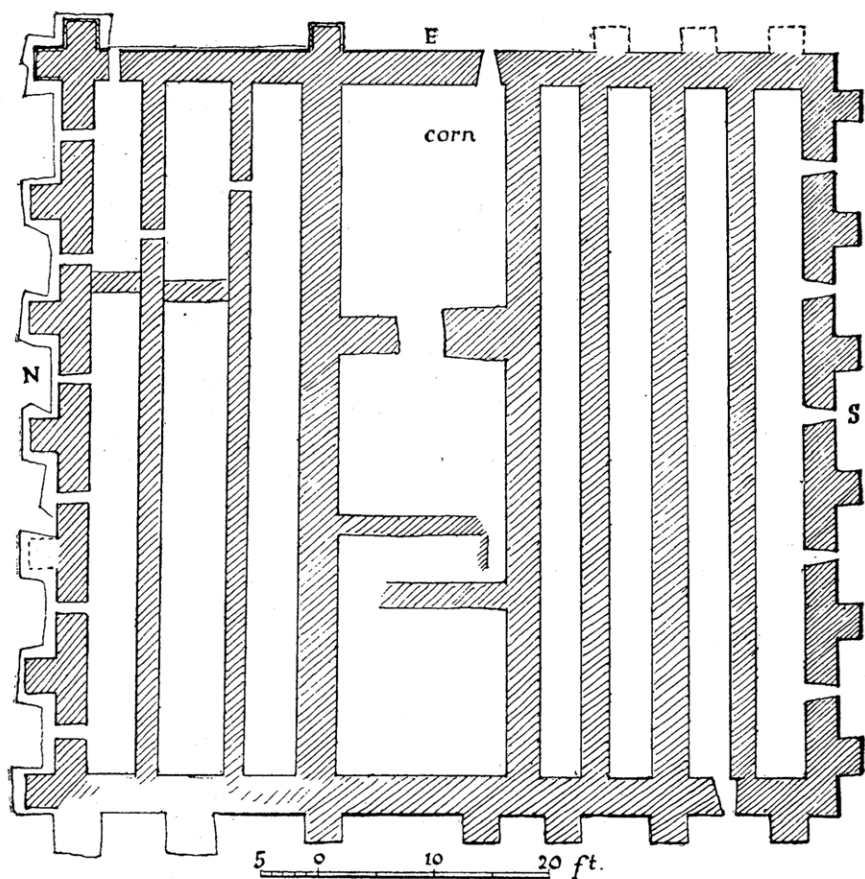


FIG. 14.—GRANARY.

have been constructed in this way, but at some period they have been much damaged and their outer faces for the most part completely removed and later rebuilt with rough local stone. We found no definite evidence as to the date

of this destruction, but it would suit the probable catastrophe at the end of Period I.

The walls of the granary are 3 feet thick. The foundations are made of large stones laid diagonally in clay ; on these is a course of flags, carefully fitted and forming a foundation of the kind locally known as " tabling." In a granary this would serve the further purposes of keeping the upper walls dry and preventing rats from coming up inside them. Above the flags the walling proper begins ; it is of Brathay stones, which are used just as the modern local mason uses them, and has evidently been built by men thoroughly experienced in the use of local building stones.

Between the buttresses are basement-windows to ventilate the space beneath the raised floor (Fig. 16). The jambs of those on the N. side are parallel, while those on the S. and E. are splayed inwards ; this, together with the absence of freestone in the buttresses on the south side, suggests that the building as it stands is not all of one date. Possibly the whole of the southern part has been destroyed and rebuilt, whereas the north wall and parts of the northern buttresses escaped complete ruin. There is no evidence of remodelling in the plan of the granary as a whole.

The building is divided internally by seven walls running E. and W. Counting from north to south, Nos. 1 and 2 are 2 feet thick, of very rough masonry and evidently never intended to stand high ; they are doubtless " dwarf walls " to support the floor. Each is pierced by a ventilation-hole near its eastern end, and the spaces between them and between No. 1 and the outer wall have been interrupted by party-walls subsequent to the rest of the building, whose purpose I do not know. No. 3 is 3 feet thick and constructed in the same way as the outer walls, as also is No. 4 ; and the space between these seems too large to have been spanned by the raised floor. It is



FIG. 16.—BUTTRESS AND VENTILATION WINDOW,
S.W. CORNER OF GRANARY.

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FIG. 17.—ASHLAR BUTTRESSES,
N.E. CORNER OF GRANARY.

however subdivided transversely near its eastern end by a similar thick wall with a doorway in the centre, and near its western by a pair of walls both apparently later than the main building and the inner later than the outer. Walls 5-7 are like 1 and 2.

It is evident that there were in effect two granaries side by side, with a large subdivided space, instead of a mere alley-way, between them. It remains to be seen what the object of this space was, and how the whole was roofed. In excavating the central space, we found in its eastern compartment very marked traces of burning and a good deal of charred wheat lying upon oak boards, which appeared to be the remains of a bin like that in the *principia*. This showed that corn had been kept there; indeed, it was the only place in the whole granary where we found any corn at all. In the central and western compartments, nothing except a confused mass of clay, containing charcoal and potsherds and many pieces of tile, was found. Professor Haverfield, who watched the whole of this piece of work, suggested that there had been here at one time kilns either for the purpose of drying corn or for baking, which had subsequently been pulled down. We were unable even to find a clear floor-level, except close to the corn-bin. This site was also remarkable for the discovery of a piece of first-century Samian ware found in the clay "filling" which overlay the undisturbed subsoil. It seemed to be associated in date not with the occupation of the granary but with an earlier period whose débris was used in the construction of that building (*v. inf.*, pp. 37, 38).

The most probable solution of the second question is that the intermediate walls 3 and 4 were carried up through the floor and served as side walls of the two granaries properly so called, the central space being unroofed. Several whole slates were found; they come from the neighbouring quarries of Woundale (Troutbeck) and were

shaped so as to lie on the roof with a corner pointing downwards (fig. 30, p. 58).

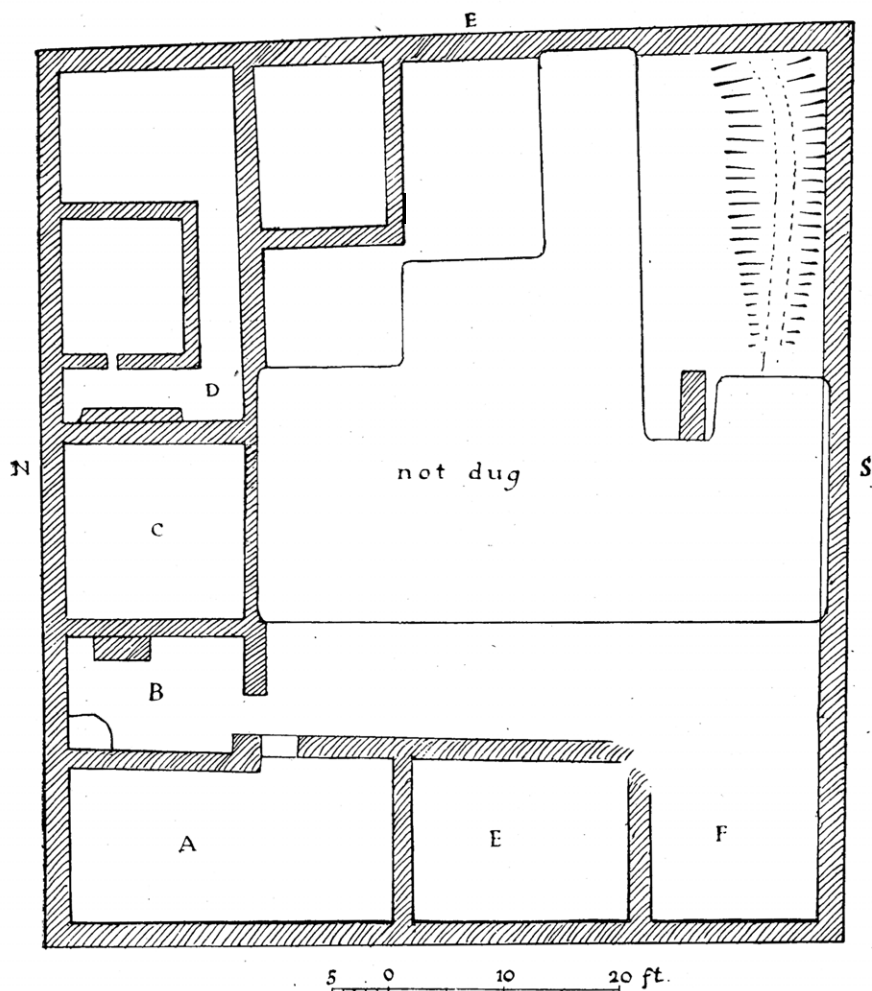


FIG. 18.—COMMANDANT'S HOUSE.

8.—COMMANDANT'S HOUSE.

This site (fig. 18, plan) seems to be a house of the courtyard type. Rooms A, B, C were dug by myself: the

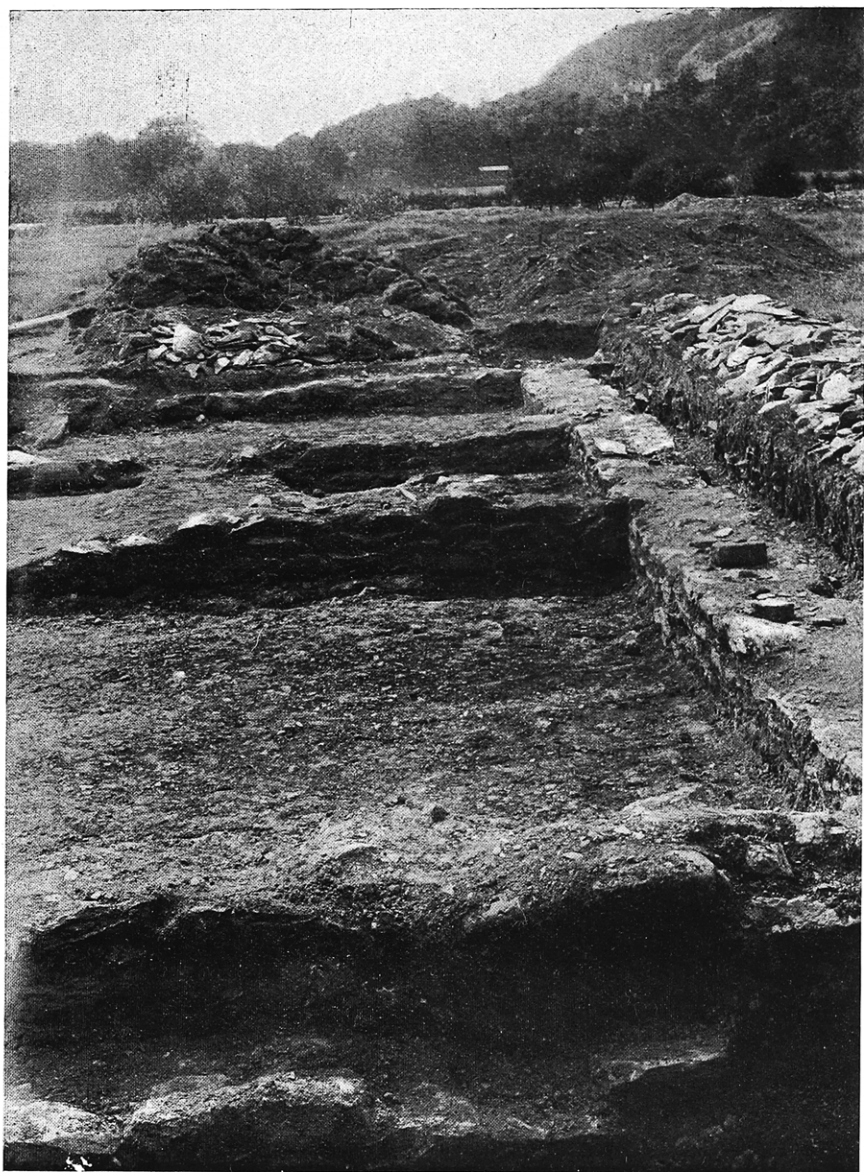


FIG. 19.—ROOMS A, B, C OF COMMANDANT'S QUARTERS, LOOKING WEST.

TO FACE P. 28.

rest, so far as it has been cleared, by Messrs. Freeston and Dibben. In room A we found two floors about 4 inches apart, both of clay and each overlaid with a burnt stratum containing slate. The same conditions were found in B and C. In B we found a low stone seat to the east, and a clay hearth in the north-west corner; this hearth did not show the same stratification as the rest of the floor, and was probably in use throughout the occupation. The southern end of the party-wall between B and C had disappeared, and has been restored in the plan. There was hardly room for a doorway in the missing part.

In the centre of room C an unusually large deposit of charred slate was found extending over an area of about 5 by 8 feet and 3 or 4 inches thick. It lay on the lower floor; the upper floor ran over it. It represented roof-débris, but contained other remains, notably the six bronze nails and drawer-handle described on p. 60 below, which lay within an area of one square foot in the middle of the slate-deposit, crushed by it into the clay of the floor. The heat of the conflagration here had been sufficient to calcine right to the centre slates of $\frac{1}{2}$ inch thick; and one of these, pitching edgewise while red-hot upon the floor, had sunk about three inches into it and remained standing, surrounded by débris. We found it in this position, completely flaked by the heat.

Room D is a long room containing a smaller chamber within it. It may perhaps be regarded as three separate rooms: (a) a narrow space, possibly containing a ladder to a loft above; (b) the aforesaid small chamber, with a passage to one side of it; (c) the main body of the room behind, facing eastwards on the *via principalis*. The narrow space (a, staircase?) had a stone seat running along the west wall. The isolated chamber (b) has a flagged floor and flags set up on edge round the walls. Its purpose was not determined; it may be a flagged hypocaust, but the slates round the wall suggest some sort of tank.

South of this another room was uncovered.

Starting again from room A, I opened a small section of what appeared to be the courtyard, and of room E. This was continued by Messrs. Freeston and Dibben. Room E resembled A, B and C in general characteristics ; but in F the floor-levels proved puzzling. There seemed to be a floor a foot higher than in the other rooms, but it was not continuous and no definite explanation is forthcoming. They also dug in the S.E. corner of the building, nearest the south gate ; here a curious elongated depression was found, deepest in the corner of the house and becoming shallower as it ran westward. At its greatest depth it amounted to a drop of about 11 inches in the floor level. It was hoped that a pit had been discovered, and the bottom of the depression was excavated for about $2\frac{1}{2}$ feet downwards, but nothing in the nature of a pit was found. It is remarkable that no pits have appeared so far during the whole of the work ; this is probably due to the impossibility of digging into the sand without coming to standing water.

The most reasonable explanation of this depression is to connect it with that under the *principia* ; see the section below, on Traces of an Earlier Fort, p. 34.

9.—THE NORTH-EASTERN AREA.

The season's work for the summer of 1914 was not planned to include more than the central portion of the fort, comprising the three large buildings above described. It was thought advisable however to make a few preliminary observations as to the character and disposition of other buildings. The large spaces in front of and behind the central area, known as the *praetentura* and *retentura* respectively, which are left blank in fig. 1, were occupied by long narrow buildings used at least in great part as barracks, and constructed either of stone or of wood. They were grouped, as a rule, in four blocks, and within

these blocks they might lie either parallel or perpendicular to the longer axis of the fort. The former plan is adopted at Housesteads, the latter at Chesters and Gellygaer, to quote familiar examples.

It seemed possible then by means of a few trial trenches to ascertain (1) the size of these blocks of barracks ; (2) the direction in which the barracks lay ; (3) the material of which they were built ; and (4) whether they showed good stratification or any characteristics which would make it worth while to explore them more fully.

For this purpose we chose the north-east block, and made a few trenches in it near the east gate. These fixed the edges of the *via praetoria* and of the road running behind the east rampart. The former proved to be about 12 feet wide, and the latter to extend to the considerable width of over 25 feet from the inner edge of the clay bank. No trace of stone walls at the edge of the barracks was here forthcoming.

We then cut a trench diagonally from the neighbourhood of the east gate across the block in question, emerging on the *via principalis* some 50 feet south of the north gate. This supplied us with material for answering the rest of our questions. Nearly two-thirds of the way across the block we crossed a gutter running north and south, which we explored in both directions for some distance. It was the eastern edge of a narrow roadway of gravel, not more than 4 feet wide. This showed that the subdivision of the blocks ran at right angles to the axis of the fort.

On either side of this road we dug through very deep deposits of charcoal. No stonework, except the gutter and a little flag-paving, was seen in the whole length of the trench ; both these signs indicated that the barracks were of wood, with no stone walls. This charcoal was quite clearly and sharply stratified into layers. We did not attempt to explore these ; the fortuitous finds of a single trial-trench are of no value as material for deduc-

tions, nor was it possible in so small an opening to be sure whether more than two levels could be distinguished. The existence of at least two is however quite plain, and the depth of the charcoal deposit would make a more extended examination of these buildings easy. Moreover, so far as it is possible to judge, they are rich in pottery and other remains.

It is therefore much to be hoped that the careful excavation of a considerable area in either the *praetentura* or *retentura* may be undertaken; and it may be considered certain that such an excavation would afford far more positive knowledge than we yet possess about the occupation and history of the fort.

10.—TRACES OF AN EARLIER FORT.

We have already described parts of the line of subsidence running north and south through the western end of the *principia*. It can also be traced at the extreme S.W. corner of that building on the one hand, and at the S.W. corner of the granary on the other. In the latter place the westernmost ventilation-shaft of the south wall (fig. 16) is on the centre of the subsidence, and its preservation from the plough to the extent of six courses is due to this fact. The same depression is perhaps visible north of this point again in one of the central walls of the granary.

This line of weakness in the foundations of the Roman buildings is of the kind commonly found where earlier ditches or large drains, imperfectly filled up, have been built over; and in order to discover whether the weakness was due to this or to a natural depression in the ground we dug below the floor in the north-west chamber of the *principia*, where the subsidence was most marked. Rather over a foot below the floor we came upon the top of a wall (see section, fig. 20), shown in fig. 7 by cross-shading, still standing two courses high, west of which

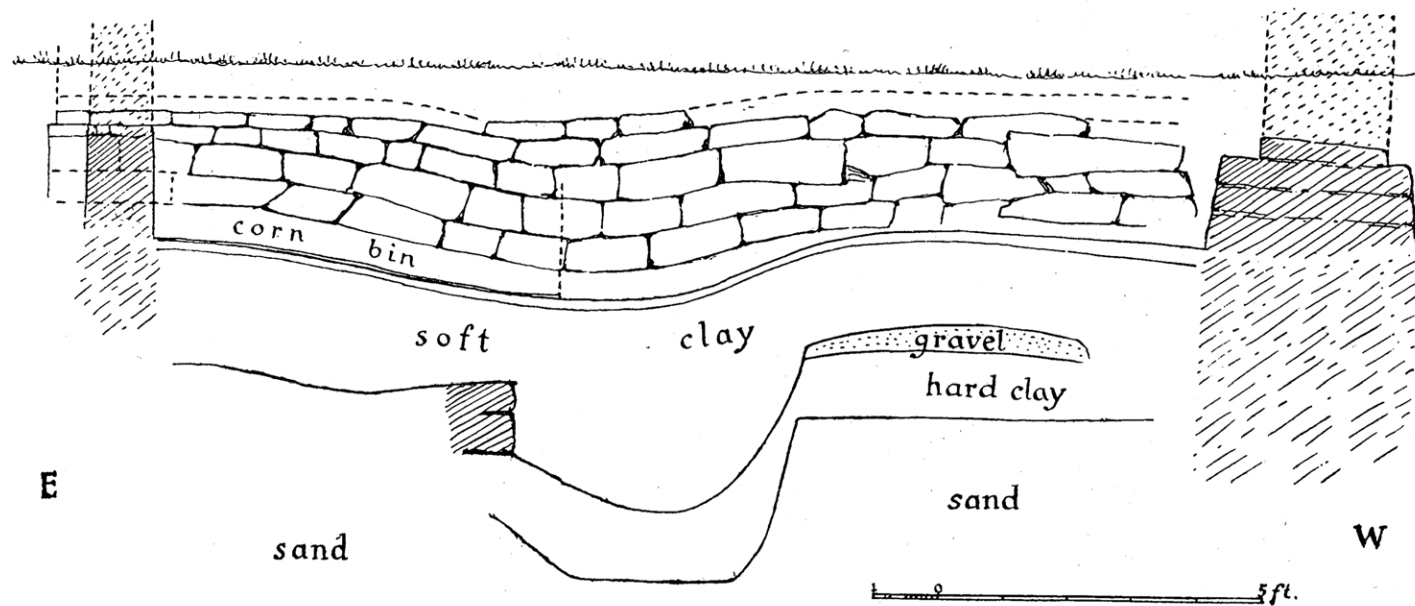


FIG. 20.—SECTION OF EARLY WALL AND DITCH UNDER PRINCIPIA.

was a ditch four feet wide, its further lip being marked by a bed of gravel. The westward extension of this gravel was traced as far as the foundation-trench of the main west wall of the *principia*, which intersected it. Below it were 12 to 16 inches of hard clay, and below that the undisturbed green sand. The ditch had been cut 3 feet down into this sand, and its bottom and sides lined with the same hard clay, clearly distinguishable from the soft clay with which the whole had been levelled up previous to the construction of the *principia*.

The ditch of which we have a section can therefore be traced for about 90 or 100 feet, running approximately north and south. We found no objects in it which might help us to date it; but there seems no reason to suppose it pre-Roman. It is probably the remains of a fort earlier than the one which we have been exploring. It may in fact be the boundary of such a fort; in which case the lip of the ditch must have been much higher than it is now, if it was wide enough to be of any use at all. If so, the ground-level of the early fort was razed before the latter was built and it is improbable that any well-preserved building will come to light.

If this ditch is to be interpreted, as here suggested, as the boundary of an earlier Roman fort, the early fort must have been a small one; unless indeed it extended east of the later east gate. Its north rampart cannot at present be located; but the depression running E. and W. in the S.E. corner of the commandant's house, and the similar depression near the S. gate (p. 14), though apparently not in line with each other, may in the future reveal the site of its southern boundary.

II.—ON THE DATE OF THE OCCUPATION.

We must consider so far as we can in the present state of our knowledge of the site, and in the light of the finds described below, first the length of time covered by the

occupation as a whole, and secondly the ascription of different buildings to the different periods.

(1) In 1913 we found no remains proving occupation before the time of Hadrian, and none later than the coin of Constantine II. found outside the fort, with the exception of a bowl (No. 12 in the 1913 Report) resembling those at Huntcliff. This solitary fragment, together with a floor higher than that which we conjectured to end about 330 (*Ibid.*, p. 445, Floor IV.), led us to suppose that there had been an occupation lasting beyond that date into or beyond the middle of the fourth century. This view is now proved satisfactorily. The very large quantity of vesicular ware found in 1914 does not in itself prove a date subsequent to 330, since it is found in quantities almost as large in the smaller sites on Hadrian's Wall, abandoned about that date; and it has not hitherto been found possible to distinguish earlier from later types of this ware. The proof is supplied (a) by *mortaria* of group D (below, p. 48) and the wall-sided variety, which (with the exception of an early specimen of D in the late stratum of Poltross Burn) may be taken as later than the above date; (b) by a bowl (No. 14) of exactly the Huntcliff type, a type of which there is no sign before 330, though the exact date of its commencement has not yet been fixed; (c) by a silver coin (fig. 28) of Valens, first Emperor of the East (364-378), whose reign falls in the earlier years of the Huntcliff period (about 370-390 or 400). The lower date of Ambleside must therefore be now placed not earlier than 370.

The date of the first occupation has moreover been pushed back. In 1913 we found no conclusively pre-Hadrianic pottery; at most, no pottery earlier than the very slightly pre-Hadrianic series represented at Haltwhistle Burn fort, except one small and doubtful sherd of decorated Samian (Report, p. 459, No. 8). In 1914 two or three examples (20, 56, 73) seem to require a first-

century date, though of these none would be very conclusive by itself. The decisive evidence comes from the figured Samian bowl of early Dr. 37 type (fig. 24, No. 1, p. 51), which it appears impossible to date in any other period except the years round about 80 A.D. To this we must add the plain Samian dish, fig. 25, No. 3, and perhaps the bowl, fig. 25, No. 1 (see below, p. 54); but even if the three coarse sherds mentioned above be also accepted as first-century fabric, the total evidence for a first-century occupation is still small. Some of the *mortaria* which we have assigned to the Hadrianic period might be added to the list, without making an appreciable difference. The early pottery, then, of which there is now too much to be ignored, gives definite evidence of an occupation in the Agricolan period, that is about or not long after 80 A.D. At the beginning of the period of activity known as Hadrianic, though it may here and elsewhere have begun before Hadrian's accession, the occupation was resumed and, to judge by the continuity of the pottery-series, lasted without any considerable intermission till 370 or later.

(2) If it is regarded as certain that Ambleside was occupied during the campaigns of Agricola, we must decide what existing structures are attributable to such an occupation. The early Samian, figured and plain, was found in the central space of the granary, in a mass of clay which seemed to have been used as "filling-in" for the foundations of that building. This clay also contained the coarse-pottery fragments 24, 25, 57, and 60, which belong to the second century rather than the first.

Of the other probably first-century vessels, 56, the most certain, was found at the north edge of the *via praetoria*, not far from the east gate; a site which produced several second-century sherds. No. 73 was found outside the east rampart, and No. 20 in the clay bank inside the north wall.

With the possible exception of No. 56, these finds were therefore not associated with the definite occupation of the fort as we have it, but might quite well be relics of an earlier fort demolished in the construction of the later one. This early fort has now, we believe, been found in one place ; and so we are able to say with fair certainty that the low-level construction under the *principia* represents an Agricolan fort, whose materials were used in the building of the Hadrianic fort.

A difficulty in the way of this theory springs from the paucity of Hadrianic remains in the central buildings, below which the supposed Agricolan stratum occurs. In the *principia* no second-century pots were found at all, though the coin of Faustina II. in the courtyard gutter cannot have been very long in circulation before it was dropped ; in the commandant's house the great majority of the relics are third and fourth century, the coin of Julia Domna being one of the earliest. In the granary, again, second-century vessels were found in the " filling-in," associated with the first-century Samian.

We must therefore ask whether the existing *principia*, etc., may not be altogether later, possibly of the early third century, and the stratum underneath them Hadrianic, corresponding to the lowest strata in the corner towers.

Against this view we may quote the similarity (see fig. 9) between the *principia* of Ambleside, Melandra (a first-century fort) and Hardknot (certainly occupied in the first century.) Such a plan may have been an early type, but there is no evidence to fix its duration. There are, however, other points, viz.: the coin of Faustina mentioned above in the *principia*, and a quite early *mortarium* (19) in the commandant's house. As the argument for the post-Hadrianic date of these buildings rests on nothing but the absence of second-century remains, these are perhaps enough to disprove

it. And it must be remembered that the exploration of the commandant's house is incomplete.

The finding of second-century ware in the filling-in of the granary is at first sight more serious. The central space where the find occurred, however, was in a disturbed condition (p. 27) and bricks and tiles lying about suggested the demolition of previous kilns. If these signs were rightly interpreted, it is perfectly natural that pottery belonging to the occupation of the building should be mixed with the earlier stuff below the proper floor-level.

It appears then that both the corner towers (involving presumably the rampart and gates) and the central buildings are to be considered as belonging to the time of Hadrian. Two points of detail remain, namely the gravel bank outside the S. rampart and the vault under the *sacellum*.

In the former site a good deal of pottery was found. Of the coarse ware which we have below considered in detail, Nos. 23, 31, 32 and 66 came from here. 23 belongs to the second century; the rest to the third. The bank therefore was already constructed in the latter part of the second century, though as suggested above it may have been added to from time to time. The absence of early pottery goes towards disproving the suggestion of a visitor, that it was connected with an early fort.

The vault in the *principia* contained no datable relics. It stands however in an interesting relation to the early ditch explored to the north of it. The axis of this ditch passes through the centre of the vault, which consists simply of a section of the ditch walled off, floored level with flags and clay, and left open while the rest was filled up with clay. If this is how it was actually made, it follows that the early ditch was still more or less open when the vault was built, and therefore that the latter was part of the original plan of the second fort; and in fact influenced

the design so far as to cause the *sacellum* to be planted precisely over the old ditch, to save the trouble of digging and puddling with clay a new hole in the very wet and sandy soil. That the old ditch was well puddled with hard clay is remarked above (p. 34).

On the other hand, such vaults are sometimes (as at Brough and Newstead) obviously later additions to the main structure, and it is frequently said that as a matter of fact they are always of late date. If the generalisation must be maintained at all costs, it follows that the exact coincidence of the Ambleside vault with the old ditch is merely fortuitous.

12.—PRESERVATION OF THE REMAINS.

The question of the immediate treatment of these buildings was discussed at a meeting of the exploration committee on August 7th, the question of ultimate treatment being shelved on account of the war. The scheme then accepted by the committee has now been carried out as follows. The rampart lies for the most part so low, and so little of it stands more than a few stones high, that we decided not to keep it open. The trenches in which it was examined have accordingly been filled in, with the exception of a few yards to the west of the south gate, where a specimen of it has been left exposed, the trench being properly protected against falling-in. All the gates and what is left of the towers, on the other hand, remain uncovered; the stonework where necessary for its preservation has been covered with turf, but no further restoration has been done. All cuts in the ditch have been filled.

Within the ramparts all trenches have been filled except the large central opening which includes the granary, *principia* and commandant's house. In the granary, soil has been put back so as to cover in all foundations, leaving on average a foot of wall above the surface. This

has been levelled up with stones and soil and turfed over. The range of buttresses on the north has been rebuilt with Roman stones on the pattern of the complete ones at the north-east ; this rebuilding can be readily distinguished from Roman work *in situ* by the roughness of the stones and the absence of chamfer. The same system has been followed in the *principia*. Here the line of all walls has been marked, even where no masonry was found in excavation, by stones carrying a line of turf ; the floors have been left as we found them. The vault in the central chamber has been so treated as to preserve it from collapse and damage by rain and frost. This has been done by putting mortar into the highest course remaining, and continuing the masonry upwards with new walling to a uniform height. The re-entrant angle north of the steps showed a tendency, when found, to fall into the vault ; it was therefore taken down and put back stone by stone in its proper place. The whole was then laid with turf, which probably represents the approximate floor-level of the *sacellum*.

The steps leading down into the vault have been covered with new flag treads to protect the Roman treads from wear ; and as the construction of the Roman work is practically indistinguishable from that done by our mason, a line of red paint has been led round the walls of the vault to mark the highest Roman stone *in situ* at any given point. The floor has been left untouched.

In the commandant's house the walls have been covered with turf, and nothing else has been done.

It will be observed that a good deal of rebuilding has been done, especially in the granary ; and that in the *principia* portions of wall have been indicated by turf where no walling was actually found. The object of this was to supply visitors with some conception of the plan and construction of the buildings ; those who wish to know in what state they were found will, it is hoped, find all the necessary materials in this report.

13.—THE POTTERY.

The following works are referred to by abbreviations:—Mr. Simpson's Poltross Burn report (these *Transactions*, N.S., xi.) as P.B.; the same author's report on Excavations on the line of the Roman Wall (*Ibid.*, xiii.) as R.W.; the report on the Papcastle excavations (*Ibid.*, xiii.) as P.; the Ambleside report for 1913 (*Ibid.*, xiv.) as A. 1913; the Corbridge report for 1911 (*Arch. Ael.*, ser. III., vol. viii.) as C. 1911; the Wroxeter reports for 1912 and 1913 (published as independent volumes by the Society of Antiquaries) as Wr. 1912 and Wr. 1913 respectively.

14.—COARSE WARES: FIGS. 21-23.

Bowls and Dishes: Fig. 21.

1, 2. Variants of A. 1913, 7, *q.v.*

3. Like A. 1913, 4: diagonal strokes outside, 6" diam.

4. Variant of the same type.

5. Like A. 1913, 5. Zigzag ornament.

These dark grey or black specimens are typical of a very large quantity of similar ware found in 1914 which closely resembles A. 1913, 3-5 and 7. Such ware was in the fourth century largely superseded by "vesicular"* but till then shows little variation.

6. Grey, 5½" diam. Granary. Slightly resembles A. 1913, 2 and 6. The heavy rim suggests a rather early date; *cf.* an example at Haltwhistle Burn fort (slightly pre-Hadrianic) plate v. No. 8 (*Arch. Ael.*, ser. III., vol. v). Perhaps first half of the second century.

7. Buff, 4" diam. Granary. Somewhat like the preceding.

8. Grey, 5" diam. Granary. A. 1913, 9: C. 1911, 71: P.B., v., 19: probably early fourth century.

9. Reddish sandy clay, black surface. *Via praetoria* near E. gate, associated with early types (No. 56 and others), *cf.* A. 1913, 1; it is probably a fragment of a bowl like P.B., iii., 1-3, representing the Hadrianic development of the type known in the Flavian period as C. 1911, 4, 5, 7, 8.

10. Grey, 8" diam. Granary.

11. Sandy red, 5" diam. *Via principalis* near N. gate. These two represent a type for whose dating I have no evidence.

12. Grey, 8" diam. Commandant's house.

13. Hardish buff, brown paint, 7". Granary. Another of the

* This word seems to have become current as the name of the common black fourth-century fabric containing fragments of white stone, though as a description it is unsatisfactory.

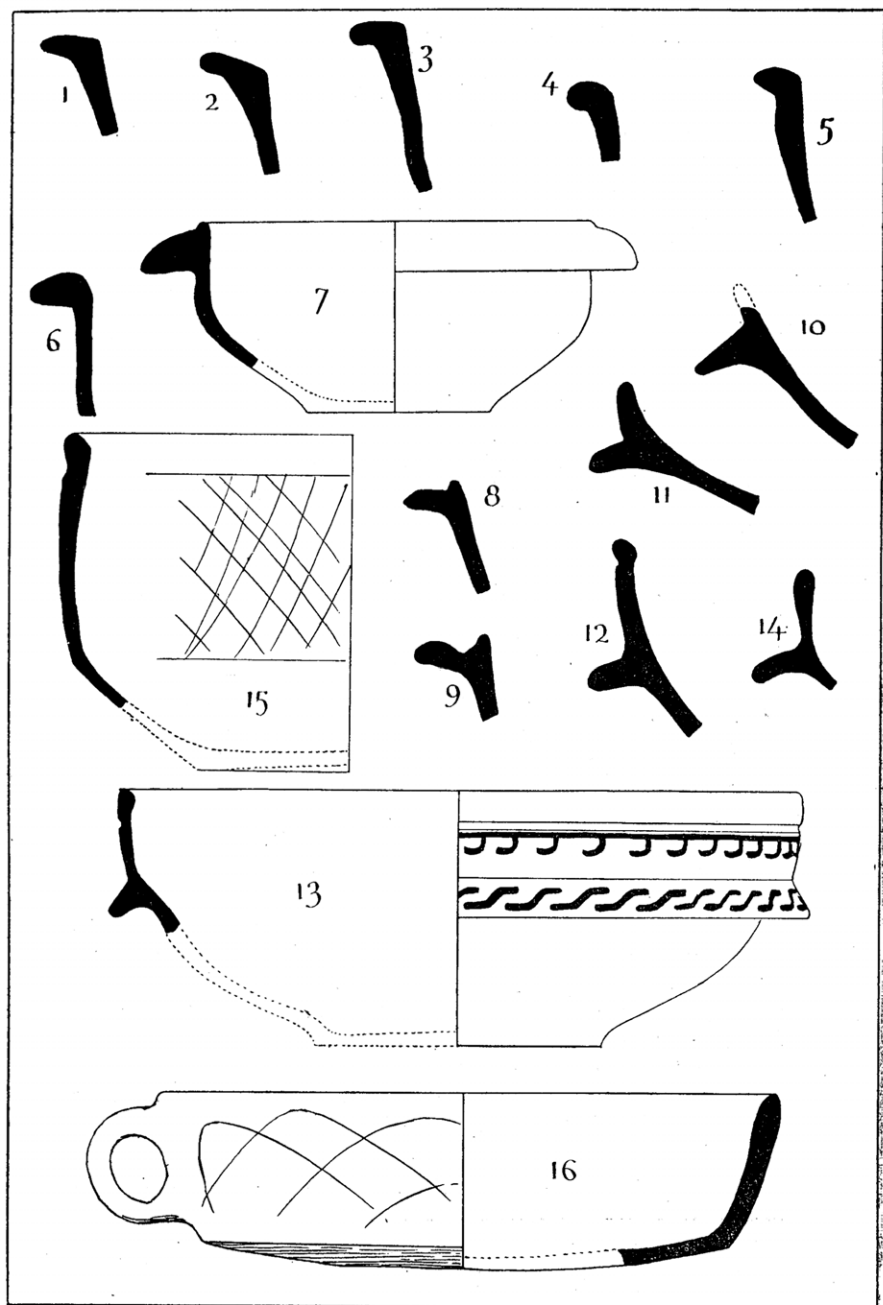


FIG. 21.—BOWLS AND DISHES (1).

same type in the *sacellum*, of rough and badly-fired clay, red, buff and black. These resemble P.B., iv., 33, which, however, had no groove outside the lip; it is of hard whitish clay with zigzag decoration in brown paint, and belongs to period II. Nos. 12, 13 may therefore be dated in the third century.

14. Very soft red clay, 7" diam. Granary. J.R.S., vol. ii., fig. 40, No. 7, shows an exactly similar section from Huntcliff. This therefore dates probably in the last third of the fourth century.

15. Black, 6" diam. N. ditch, near gate. The restoration gives a very curious vessel, a carinated bowl like P.B., iii., 4-6, without the characteristic flat rim; and having instead a rounded edge such as is common on beakers or flat dishes, between which two shapes it is intermediate. The ratio of height to diameter is too high for it to admit a reconstruction as an ordinary dish. It must be taken as a variant of A. 1913, 3.

16. Black, 6½" diam. Commandant's house, room C. Common type of flat dish with handle.

Mortaria: Fig. 22. The letters B-F. refer to Mr. J. P. Bushe-Fox's list of typical *mortaria*-forms published in his Wroxeter report for 1912.

17. Soft whitish clay; 8" diam. North-east area.

18. Buff clay, buff slip, quartz grit; 9" diam. Outside the east rampart. These two types resemble B-F., 22, which at Wroxeter occurs in deposits dated by Mr. Bushe-Fox to 80-120 A.D. The same type occurs R.W., 98 (High House Milecastle, period I.), which proves its continuation at least into the time of Hadrian, if not later. In general, the occurrence of a given type in a dated stratum at Wroxeter does not seem to supply a *terminus ante quem* for its appearance elsewhere.

19. Red clay, quartz grit; 8" diam. Outside commandant's house. Somewhat like B-F., 38, which occurs in the period 80-110 A.D. It can hardly be considered definitely pre-Hadrianic.

20. Red clay, buff slip, mixed grit; 7½" diam. Stamp NSD.B. Inside N. rampart, E. of gate. Resembles B-F., 58, which is found in the latter part of the first century and the first half of the second; in the earlier examples the bead is lower than or level with, in the later higher than, the roll. This therefore may belong to the last quarter of the first century.

21. Soft sandy red clay, buff slip, quartz grit; 6" diam. Stamp apparently TENGI OF. Granary. B-F., 66=P.B., plate iv., 4; Hadrianic period.

22. Sandy reddish clay, grey core. Oven near west gate.

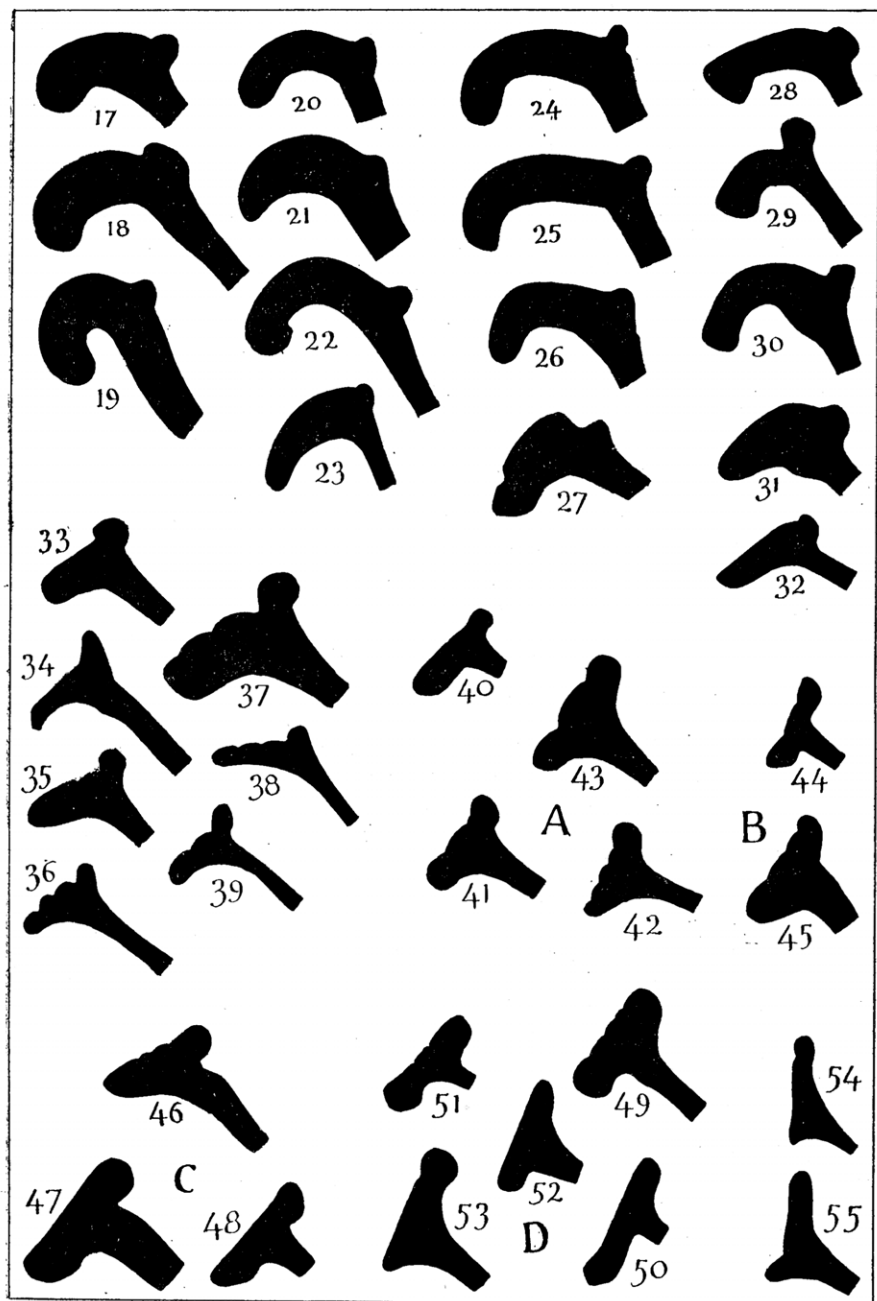


FIG. 22.—MORTARIA ($\frac{1}{2}$).

B-F., 46, a type found at Caerwent and Gellygaer and belonging to the earlier part of the second century. This suggests that the oven was used before the date assigned to the beginning of the ash-heap in the gateway (p. 15).

23. Sandy red clay, grey core, grey grit; $8\frac{1}{2}$ " diam. Outside S.W. corner, in the gravel bed (p. 8). R.W., 4 (Birdoswald turret, period I.). Second century.

24. Soft buff clay, small quartz grit; $10\frac{1}{2}$ " diam. Low level S.E. of N. gate. Similar rims of smaller vessels were found in the centre of the granary associated with first-century Samian in the filling-in clay, and in the north-east area. R.W., 3 (Birdoswald turret, period I.). A type belonging apparently to the late first and early second century.

25. Hard buff; red and black grit (some in rim), $7\frac{1}{2}$ " diam. Granary, low level, with first-century Samian. R.W., 1-3, 42 (period I. B). This last example proves the continuation of this type into the later second century. It is much like No. 24 above, and is earlier than R.W., 42.

26. Red clay, buff slip, red and grey grit; 7" diam. Stamp, FAVSTINI MANV. South gateway. It belongs to the same series of late first and second-century types as Nos. 24, 25 above. For a fairly close parallel see P., c; also compare R.W., 2, 3 (Birdoswald turret, period I.).

27. Soft red clay; 8" diam. Clay bank north of E. gate. R.W., 97, 100 (High House milecastle, period I.); B-F., 74 (apparently not in a dated deposit; but Nos. 70, 78 which closely resemble it are dated 80-120 A.D.). According to Mr. Bushe-Fox the type was introduced about the end of the first century and lasted well into the second. It seems to correspond with the so-called Rhaetian type of the second century.

28. Buff clay, hard. Black grit (some in rim). P., g; R.W., 2 (Birdoswald turret, period I.) is somewhat like it but looks decidedly earlier. This seems to be late second century. The presence of grit in the rim is sometimes said to be proof of an early date; but such examples as this and Nos. 30, 44 show that the generalization is not a safe one, when used in isolation from other marks.

29. Hard buff clay, grey grit, 9" diam. *Via praetoria* near E. gate. Rather like R.W., 113-114 (High House milecastle, period II.) only this has a higher bead and is therefore, if anything, later. Cf. also P.B., plate iv., 8, 10; which bear out the third-century date. B-F., 106, a type ascribed to the late second and third centuries, superseding the second-century type represented by No. 18 above.

30. Hard buff clay, grey core; mixed grit (some in rim), 8" diam. Stamp, COTASO,* retrograde. Inside N. gate. Has the same roll as No. 29, the note on which also applies to this type, though the lower bead here may indicate a slightly earlier date. The quarter-round moulding underneath the roll occurs in B-F., 86 (late second-century), 110 (=P.B., plate iv., 8), and P.B., plate iv., 10, the last two belonging to period II. This feature may therefore be dated approximately to the end of the second and the third centuries.

31. Hard whitish clay, 9" diam. Gravel bank outside S. rampart. Stamp, . . . AVRI. For the moulding underneath the roll, see last note. Otherwise the type somewhat resembles No. 32 below, and it no doubt belongs to the third century.

32. Whitish clay, grey grit; 7" diam. Gravel bank outside S. rampart. B-F., 118: "probably not earlier than the middle of the third century, but there is not yet enough evidence to date them with certainty." Cf. P., *h*.

Typologically, this pattern may be regarded as the link between the "roll-rim" types which we have been examining hitherto and the "flanged" type; which again is intermediate between the "roll-rim" and the "hammer-head." The "hammer-head" again develops into the "wall-sided" variety. This development does certainly correspond roughly with the chronological order, though with much overlapping, the extent of which can only be discovered by separate investigation of each type.

33-39. These types all belong to the variety B-F., 166-174, which is described as approximating to the hammer-head type. It seems convenient, however, to distinguish them from that type and attach them to the flanged type, though there is no clearly marked division on either side.

They are dated to the late third or early fourth century by P.B., plate v., 1 (period III.; =B-F., 174), which especially resembles No. 37 below; but there is no evidence as yet for more detailed dating. The datings I have attempted below (Nos. 40-53) will if correct place P.B., v., 1 early in its period, *i.e.*, soon after 270. If it is later, my whole series of dates must be slightly "telescoped."

33. Pinkish white clay, grey core, black grit; 7" diam. Room C in commandant's house. B-F., 166; not unlike No. 32 above, and perhaps belongs to the earlier part of Mr. Simpson's "period III."

* The reading seems to me clear, though no such Celtic name is known.

34. Hardish buff clay, black grit; 7" diam. Granary. Not in B-F.; should perhaps come before B-F., 166.

35. Whitish and grey clay, black grit; 6½" diam. Central space of granary.

36. Whitish, black grit, 6" diam. North-east area.

37. Whitish clay, grey core; 9" diam. North-east area.

38. Soft whitish clay, black grit; 8" diam. East rampart.

39. Buff, brown slip, black grit. North-east area.

Nos. 40-53 are of the hammer-head type. They are confined to the later periods; in deposits before 180 A.D. they are entirely absent and are rare, though not quite unknown (*cf.* R.W. 115) in the subsequent period ending about 270. They are commonest in the late third and fourth centuries. I have attempted to distinguish various types and to place them early or late within this period; but the limits I have assigned to the duration of any given type are, owing to the nature of the evidence, chiefly conjectural.

40. Whitish clay, 8" diam. Granary. Akin to the last group, Nos. 33-39, and therefore dates early in the hammer-head series, if, as seems probable, the hammer-head developed out of the preceding variety.

41. Whitish clay, black grit. North-east area. R.W., 115 (High House milecastle, period II.); P., *k*.

42. Soft whitish clay, black grit; 7" diam. North-east area. Looks earlier than B-F., 186, which is "a Wroxeter example dated to about the end of the third or the fourth century."

43. Soft sandy reddish clay, red grit; 8" diam. Outside E. rampart.

These three form a group distinguished by a fairly well-marked moulding, of more or less circular section, at the head of the rim; I therefore place them between the type represented by P.B., v., 1 (*i.e.*, No. 37 above) and the true hammer-head type. Chronologically, no doubt, they overlap both types. They should therefore come early in the hammer-head series, though not so early as No. 40, which may be called either an early specimen of this group or a late one of the preceding: and they may be conjecturally dated 260-300 A.D. R.W., 115 shows them to begin in period II.; No. 40 may belong to the third quarter of the third century. Nos. 41-43 I shall call, for convenience of future reference, group A.

44. Soft whitish clay, grey and red grit (much grit in rim); 7" diam. Granary.

45. Whitish clay, black grit. Commandant's house. Rather like P.B., v., 4 (period III.).

48 EXPLORATION OF THE ROMAN FORT AT AMBLESIDE.

These two form another group which I should place slightly later than the preceding one, to which it is very similar, but in use before 330, the end of period III. at P.B. Perhaps last quarter of third and first quarter of fourth centuries. (Group B).

46. Hard buff clay, black grit, 8½" diam. Commandant's house. Very like P.B., v., 3 (period III.).

47. Reddish clay, grey core, buff slip, grey grit; 8½" diam. Inside N. gate. A similar rim in the *sacellum*.

48. Hardish buff clay, light buff slip, black grit; 8" diam. Inside N. gate.

This group is distinguished by the angle of the rim, which is flatter than usual, and especially by the sharp groove inside separating the upper part of the rim from the body of the vessel. It looks distinctly earlier than the true hammer-head type, and P.B., v., 3, places its commencement at least before 330. Whether it is later than or parallel to the preceding groups I am unable to suggest; but it is safe to say that it was in use in the first half of the fourth century. (Group C).

49. Whitish clay, black grit; 9" diam. *Via principalis* near N. gate.

50. Whitish clay, 7" diam. Inside W. rampart. B-F., 190 (Corbridge, "certainly in use in the third and fourth centuries").

51. Whitish clay, 8" diam. Like the preceding, but with grooves on rim. P., m, which however is without grooves.

52. Soft reddish clay. North-east area. Rivet-hole with lead rivet *in situ*. P., l.

53. Hard buff clay, black grit; 7" diam. B-F., 214 (Wroxeter, painted). P., j.

These I describe as true hammer-head types, and call group D. The last is passing over into the wall-sided variety. No. 49 looks the earliest and is paralleled by P.B., v., 2; which therefore places the beginning of the group before 330. As a whole, the group perhaps belongs to the middle of the fourth century.

Nos. 54, 55 are of the "wall-sided" type.

54. Whitish clay, 7" diam. Granary. B-F., 226 (Corbridge, in a late second-century deposit, where, however, it is believed to be out of its proper place; see Wr. 1912, p. 80); Huntcliff report (J.R.S., ii., 227), Nos. 1-5 show a similar type of rim dated 370-395. There seems to be no doubt, in spite of the position of the Corbridge specimen, that the pattern belongs chiefly to the later fourth century.

55. Soft red clay, buff slip, grey core. Quartz and haematite grit; 6" diam. North-east area. No parallel in B-F.; and the

fabric is unusual for this kind of *mortarium*. In type however it belongs to the wall-sided variety.

[NOTE.—If the above datings of *mortaria* can be at all relied upon, it will be observed that they bring the occupation of Papcastle down into the second half of the fourth century. Whether it began in the first century cannot be definitely stated.]

Cooking pots, jars, beakers : Fig. 23.—These were treated at some length in the report for 1913, but a few new shapes may be noted this year.

56. Beaker in hard buff rather sandy clay, $4\frac{1}{2}$ " diam. *Via praetoria* near E. gate. Cf. C. 1911, 15, 17; Wr. 1912, 10, a bowl belonging to the period 80-120 A.D., with this type of rim. Cf. also Wr. 1912, 26, 27, 80-110 A.D., and a good deal like this specimen; these "appear to last in small quantities into the reign of Hadrian" (*Ibid.*, p. 73).

A type of rim closely resembling this is found both on bowls and other vessels in the Flavian period and lasts into that of Hadrian. During this time however it undergoes a good deal of modification. If the Flavian bowl in C. 1911, No. 4-7, be compared with the Hadrianic in P.B. iii., 1-6, the difference is at once evident. The lighter, cleaner and sharper lines of the first-century work contrast strongly with the heavy second-century modelling. If this beaker is examined in the light of this contrast, it will be seen to belong by its style to the earlier group; and consequently it seems safest to place it in the Flavian period.

57. Sandy grey beaker, 5" diam. Granary, low level. Cf. R.W., 38 (High House turret, I.A), 57 (Appletree turret, I.A). First half of second century.

58. Grey beaker, $3\frac{1}{2}$ " diam. North gate. Rather like R.W., 53, 54 (Appletree turret, I.A); also C. 1911, 17, but not so early. Wr. 1912, 26 (80-110 A.D.). First half of second century

59. Buff jar; inside W. rampart. R.W., 55 (Appletree turret, I.A), 109-112 (High House milecastle, I.). First half of second century.

60. Sandy grey, $4\frac{1}{2}$ " diam. Granary, central space. R.W., 15 (Birdoswald turret, I.). Second century.

61. Sandy grey, $4\frac{1}{2}$ " diam. Wavy line below lip. Second century, probably not later than middle.

62. Small sandy grey beaker, $\frac{1}{8}$ " thick, $2\frac{1}{2}$ " diam. N. rampart, inside, lower stratum. R.W., 9 (Birdoswald turret, I.). Second century.

63. Buff, 4" diam. Granary. R.W., 109 (High House milecastle, I.). Second century.

E

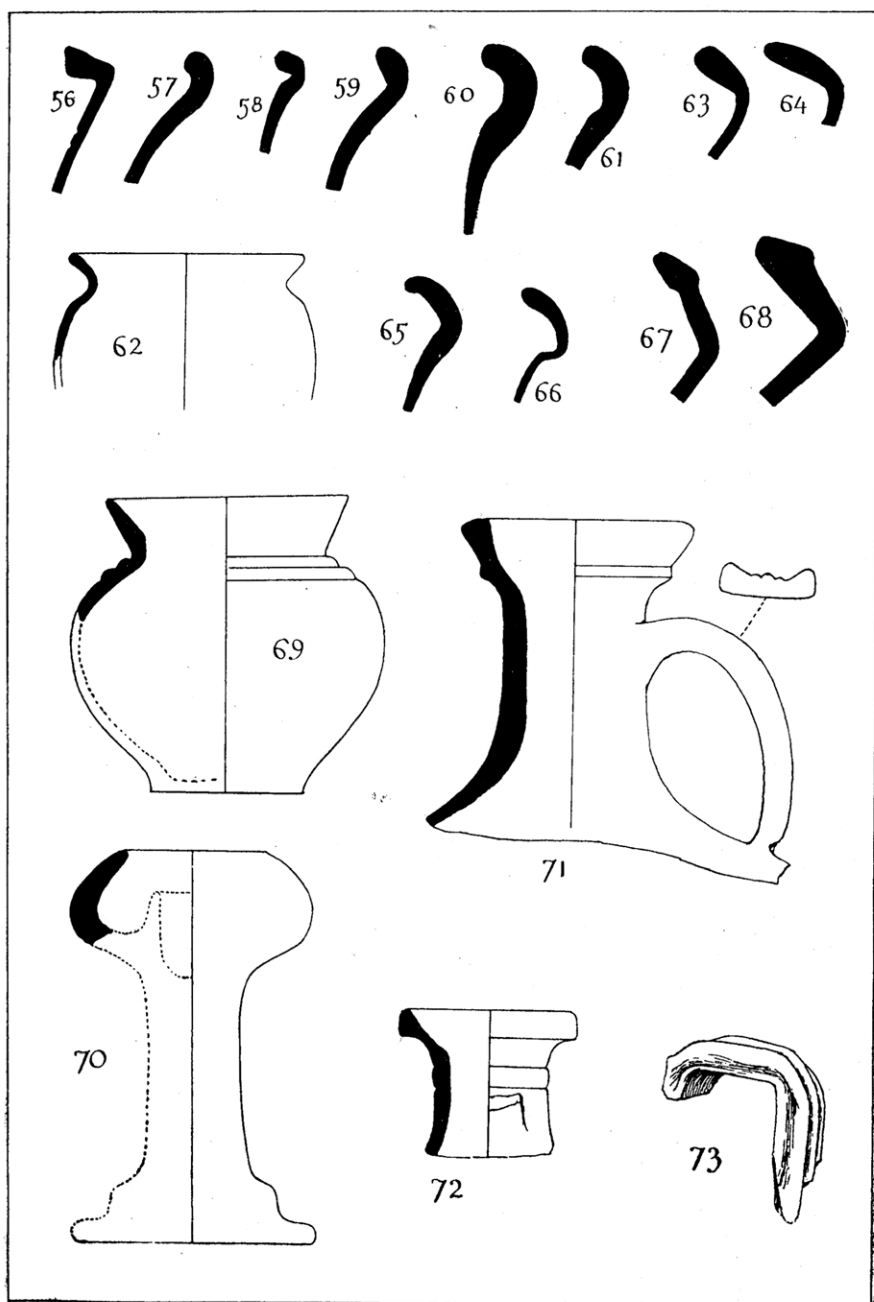


FIG. 23.—MISCELLANEOUS COARSE WARE ($\frac{1}{2}$).

64. Black, 7" diam. N.-E. area. As No. 63 or rather later.
65. Polished black, 5½" diam. North-east area. R.W., 83 (Appletree turret, II). Probably third century.
66. Grey, 4" diam. Gravel bank outside S. rampart. P.B. iv., 26 (period II); R.W., 119 (High House milecastle, II.). Probably third century.
67. Sandy grey, 6" diam. *Via principalis* near N. gate.
68. Coarse sandy clay, 7½" diam. Commandant's house. P.B., v., 17 (vesicular, period III.); R.W., 116 (High house milecastle, II.). These two forms evidently begin in the coarse wares of the third century and survive into the fourth, when they appear in vesicular ware, in which also we found them at Ambleside.
69. Soft buff, 4" diam. Granary. P.B., iii., 28 (3½" diam., period I., in débris). Second century.
70. *Candlestick*; whitish clay. Granary. Details of restoration conjectural; for types, see Wr. 1912, p. 75, Nos. 41-43: C. 1911, No. 74.
71. *Jug*; red-buff, soft clay. Inside W. rampart. Apparently a second-century type.
72. *Jug*; soft brown clay. Exactly like Wr. 1912, 4; which is described as belonging to the last half of the first or more probably the first half of the second century.
73. *Jug-handle*; hard red, grey core, buff slip. It resembles first-century types both in shape and fabric; the clay is almost precisely like that of the Flavian vessel figured C. 1911, 1. It might easily be first-century. Found outside E. rampart.

15.—FIGURED SAMIAN: FIG. 24.

Twelve pieces illustrated, all fragments of shape 37.

1. Granary, low level (see p. 27). "Early 37," with double frieze of decoration and no plain band between the decoration and the foot-ring. Above, frieze containing festoons, one containing a small bird, not unlike the Montans type, Déchelette 1012. A somewhat similar bird occurs on an early 37 from Newstead (see J. P. Bushe-Fox in *Archæologia*, vol. 64, plate xxiv., 49, and p. 306). Below, alternate medallions and cruciform pattern. The medallions are framed in a triple ring: the only complete one contains a kneeling archer like D., 168, which occurs on shape 29 and is ascribed to the Montans factory: also somewhat like D., 170, from La Graufesenque. The cruciform ornament is much like an example from Newstead on an early 37 bearing the La Graufesenque eagle, D., 982, which is known at Pompeii, destroyed 79 A.D. (*Archæol.*, vol. 64, plate xxiv., 50): cf. an early 37 from Carlisle (*Ibid.*, plate xxii., 10).

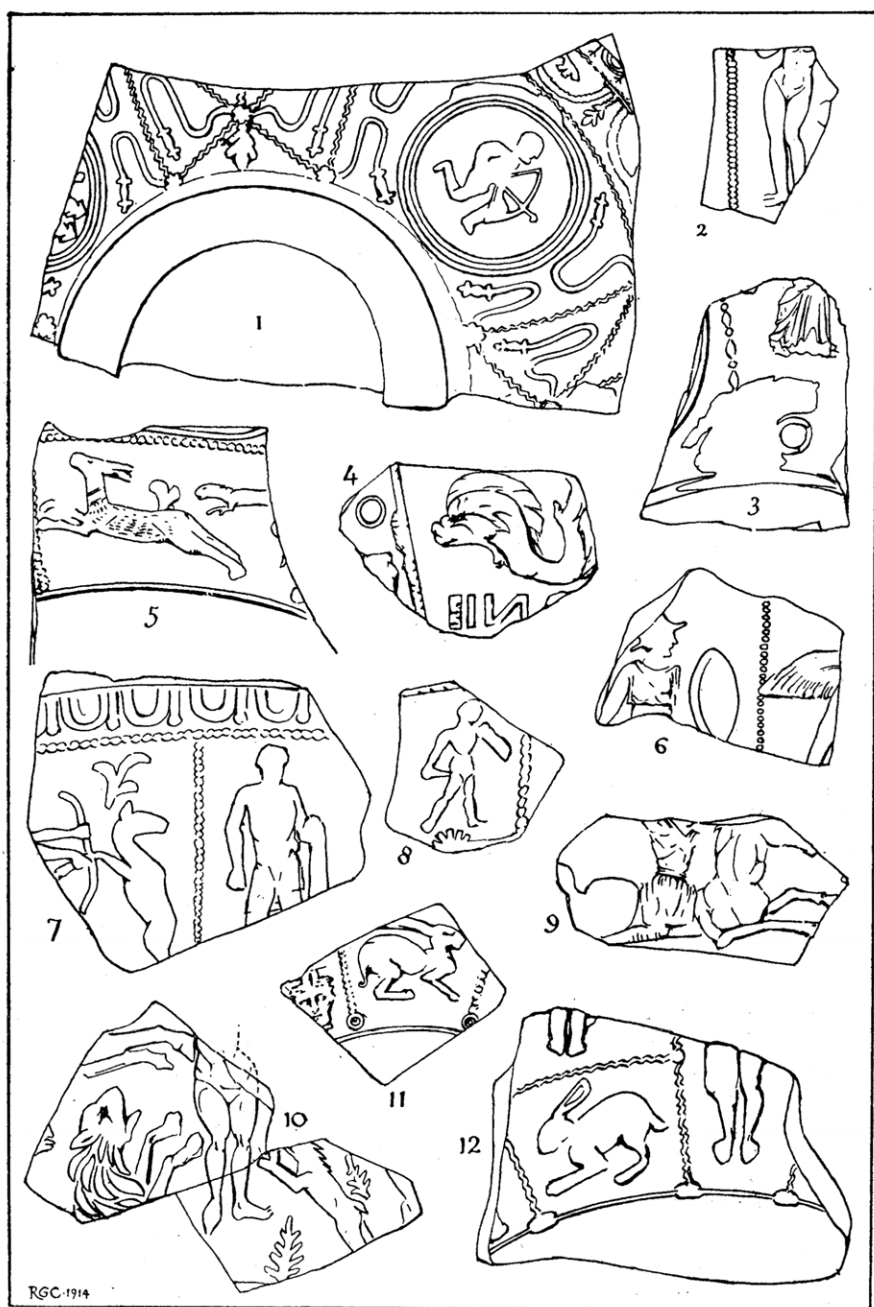


FIG. 24.—FIGURED SAMIAN (8).

This is therefore a Rutenian vessel of the last half of the first century: the above parallels suggest a date of about 80 A.D., which is confirmed by Mr. D. Atkinson, who reports on the ornament that it closely resembles his Pompeii ware (published by him in *Journal of Rom. Studies*, 1914).

2. Inside W. rampart, near N.W. tower. 37 with metope decoration. Hard clay, bright red glaze, very good delicate modelling. Type, Venus holding out tresses of hair in each hand (D., 173, Lezoux).

3. Gravel bank outside S.W. corner. 37 with metopes and medallions. Hard clay, good rather dark glaze, very good delicate modelling. Part of surface ground flat. Draped female figure, walking r. (D., 540, used by the potters Paternus, Laxtucissa, Servus, Talussanus, in the middle of the second century).

4. Metope decoration, dolphin l.: fragment of maker's name, . . . NI retrograde in relief, *i.e.*, Paternus, a Lezoux potter who used the dolphin (D., 1052) in common with Decimanus and Servus, but with his terminal mark as here seen.

5. Metope decoration? Hare? with collar, running l.; smaller animal behind. Neither in D.; whose type 940 however is a somewhat similar hare running r. but without collar. Possibly La Graufesenque.

6. Metopes. To r, right arm and wing of a cupid like D., 225; to l, figure apparently female, tunic, helmet and shield, perhaps an Amazon; not in D.

7. Very soft clay, dull glaze. Metopes: to r. male figure holding knot of drapery in l. hand; resembles the Hercules, D., 448 (used by Lezoux potters Austrus and Libertus), except in the absence of club resting on left shoulder and the slight indications of drapery on the thighs. May be a modified form of the same type. To l., Diana and fawn, D., 64; the second-century version of this subject, used by Advocisus, Banuus, Cinnamus, Decimanus and Divixtus.

8. Room N. of *sacellum*. Soft clay; metopes, gladiator and rosette. The gladiator is D., 616 (Lezoux type used by Catussa).

9. *Via praetoria* near E. gate. Fighting horseman, galloping r., in cuirass. D., 156 (Lezoux: Cinnamus, Cocisius, Docius, Libertus).

10. Outside E. rampart. Nude female victim, attacked by lion and other animals. This belongs to a group of amphitheatre scenes representing the punishment of criminals, D., 641-5. This figure seems to correspond to D., 642, where the post to which the figure is bound is an addition to the mould. Lion,

D., 741 (Lezoux : Bovillus, Priscianus) ; the other animal may be a boar like D., 835, 835*a*. Above are the legs of a stag ; D. observes that harmless animals such as stags occasionally figure in these scenes.

11. Found, with a few coarse sherds, in sand dredged from the lake-bottom, close to the bathing-pavilion, and given by the workmen to our foreman. Metopes, l. Medusa mask, D., 680 (Lezoux) ; r. hare not in D. though agreeing in general style with those figured by him. Good clay and modelling.

12. Granary, very soft clay and poor glaze. Metopes ; hare, D., 950 (Lezoux ; Banuus, Servus).

Not figured :

13. S.W. turret, floor III ; good hard clay ; chevron reaching from top to bottom of the decorated frieze, with one highly conventionalized animal in each triangular field ; above, birds standing l. and looking backwards ; below, rabbits running l. The style is that ascribed by Forrer to Janus of Heiligenberg (*Heiligenberg*, plate xxv., No. 11, shows the same bird and a trellis resembling the chevron, on a specimen of that potter) and all details are typical of German Samian.

16.—PLAIN SAMIAN.

Three vessels of somewhat unusual shapes are illustrated in Fig. 25. No. 1 is a bowl with very little curve in the side, and a

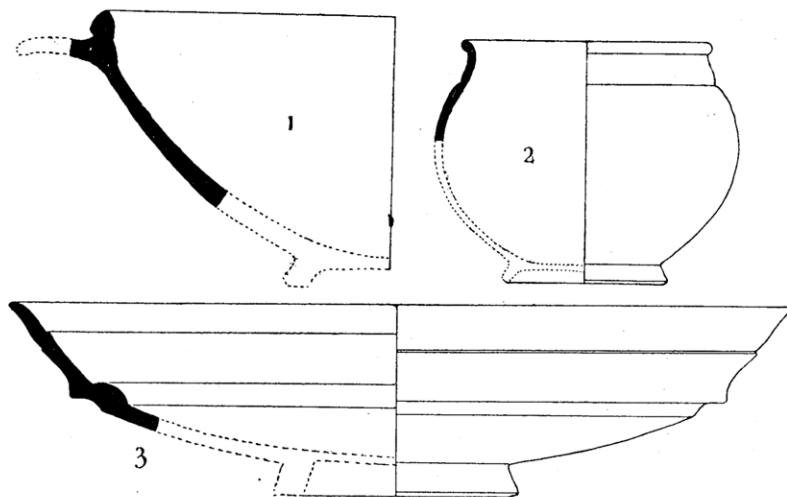


FIG. 25.—PLAIN SAMIAN ($\frac{1}{2}$).

flange which may or may not have borne barbotine ornament. The clay is good and the glaze rather dark. Found in the granary, low level. It somewhat resembles the shape illustrated Wr. 1913, p. 43, and called No. 82; said to be common in the early deposits at Wroxeter and also found at Corbridge and Newstead in the early periods. It "seems to disappear towards the end of the first century." This therefore may be a relic of the first-century occupation.

2. Two specimens of this were found, one in the S. gate, the other in the commandant's house. It is a small globular vessel of fine fabric; the rim is rather like Dr., 72, but the general shape is more like Dr., 76 (both supplementary forms).

3. Good fabric of somewhat early appearance, from the "filling-in" of the granary. The restoration given follows the drawing in Wr. 1913, p. 43, where this type is numbered 83 in the standard series. A Wroxeter example bears the name of Biracillus, a Banassac potter placed by Knorr in the reign of Domitian (Wr. 1912, p. 49), and Mr. Bushe-Fox dates the type to the last quarter of the first century. A form very like this is given by Behn (*Römische Keramik*=Mainz museum catalogues, No. 2, plate x., No. 196). Of the three specimens mentioned by him, one comes from Hofheim (middle of first century) and another bears the name of a potter who worked at Vichy-sur-Allier and La Graufesenque; the third, which was found at Mainz, he places in the Claudian period by analogy with the first. It seems then that this fragment must be dated to the first century.

17.—INSCRIPTIONS.

Stamps on Samian ware. *Figured*:—One fragment with a dolphin, fig. 24, No. 4, and the letters . . . NI, retrograde. See p. 53.

On plain Samian:—(1) LATIATVSF on a 31 of somewhat early appearance, good hard clay and bright glaze: very slight kick in centre. Found in the trial-trench in the N.E. area of the *praetentura*. I have not met with a parallel.

(2) SERVLLIM, last two letters in ligature. The first L doubtless an error for I. Found near the north gate, on a rather large and coarse 33. I cannot find a parallel.

(3) MA| on a 31, very poor soft ware with roulette pattern and high kick. Found in the granary.

Several other fragments were found, of about one letter each.

On mortaria:—(1) COTASO, AS in ligature, retrograde (No. 30, p. 46).



FIG. 26.—STAMPS (1).



FIG. 27.—GRAFFITI (1).

(2) FAVSTINI MANV in good clear lettering on a somewhat early type (No. 26, p. 45).

(3) NSD.B in large clear letters, twice on one vessel (No. 20, p. 43). The first letter is doubtful but is probably a reversed N.

(4) TENGI OF. Rather indistinctly and in poor characters, twice on a very soft heavy vessel (No. 21, p. 43).

(5) . . . AVRI. A double stamp on good hard buff clay but only three letters clear; the first may be an A (No. 31, p. 46).

On amphora :—QMR, the last letter doubtful, might be P or B. For QMR see Papcastle report (these *Transactions*, N.S., xiii., 137), where the same stamp was found retrograde.

Graffiti : on *figured Samian*.—VXP or D on base of 37. The first letter seems to be V and there may be one missing before it.

On plain Samian.— TAR on the under side of a 31, in good hard clay. Found in the granary.

On amphorae :—(1) VIIII on a handle.

(2) SIIA, possibly SITA, on the body of the vessel. The top of the inscription is broken away.

18.—COINS.

Three legible silver coins were found this year, of which Mr. N. C. Dibben's note runs as follows :—

1. *Denarius* (42½ grs.), Faustina II. (wife of Marcus Aurelius, 161-180).

Obv. : head, r. (Imhoof-Blumer, *Porträtköpfe*, plate ii., 41)—

FAVSTINAE AVG PII AVG FIL

Rev. : female figure, l.—

PVDICITIA

Date : ob. 175 A.D. (found in gutter of courtyard, *principia*).

2. *Denarius*, Julia Domna [wife of Severus, 197-211].

Obv. : head, r.—

IVL DOMNA AVG

Rev. : female walking r., apple in l. hand—

VENERI

[Date : ob. 217. Found in room B commandant's house.]

3. *Siliqua* (20 grs.), Valens [associated Emperor 364, sole Emperor 375, ob. 378].

Obv. : head r., diademed—

D N VALENS P F AVG

Rev. : helmeted female seated l., spear in l. hand, victory standing on r. hand—

URBS ROMA (Gnecchi, *Tipi monetari*, plate v.)

Mintmark in exergue TRPS (Trier). Wr. 1913, 494.

Found outside S.W. corner of *principia*. Has been clipped.

An illegible *denarius* was also found, of which all that could be deciphered was the curly hair and wreath of a head r. on the obverse. It appeared to me to resemble that of Commodus. Mr. Dibben supplied the following note on the sestertius of Trajan mentioned last year (A. 1913, p. 461):—

I Æ: 327 grs.: Trajan [98-117].

Obv.: Head r., as Imhoof-Blumer plate ii., 31.

[IMP TRAIANO OPT AVG [G]ER DAC

P[A]RTHICO P M TR P[

Rev.: female figure standing, head turned r., spear in l. hand: globe to l. of feet: S C in field. Providentia Aug. S. P. Q. R. (?)

Date: 116-117. Wr. 1913, 199-201.

Two illegible second brasses were found in 1914.

19.—GLASS, METAL, ETC.

Glass.—A great quantity of window-glass of the usual kind was found, especially in the *sacellum*. Bottle-glass, from the ordinary square bottles with heavy fluted handles, was also common. We also found (1) part of a blue glass bracelet (fig. 32) with yellow streaks in appliqué; (2) part of the lip of a large green beaker, with a rim like that of a Dr. 37 bowl but lighter, and a fine horizontal bead $\frac{1}{2}$ inch down the side; (3) rim of a small probably globular yellow vessel, in shape and size not unlike shape 69 in the coarse pottery (fig. 23) but much thinner, the glass being bent back on itself to form the rim; (4) the foot of a vessel in bright blue cloudy glass. In shape the foot resembles that of the jug in the centre of fig. 53, Ward's *Roman Era in Britain*.

Silver.—One silver spoon was found, in the courtyard of the commandant's house (fig. 29). In addition to the part figured, a

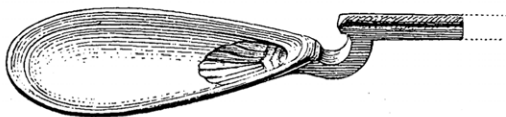


FIG. 29.—SILVER SPOON (†).

piece $1\frac{1}{2}$ inches long of the pointed end of the handle was discovered, showing the whole spoon to have been about 6 inches long.

Iron.—Beside the usual large quantity of nails, bolts, and unrecognisable fragments, we found various implements shown in figs. 30 and 31.

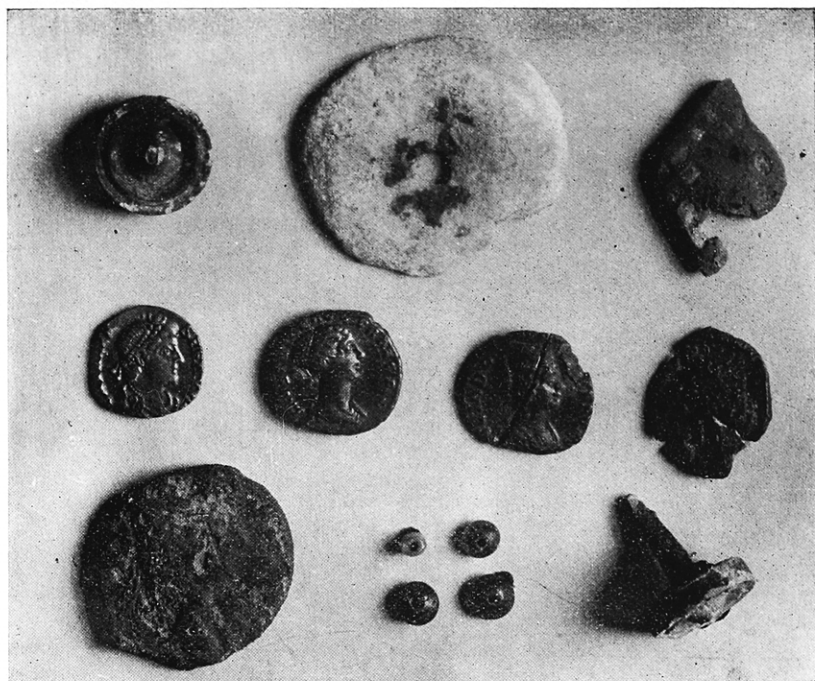


FIG. 28.—COINS, LEADEN DISC, NAILS, ENAMEL, BEADS.

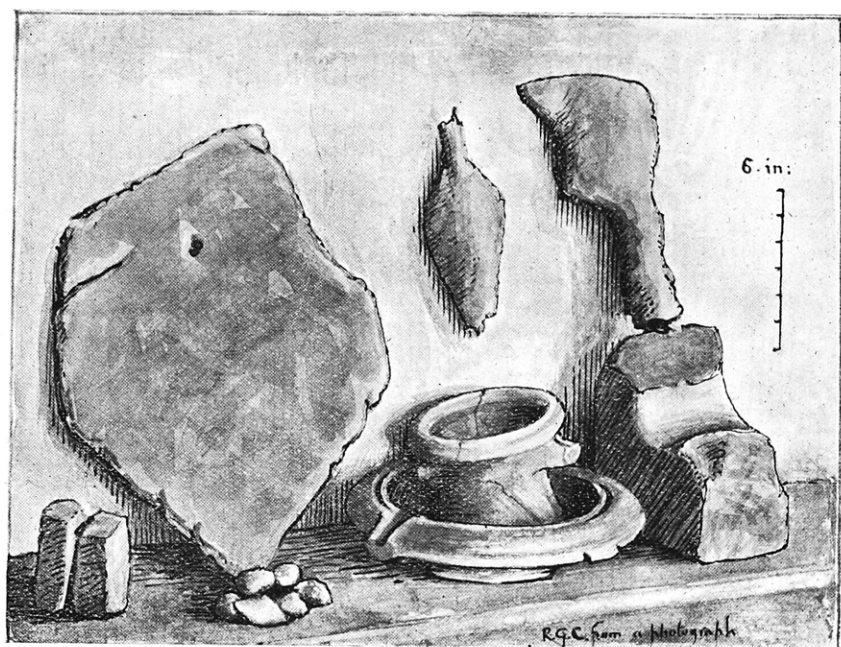


FIG. 30.—SLATE, SPEARHEAD, BILLHOOK,
NET SINKER, BULLETS, POTTERY, MILLSTONE.

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Fig. 30. Spearhead, flat, leaf-shaped. Socketed weapon or implement resembling a billhook.

Fig. 31. Two keys of common types, found in the north-east area. In centre, an object something like the compasses figured in Wr. 1912, fig. 10; the hinge of our example, however, with its separate bolt and linch-pin, is hardly suitable for compasses.

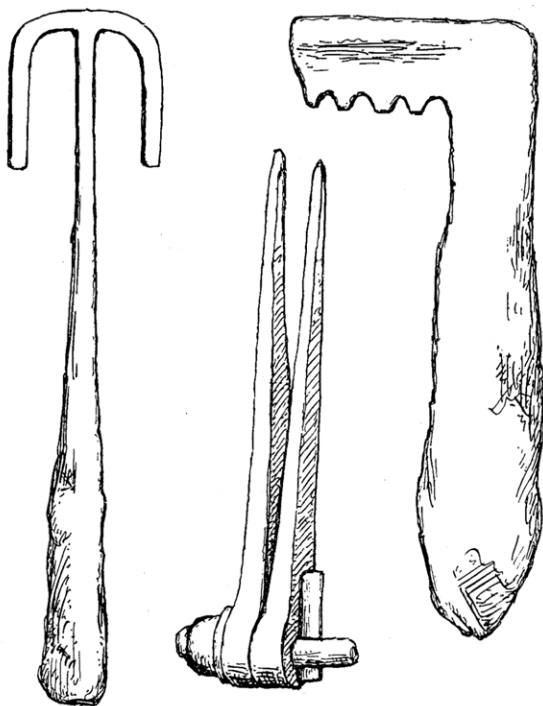


FIG. 31.—IRON OBJECTS ($\frac{1}{2}$).

I am not certain of its Roman date; but the rust has eaten right through the metal, which we do not usually find to have happened in post-Roman objects. We also found two much-corroded tools, apparently mattocks, and, in the north-eastern barracks, the iron cap of a door-pivot.

All iron at Ambleside is very badly preserved owing to the wetness of the site in flood-time.

Bronze: Fig. 32.—The most interesting bronze find was the colander, which is in good preservation, except for the loss of the

middle of its strainer. The two nails with ornamental heads were found on the lower floor of room C of the commandant's house, in a strongly-burnt stratum. The smaller was one of a set of six; of the larger (of the type known as drawer-handles), we only found one. From their position in a deposit of charcoal we supposed that they had been used in the construction or ornamentation of some small piece of woodwork, a box or the like.

Below the larger nail is a lozenge-shaped (rhombus) enamelled stud. It is divided by bronze bars into 25 equal and similar parts, of which the central and corner ones are filled with yellow enamel, and the four adjacent to the centre with brown of a somewhat olive tint; this however is now nothing but powder and may have lost its colour. The remaining sixteen are light bluish-green. These colours are diagrammatically represented in the figure by vertical, horizontal and cross shading respectively. The enamel is also photographed in Fig. 28, as are two of the six small bronze nails.

To the right, in fig. 32, is an object of doubtful use shaped at one end like a pair of forceps and having a hole and slot at the other as if to hinge on a transverse metal bar like the beam of a pair of scales. It was found in the commandant's house, room A, lower floor.

To the left of the colander is a somewhat rough bronze rod of oval section having a ring at one end preceded by a triple-moulded collar; the other end has been bent at a right angle towards the observer and broken at the bend.

Lead.—The remaining object in fig. 32 is a staple-shaped piece of lead, which is perhaps a rivet for mending pottery. The amount of pottery, both Samian and coarse, which we found to have been so mended was very considerable; the specimens belonged indifferently to all periods. For the most part the rivets were of this type, like those used to-day; but two other shapes were found. One is a plain bar of metal, fitting into two saw-cuts exactly opposite each other, one in each fragment; a most unsatisfactory method. The third, apparently designed to correct the deficiencies of the second, is a saltire cross of which two arms fitted into two sawcuts at an angle of about 60° in one fragment, converging at the broken ends, and the two remaining arms into a similar V in the other. The centre of the cross thus lay on the line of fracture. Our example of this type of mending was a very late and soft Dr. 31, in room C of the commandant's house.

Beside various small fragments of sheet lead, we also found seven sling-bullets like those of 1913. A group of these is shown

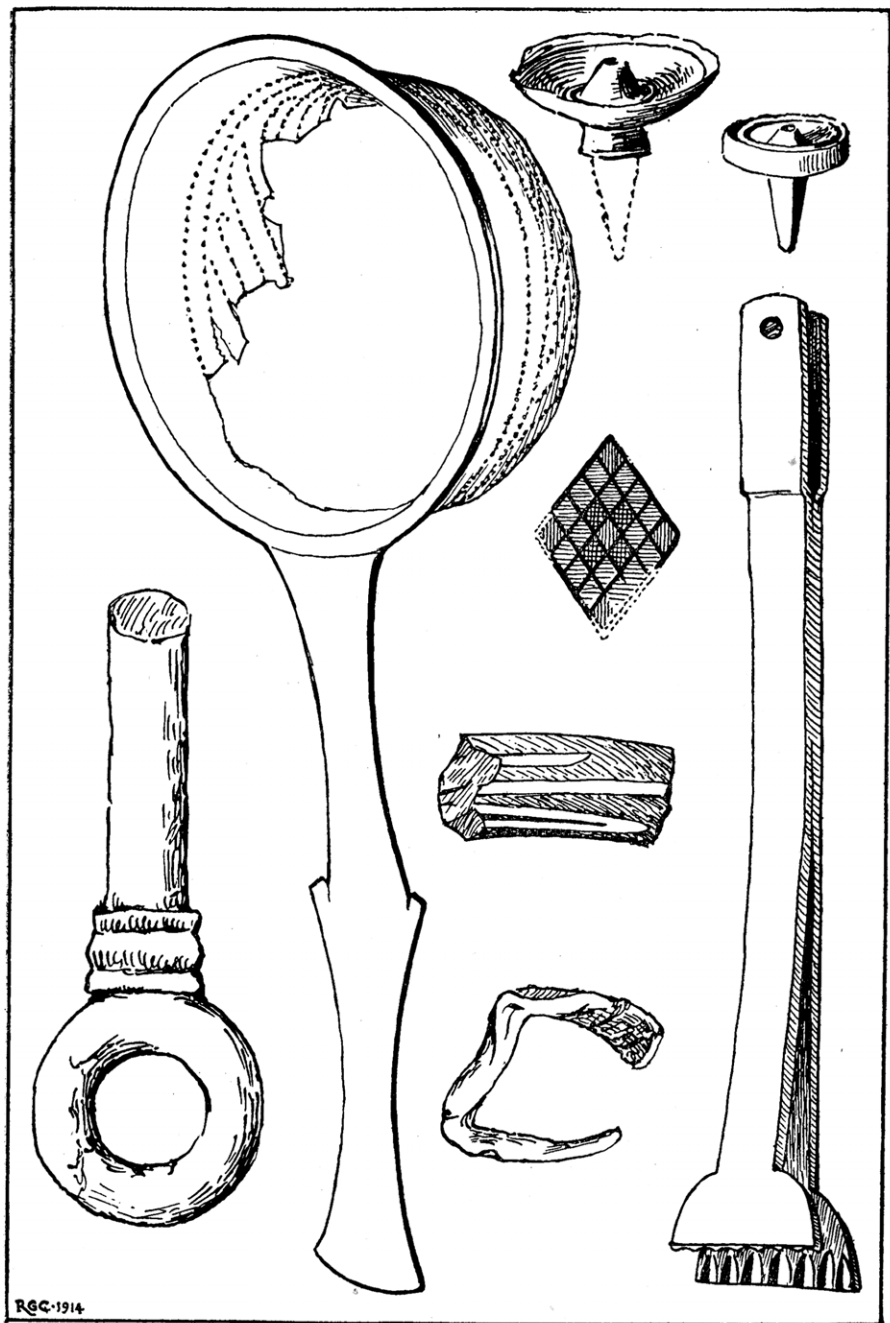


FIG. 32.—COLANDER ($\frac{1}{2}$) AND OTHER OBJECTS ($\frac{1}{3}$).

in fig. 30. One is hammered to a point at either end ; the rest are of the usual shape.

Stone.—We found a number of whetstones, of which about half a dozen were carefully shaped for the purpose, the rest being merely suitable cobbles of local stone, found in the beck or at the water's edge and used to a greater or less extent. Of the former class the best is $2\frac{3}{4}$ inches long and $\frac{1}{2}$ inch thick ; its breadth varies from $1\frac{1}{4}$ to 1 inch. It has been carefully ground to that size and shape, and has been a good deal used on both faces, to sharpen knives and an instrument with a narrow blade like a small chisel.

Another is a small flat stone, nearly $\frac{3}{8}$ inch thick, $2\frac{1}{2}$ inches long and 2 inches broad at one end ; it tapers slightly towards the other end and then terminates in a curved outline inside which is a drilled hole, as if to support the stone by a string. It is ground flat on one side and slightly convex on the other and is made of a close-grained red stone. The only marks of wear which it shows are on the arrises of the square end ; these might be due to sharpening some edged implement on it. On the other hand it does not resemble any ordinary type of whetstone, and in spite of the fact that it came from the Roman level in the north-east area, Professor Haverfield expressed some scepticism as to its being Roman at all. It is perhaps a stone label, not a whetstone.

A stone net-sinker (or loom-weight ?) is shown on the extreme left of fig. 30. It was found in the granary. In the same figure a slate from the granary roof is seen. It is shaped so as to lie on the roof with a corner downwards ; whereas those found in the other two central buildings seem to have had a horizontal edge downwards.

Several fragments of millstones were found, but there is nothing to add to last year's notes on them.

In the cross-court, close to the N.E. corner of the *sacellum*, we found a portion about 6 by 5 by 1 inch of a millstone grit slab, showing on one side a section of moulding. The moulding may have surrounded an inscription ; of which however no fragments have come to light.

Leather.—One shoe-sole, from the ditch opposite the N. gate. Unlike the shoes found last year, this was a military boot of a heavy type and pierced all over with nail-holes.