

I.

NOTES ON THE ROMAN FORTS AT OLD KILPATRICK AND CROY HILL, AND ON A RELIEF OF JUPITER DOLICHENUS. BY SIR GEORGE MACDONALD, K.C.B., F.B.A., LL.D., D.LITT., F.S.A.SCOT.

In the winter of 1930-31, while preparing a new edition of *The Roman Wall in Scotland*, I was impressed with the desirability of doing a little more spade-work with a view to clearing up some points of special difficulty. Accordingly I applied for and obtained the permission of the Carnegie Trustees to utilise for the purpose the unspent balance of a Research Grant which they had been good enough to allocate to me some years ago for a similar object. The immediate problems seemed simple enough. As usually happens, however, they brought others in their train, involving an outlay that exhausted the money available before the end was in sight. When the position was explained to the Council of the Society, they at once agreed to give substantial assistance from the Excavation Fund. A small additional contribution from private sources enabled the enterprise to be brought to a satisfactory conclusion. While a good deal was added to our knowledge of the Wall itself as well as of the Military Way, at various places where their exact course had previously been obscure, it was from the forts at Old Kilpatrick and Croy Hill that the most interesting information came. On both sites the investigations were much more fruitful than I had anticipated, and the results obtained appear to merit detailed description. At the same time it should be understood that the use of the term 'Notes' in the title of this paper is deliberate. In neither case is anything in the nature of an exhaustive 'Report' to be looked for. Rather, the Note on Old Kilpatrick should be regarded as a postscript to the published account of the work done there in 1923-24,¹ while that on Croy Hill may perhaps pave the way for a more thorough-going exploration at some future date.

For leave to open up the ground at Old Kilpatrick I have to thank Major Baird of Lennoxlove, the proprietor, as well as Mr Alexander Mitchell, the grazing tenant, whose patience and good nature seemed inexhaustible. At Croy Hill the amplest facilities were courteously and readily extended to me by Carron Company through their Secretary, Mr C. M. Brown, W.S. Mr A. O. Curle, C.V.O., took an active part in the task of supervision and measurement at both forts, and so in a less

¹ S. N. Miller, *The Roman Fort at Old Kilpatrick* (Glasgow, 1928), cited below as *Old Kilpatrick*.

degree did Mr S. N. Miller at Old Kilpatrick, and Mr D. P. Maclagan and Mr G. P. H. Watson at Croy Hill. But my chief debt under this head is to our Corresponding Member, Mr Samuel Smith, whose constant co-operation was invaluable. Much of the success achieved was due to his sound judgement, his expert knowledge of soils, and above all, perhaps, his determination to rest satisfied with nothing that fell short of absolute proof. Practically the whole of the survey work was carried out as a labour of love by my old friend and helper Mr John Mathieson, F.R.S.E., whose name is a sufficient guarantee of its accuracy. In PLATE IX. his observations have been combined with those embodied in the illustrations to *Old Kilpatrick*, much of the area being no longer accessible. The other drawings used to illustrate the present paper have been made from Mr Mathieson's plans by the skilful hand of Mr C. S. T. Calder, Assistant Architect to the Ancient Monuments Commission, who also surveyed the curious building shown in fig. 12.

During the first stage of the operations at Croy Hill I had the benefit of the experience of Mr John Campbell, who had acted as the Society's foreman at Mumrills. When he was called elsewhere by seasonal engagements, the whole responsibility devolved upon his lieutenant, Mr Alexander Mann, who rose to the occasion splendidly, toiling for several months on end at Croy Hill and Old Kilpatrick, for the most part single-handed, and displaying an intelligent enthusiasm and a power of initiative for which no praise could well be too high.

I. OLD KILPATRICK.

A. *The Relation of the Fort to the Antonine Wall.*

When the exact position of the fort was discovered in 1913, it was assumed that its western defences¹ had been linked up with the Wall in the usual fashion, and in preparing the illustrative map it was taken for granted that the great Rampart, with its accompanying Ditch, had traversed the whole breadth of the field that lay between the London and North-Eastern Railway and the Dumbarton Road.² It was therefore as disconcerting as it was surprising to learn from the Report of the excavations of 1923-24 that "there was a gap between the Ditch of the Antonine Wall and the ditches of the fort," and that this had been "proved by a trench outside the north-west corner which showed unbroken ground."³ What happened to the Wall itself was stated to

¹ The sides of the fort were not strictly orientated to the four points of the compass, the front actually facing a good deal north of west. But the convention adopted by Mr Miller in *Old Kilpatrick* (p. 2, footnote) is convenient, and I propose to follow it throughout.

² *Proceedings*, vol. xlix. (1914-15), PLATE I.

³ *Old Kilpatrick*, p. 6.

be uncertain, although it seemed probable that it "came at least close up to the fort defences."¹ The resulting plan (fig. 1) presented many puzzling features, to account for which a novel and interesting theory

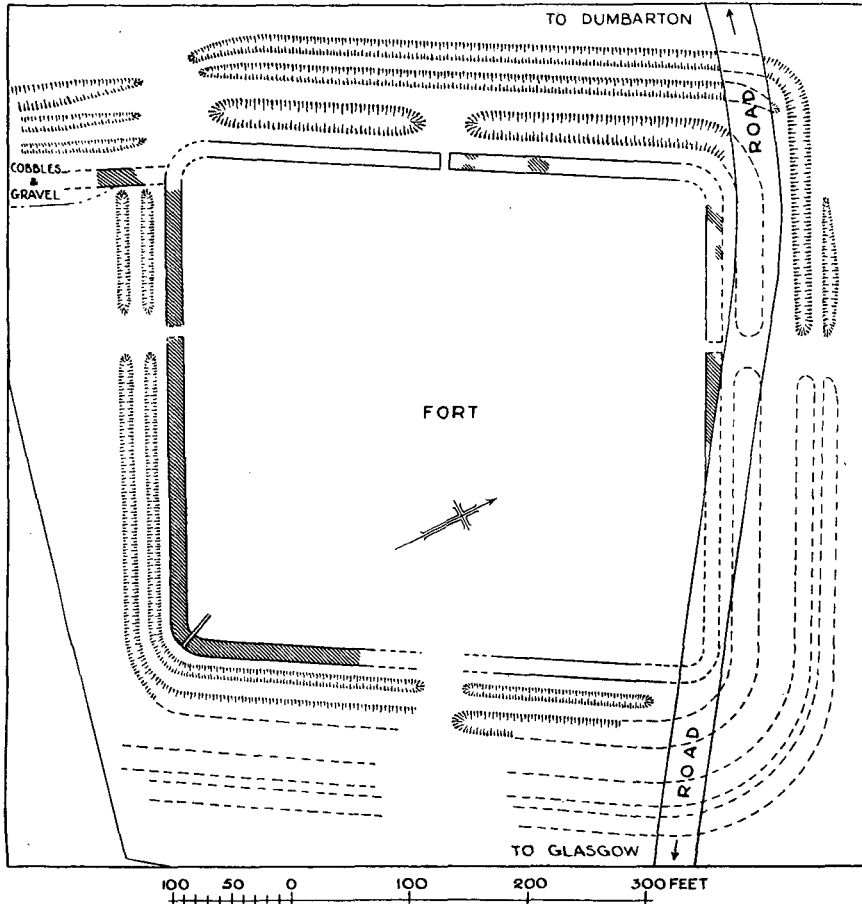


Fig. 1. The defences of the Fort at Old Kilpatrick as reconstructed in the *Report* of 1928.

was put forward. The earliest stage in the Antonine occupation of the site had been, it was suggested, the construction of a great 'harbour-enclosure,' defended on three sides by a double ditch, and having on the fourth side a quay at which were landed stores and material for the troops engaged in building the Wall; the fort was built later, though probably not much later; and the pre-existence of the enclosure explained the apparent anomaly of the gap.

¹ *Old Kilpatrick*, p. 6.

Unfortunately there was no discussion of the fundamental question as to whether the Clyde was navigable at Old Kilpatrick in Roman days. Moreover, despite the ingenuity with which it was developed, the theory had implications which seemed open to serious objections, and knowing something of the difficulties that had beset the excavators I could not help wondering whether the facts had been correctly ascertained. A desire to satisfy myself on this head was the main motive that prompted me to return to the site in 1931. As will be seen from what follows, my doubts proved to be fully justified. But it is only fair to Mr Miller to add that the success which attended the renewed investigations was in large measure due to the comparatively favourable conditions under which they were carried out. Within the decisive area he had been restricted to the digging of "a few trenches,"¹ whereas I was allowed a much freer hand. Had it been otherwise, he and I could hardly have reached such widely different conclusions. In the circumstances there is nothing to be gained by a detailed criticism of his arguments. It will be at once clearer and more convenient to treat the whole matter *de novo* on the basis of my own results.

A day or two's work sufficed to prove that there had been no gap and no enclosure. The Antonine Ditch and the Antonine Rampart were traced right across the field from the railway to the road. The former had, however, shrunk very appreciably in breadth, measuring from lip to lip 25 feet at most, as compared with the normal 40 feet, a change the possible significance of which will be apparent later. The Rampart, on the other hand, seemed to have been of the usual width, and as the stone foundation had been preserved intact for a consecutive stretch of 85 feet there was no difficulty in determining its direction. In a word, the evidence that both Ditch and Rampart had made contact with the defences of the fort was overwhelming, and it was equally plain that in doing so they must have cut right across the line of the supposed enclosure.² Thus far all had been plain sailing. To discover the precise manner in which the junction had been effected was a more troublesome task, requiring the turning over of much soil and a great deal of close observation. That there had been something abnormal about it was obvious from Mr Miller's plan (fig. 1), which showed that the adjacent corner of the fort rampart had been rounded, not square as it usually is in the circumstances. It became still more obvious when the spade revealed a ditch of very peculiar shape running along a line where we had confidently expected to find solid ground.

¹ *Old Kilpatrick*, p. vi.

² From what Mr Miller tells me it seems clear that the failure to find them in 1924 was due to the exploratory trench not having been carried far enough east.

As ill-luck would have it, the very area where we would have most wished to dig was effectually sealed by the modern thoroughfare known as the Dumbarton Road. The position in this respect was bad enough in 1923-24, and since then it had been aggravated by the addition of 10 feet to the width of the highway on the south. Had

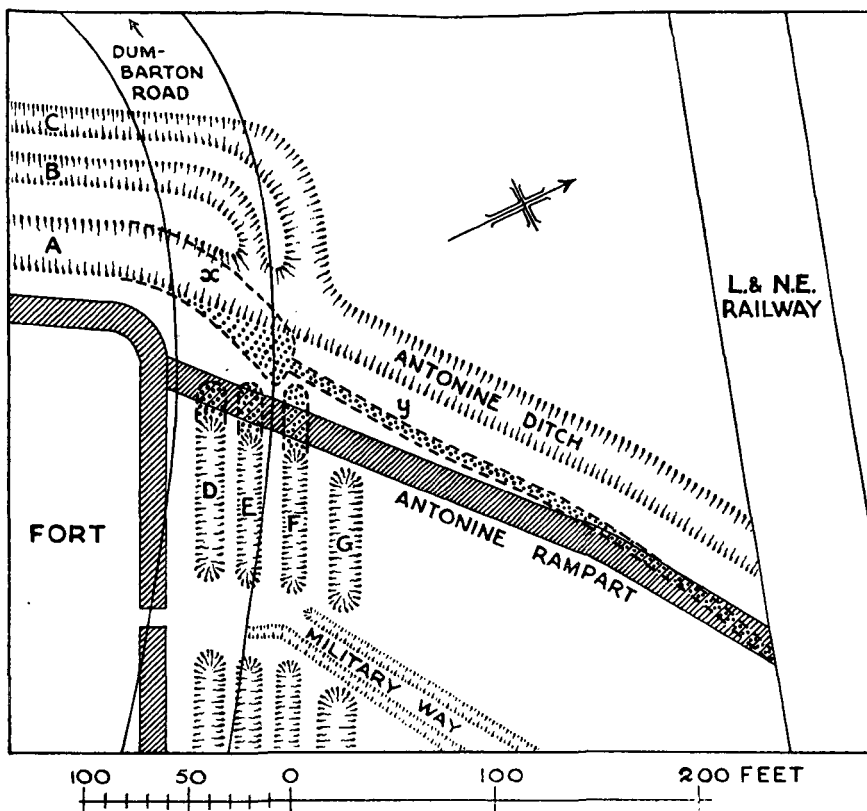


Fig. 2. The north-west corner of the Fort at Old Kilpatrick as uncovered in 1931.

the north side been preferred for the extension, our quest would have been hopeless. The accompanying sketch (fig. 2), which is based upon Mr Mathieson's plan, sets out the data which we were able to make available for a solution of the problem, and at the same time indicates how narrow an escape from oblivion the clue to the labyrinth had when the highway was originally constructed. So far as the ground beneath the road is concerned, the sketch is necessarily conjectural. Subject to that *caveat*, it may be taken as representing the ditches that were actually dug by the Romans. It must not, however; be

supposed that these all belong to one and the same scheme or that all of them were open simultaneously. As a matter of fact it can be shown that two of those which are marked by broken lines (x and y) were abandoned while still in course of construction, and that the various portions which are stippled (including the whole of y) had been filled in before the Antonine Rampart was built.

I will begin with y . Issuing from the end of the rather deeper and much broader x , which projected a few feet beyond the hedge bounding the road on the north, it had been carried at least as far as the railway embankment and doubtless somewhat farther. It had an average width of 7 feet and an average depth of 5 feet. It was not, however, homogeneous. While it became V-shaped as it approached the railway, its sides were vertical for the greater part of the distance. But vertical sides would have no stability and could not possibly have been designed for permanence. The inference that it had been left unfinished was irresistible. The proof of deliberate filling-in in Roman times was no less convincing. It will be seen from fig. 2 that, for the last 40 yards of its course, its line lay wholly or partially beneath that of the Antonine Rampart. Wherever the two coincided, the clean sand, which generally formed the contents of the ditch, had been stiffened by a liberal admixture of boulders, obviously inserted to support the stone foundation which was to be laid above.

From y we can argue to x , with which it was organically connected. The two, indeed, can best be regarded as designed to form a single whole, which I will call $x+y$. Taken together, they furnish an instructive example of a large ditch in process of being excavated. The *modus operandi* was simple and practical. Apparently the line that had been pegged out was divided into a series of lengths and the workmen into gangs. The leading gang cut a V-shaped ditch—in this case 7 feet wide and 5 feet deep—in the first length, and then moved on to deal similarly with the next. They were succeeded by a second gang, who made the sides vertical and the bottom flat, thus providing standing-room for a third, who carried matters a stage further and who would be followed by as many (if any) more as might be required to secure the width and depth that were ultimately aimed at. It is hardly necessary to point out that even the first gang would begin by cutting a vertically-sided trench which they would widen and deepen into the V-shaped ditch on which the gang who came after them were to operate.¹ But it is important to note that the V-shaped section of y was at the side of the field which was farthest away from the river, and that there

¹ In all probability they would leave a flat strip at the bottom both for their own convenience and for the convenience of their successors.

was therefore no room for doubt as to the direction in which work was proceeding at the moment of abandonment. The diggers had started from the fort.

When y was brought to a standstill, it was obviously to A, or rather to the prolongation of it which merged into the Antonine Ditch, that the energies of the workmen were transferred. As the stippled portion of x lies clear of the line of the Antonine Rampart, there was no direct evidence of its having been deliberately filled in. Nevertheless it is impossible to believe that its blunt and irregularly-shaped end would have been left hanging, as it were, in the air. Moreover, if the full breadth of x and the prolongation of A had remained open, the presence of such an extensive hollow in the immediate neighbourhood of the rampart might well have proved an embarrassment rather than an aid to the defenders. It is thus more than likely that, when the plan for $x+y$ was given up, x received the same treatment as was accorded to y , the only part of it to be spared being that which could be turned to profitable account in the prolongation of A.

The remaining ditches that go to form the complex included in fig. 2 can be dealt with more briefly. The outermost of the four on the north (G) is clearly later than its companions, the cutting of which must have preceded the building of the Antonine Rampart. Personally I believe it to be much later, and I further believe (for reasons that will be explained in the sequel) that B and C on the west front were contemporary with it. I therefore propose to leave these three out of the picture in the meantime. A glance at fig. 2 will reveal the story of the others. D, E, and F had all been completed, and their eastern and central parts continued to fill a place in the defensive system of the fort until the close of the occupation. Their western ends, however, had been deliberately filled in, exactly in the same manner and apparently at the same time as y had been. That this was what had happened was conclusively demonstrated by our examination of F, the only one of them which was still accessible. Although the Antonine Rampart itself had vanished, the clean sand with which the hollow was packed had been stiffened with large boulders just where the track of the stone foundation must have crossed it.

Precisely how far east the filling of these ditches had extended it is impossible to say with certainty. Working in the dark, as we were, we did not look for any dividing line, and, even if we had realised the desirability of doing so, it is extremely improbable that we should have found it, as the earth had been already turned over during the operations of 1924. Accordingly it is to be understood that the eastern limit of the stippling in D, E, and F is conjectural. But the margin

of possible error is negligible, for we may safely take G as an index and assume that, when it was dug, its length was determined by the already reduced length of the three ditches which lay between it and the rampart of the fort. No similar reservation is necessary with regard to the western limit of the stippled area, since the original termination of F was quite definitely located by the spade. Reference to fig. 2 will, however, show that this opens the way to a very important deduction.

It will be observed that F, which was completed, encroaches upon ground which would have been absorbed by $x+y$, if the latter had ever been finished. This can only mean that it was dug before $x+y$ was contemplated. It is inconceivable that it should have been dug after $x+y$ was abandoned, seeing that its western end and y were both filled in at the same time and for the same reason—because they barred the passage of the Antonine Rampart. This again implies that F and y belong to two different schemes, that of which F formed part being the earlier; and, further, that these two schemes were ultimately superseded by a third, which is represented by the Antonine Rampart and Ditch. At first sight we seem to be confronted by a confused and confusing medley; but, if a firm hold be kept of the key which our analysis of the evidence has forged, it will be found that the puzzle will practically solve itself, and that the result will be to throw some new and unexpected light on the story of the Wall. The point to be stressed is that the ditches which appear in fig. 2 fall into four distinct groups, each of which is associated with a different scheme. I have already indicated that the latest group, consisting of B, C, and G, can more appropriately be discussed at a subsequent stage. The others I will deal with now.

To understand the sequence of events, we must remember that, while the great barrier with its supporting *castella* constituted a single whole, the unity which it embodied was a unity of conception rather than a unity of execution. The forts were in all probability erected by the auxiliary regiments, each by the body of men which was afterwards to be stationed in it as a garrison. The Antonine Rampart, on the other hand, as we know from the inscriptions, and presumably also the Antonine Ditch and the Military Way, were constructed by detachments drawn from the legions. Nor is it irrelevant to add that in carrying out their task the legionaries appear to have advanced from the Forth to the Clyde, not from the Clyde to the Forth. This view as to the direction which they followed was originally an inference based on the epigraphic record;¹ but it will, I think, be found to be

¹ See *Journal of Roman Studies*, xi. pp. 1 ff.

abundantly confirmed by the structural evidence which Old Kilpatrick has provided. In any event, the two sets of workmen would be bound to come into contact with one another at the forts, of which there were nineteen, and there must have been some sort of regulation governing the *liaison* that was to be maintained between them there. Apparently, however, it did not go beyond a general instruction to the effect that, to such an extent as might be possible, the Antonine Rampart and the Antonine Ditch were to be utilised as the defences of the main front of the *castella*. So far as our information goes, the only fort at which this rule was disregarded was Bar Hill.

It would be easy enough to give effect to the idea where the stone foundation of the Rampart was laid, and the Ditch dug, before the defences of the fort were completed, as there is good reason to believe was the case at Rough Castle and Croy Hill. On the other hand, difficulties would be almost bound to arise where the fort-builders had finished the 'lay-out' before the legionaries arrived upon the scene. That, I feel sure, must be the explanation of two anomalies which cannot fail to strike anyone who studies the plan of Balmuildy (fig. 3)—the abnormal narrowness of the Ditch where it passes in front of the fort, and the curious wing-like ends that project from the northern corners of the Rampart. This section of the Ditch was quite clearly the work of the fort-builders, for its breadth corresponds to the breadth of the other ditches which they dug. As for the Rampart, the fact that it was of stone made a difference inevitable. But, while the squaring of the corners shows that a junction with the Antonine Rampart was contemplated, the projections that were thrown out to meet it prove that it was not yet in sight. The projection on the east was useless: witness the way in which the legionaries tucked the stone foundation in behind it. That on the west was worse: it was laid on a line which betrays entire ignorance of any intention to carry the Antonine Rampart across the Kelvin.

At Old Kilpatrick, too, the legionaries were outstripped by the fort-builders. Hence the comparative narrowness of the ditch which I have called A (fig. 2), originally the only ditch on the main front of the fort. Hence also the rounding of all four corners of the rampart, as if the *castellum* were to be an isolated unit. It would be a mistake to interpret the latter feature as implying that the Antonine Rampart was not expected; it merely implies that it was not yet there. Had the fort rampart been of stone, as at Balmuildy, the two outer corners would undoubtedly have been squared; but it was of turf, and square corners in that material could not have been trusted to stand secure, so long as they lacked support. In point of fact, convincing proof that the

Antonine Rampart *was* expected, although not along the route by which it eventually arrived, is furnished by D, E, and F. In their original form these ditches belong, like A, to the earliest of the four

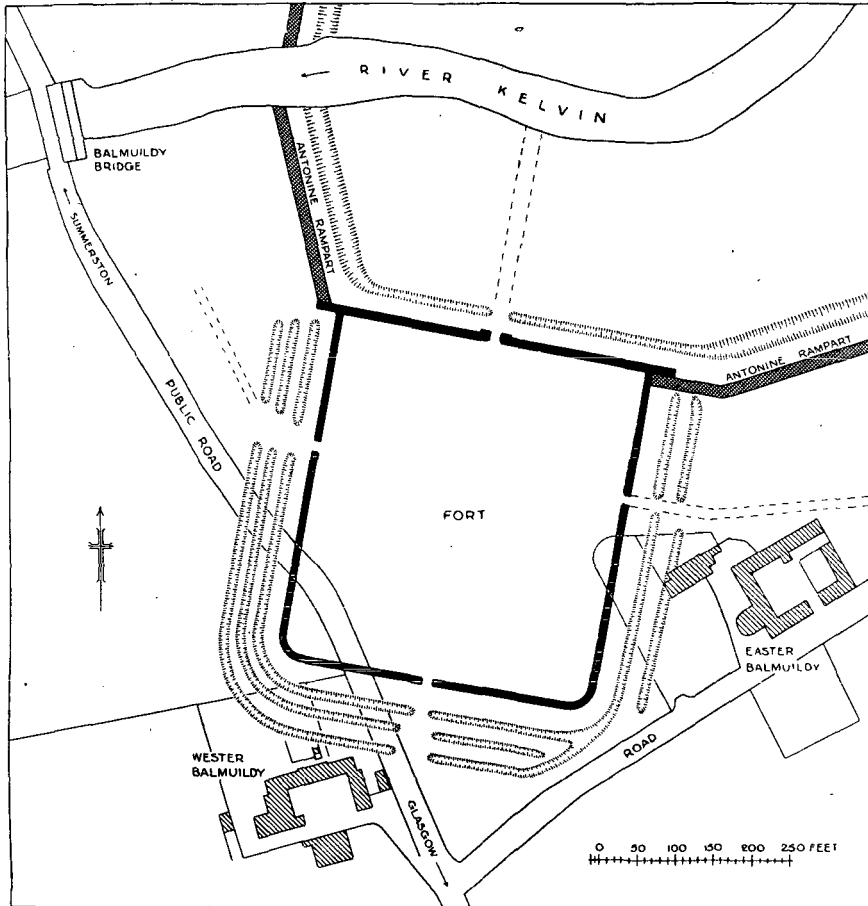


Fig. 3. The Fort at Balmuildy, showing its relation to the Antonine Rampart and Ditch.

schemes of which I have spoken, and the application of a pair of compasses to fig. 2 will show that ample room was left for the passage of a 14-foot rampart between their western ends and what would have been the inner margin of a ditch running in strict alinement with the ditch in front of the fort. Fig. 2, of course, represents the north-west corner, but the arrangement at the south-west corner was similar. Fig. 4 shows the main front of the *castellum* as I believe it to have been laid out in accordance with what I will call Scheme No. 1.

But Scheme No. 1 was not destined to come to fruition. The legionaries tarried or were unavoidably delayed, and someone in authority grew impatient. Consequently the fort-builders were called on to do more than their proper share. Either "*causa disciplinae*"¹ or because he had been told that the work was urgent and must be pushed on as rapidly as possible, their commandant arranged that they should set out to meet the Wall-builders, who were approaching from Duntocher. The outcome was not altogether happy. Scheme No. 1 had to be modified at once. The orientation of the *castellum* had not unnaturally been determined by the line of the river rather than by the line of the

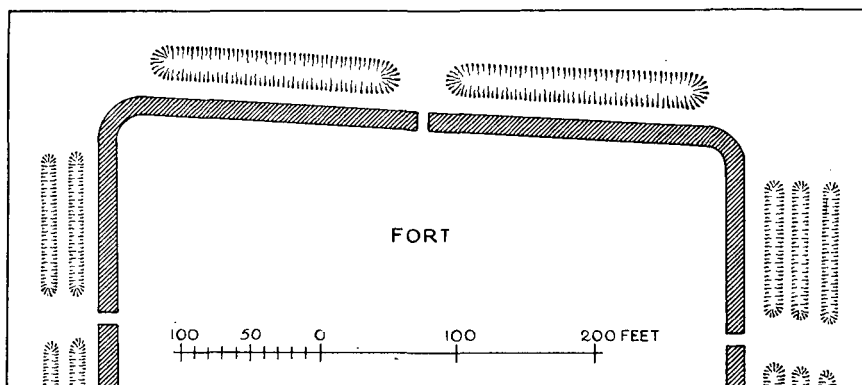


Fig. 4. The west front of the Fort at Old Kilpatrick as originally laid out.

Wall, which was not yet in existence. Accordingly, when the prolongation of the ditch in front came to be faced as a practical proposition, it was seen that its direction was unsuitable. If A had been carried straight on, the diggers would speedily have found themselves on the slopes of the Kilpatrick Hills, and would never have met their comrades at all. Plainly a decided trend towards the right was required.

Fig. 2 shows that the realisation of the need for a change brought with it too violent a reaction. In Scheme No. 2 the prolongation of A was to sweep round on a curve (*x*) almost as pronounced as that which had been given to the rampart, and was then to swing north-eastwards (*y*) more or less straight across the field. The first effect of this would have been to wipe out the western end of F. That was a comparatively small matter, and must have been reckoned with when the plan was evolved. But there would have been a far more awkward sequel. The Antonine Rampart would have abutted upon the rampart

¹ Hyginus, *De Mun. Castr.*, c. 49; cf. Tac., *Ann.* xi. 20 ("ut miles otium exueret").

of the fort, not in the neighbourhood of the corner, but about midway between the corner and the north gate, an arrangement so unsatisfactory that it almost looks as if for the moment the impending advent of the Antonine Rampart had been entirely forgotten. Whether that be so or not, it is beyond doubt that the fort-builders were responsible for the blunder. I have already pointed out that the evidence provided by the change in the shape of the sides of y is conclusive as to the direction in which the digging was being done.

Not much time can have been wasted on Scheme No. 2, for the amount of labour that has been expended on $x+y$ hardly exceeds what could have been accomplished in a day or two by such a number of men as could readily have been requisitioned. Nevertheless, if it were urgency that led to the aid of the fort-builders being enlisted, it is easy to imagine the explosive indignation of the 'brass hat' who discovered the mistake that rendered the scheme abortive. In Scheme No. 3, which represents the next stage, the temptation of making the shape of the fort ditch conform to that of the fort rampart was successfully resisted, A being prolonged on a curve at once slighter and shorter than had been designed for x . Except in so far as it could be adapted to the altered plan, the latter was now filled in, as were the western portions of D, E, and F, as well as the whole of y . This allowed the Antonine Rampart to be brought up to the rampart of the fort along the line indicated in fig. 2. That was in all probability done by the legionaries. The prolongation of A to the railway embankment and beyond we may suppose to have been the work of the garrison, who had the bungle of $x+y$ to atone for. And herein, I think, lies the explanation of the abnormal narrowness of the section of the Antonine Ditch between the road and the railway. The men who dug it took their cue from the breadth of the fort ditch, which was their starting-point. That the suggestion is not fanciful one is clear from what happened in the case of the Military Way, about which also we obtained some interesting information.

B. *The Military Way.*

Several cross-cuts made opposite the north gate revealed the existence of two small trenches, ranging from 7 to $5\frac{1}{2}$ feet in breadth and sometimes as much as $2\frac{1}{2}$ feet deep. As they were running parallel to one another at a distance of 10 or 12 feet, it was conjectured that they must have been the gutters flanking the Roman road, and the correctness of the surmise was established when, on following them outwards, we encountered the remains of heavy

cobbling between them. By this time they had swung very decidedly to the right (PLATE IX.) and were heading for the railway bridge at the north-east corner of the field, thus proving that, in the journey which all three had to make from Duntocher, the Military Way had forsaken the high ground a good deal sooner than the Antonine Ditch and Rampart had done. It will be observed from the plan that the more easterly of the two gutters emerged from beneath the Dumbarton Road. It seems not unlikely that it had run all the way from the gate, where it may have been connected with a gutter within the fort. Its companion, on the other hand, started opposite the end, not of the outermost, but of the third of the four ditches by which the north front was defended—a small peculiarity perhaps, but one which we may by and by see reason to regard as significant.

Two other features call for remark. In the first place, the trenches were unexpectedly wide: so far as I have noted, the provision for the gutters is nothing like so generous anywhere else on the line. In the second place, the room allowed for the road was exceptionally small: the Military Way is usually from 16 to 18 feet wide. That the second of these features was primarily due to the proximity of the fort will be obvious when it is pointed out that the gate-posts at the entrance were only 10 feet apart. At first sight it is harder to understand why the narrow gauge should have been persisted in long after there was abundant room for expansion. But the lesson taught by the north-west corner makes the solution easy. Here again the fort-builders have been sent forward to meet the legionaries, and here again they have taken their cue from the conditions that prevailed at their starting-point. Striking confirmation was supplied by the cobbling. Fragmentary as it was, we found that it had extended well beyond the inner margin of the more northerly of the two gutters, so as partially to cover the trench. It is clear that as they approached from the north-east the legionaries, who were the real roadmakers, had disregarded the limits that had been marked out for them by their less skilled fellow-soldiers, and had given the Military Way a breadth approximating more closely to the normal. It is a curious example of imperfect co-ordination such as one would hardly have looked for in a well-regulated army. Lack of experience, then, accounts for the unusually small space that was left between the gutter-trenches, and it may be to the same cause that their unusually large size should be attributed.

Although a certain amount of anticipation will be involved, it is desirable to add a word or two as to the course taken by the Military Way after it disappeared beneath the Dumbarton Road. That it entered the north gate is certain, and it is no less certain that it

traversed the fort as the *via principalis*, passing in front of the Headquarters Building (PLATE IX.). Issuing from the south gate, it led into an annexe which lay between the fort and the river, for that there was an annexe here may confidently be inferred from what we know of the position of the suite of Baths discovered during the construction of the Canal in 1790. Whether the road ran direct to the Baths, or whether it merely sent off a branch in their direction, it is perhaps impossible to say with certainty.¹ In any event, however, there can be little or no doubt that it presently reappears in a most unexpected place, and that at one period in its history, seemingly when it was originally constructed, it had continued beyond the fort for some distance down the river. To those unfamiliar with the Roman frontier-system it may appear strange that the Military Way should have been carried out into the country beyond the official boundary. It was, however, quite in accord with ordinary practice. Thus, it is well known that between Falkirk and Rough Castle there was a gate in the Antonine Rampart, giving egress to a road leading to Camelon and beyond. Similarly, roads ran northwards from Hadrian's Wall to outposts like Risingham and High Rochester on the east, Bewcastle and Netherby on the west. Postponing in the meantime any question as to the object of the continuation at Old Kilpatrick, or as to the reason why it had been abandoned, let us see what is the evidence for its existence.

Readers of *Old Kilpatrick* will remember that, when Mr Miller examined the surviving portion of the extension of the Antonine Rampart, which stretched from the south-west corner of the *castellum* towards the Clyde, he made the surprising discovery that beneath it were the remains of a cobbled road. That this road had run from east to west, and not from north to south, was clear from the fact that it was found again in the opening between the western ditches (fig. 1). That it had been intended to carry heavy traffic is proved by Mr Miller's description. He says that within the gap which separated the ditches the compacted gravel "was beaten so hard that, when the pick was used upon it, it came away in lumps, like a concrete."² No ordinary street would have been given a surface so solid. Recognising this, Mr Miller proposed to explain it as a special feature of the 'harbour-enclosure,'—the thoroughfare along which stores and material, unloaded at the quay, would be transported beyond the defences for distribution to the workers inland. But the spade has taught us that

¹ The direction followed by the line of cobbles and gravel outside the south-west corner of the fort (PLATE IX.) favours the former alternative.

² *Old Kilpatrick*, p. 7, footnote 3.

there was no enclosure, and we shall presently learn from the history of the river that there cannot have been a harbour. We have perforce to seek for some other interpretation, and I can think of no satisfactory hypothesis except the one I have suggested.

C. *The Ditches of the Fort.*

Even before our examination of the north-west corner (fig. 2) had been completed we realised that the new facts, which were coming to light there, would necessitate a drastic amendment of the view of the ditch-system which is set forth in fig. 1. So far as concerned the south front, and also so far as concerned that part of the west front which lies to the south of the Dumbarton Road, there was no difficulty in accepting Mr Miller's statement of the evidence, for in these areas he had elbow-room to ply the spade.¹ Elsewhere it was different. On the east front he dug only to the south of the Dumbarton Road, where he was grievously hampered by building operations and where his plan consequently involves a very substantial element of conjecture. Here we were in even worse case, for everything is now smothered beneath houses, gardens, and roads. But the superior advantage which we enjoyed along the whole of the north front extended to the north-east corner of the fort, and there we were able to obtain some valuable information, thanks to the latitude kindly allowed us by the proprietors of the large garage which has been erected at the east end of Mr Mitchell's field and by the tenant of the poultry farm beyond. Fig. 5 depicts what I believe was the final phase of the fort's defences. It will be seen that on all sides except the south the contrast with fig. 1 is striking.

So far as the main or west front is concerned, it will be sufficient to refer to fig. 2, which covers the only portion where the difference between the two plans is vital. Indeed, in view of the length at which that illustration has already been discussed, there is nothing more to be said about the north-west corner as a whole. As regards the remainder of the north front, however, it is desirable to state explicitly

¹ It is worth mentioning that in the latter of the two areas we dug several trenches in order to determine the exact point at which each of the ditches vanished beneath the widened roadway, and that our results tallied fairly closely with those embodied in Mr Miller's plan. The amount of adjustment required to bring about complete accord was hardly greater than was to be expected in the case of two surveys carried out in different circumstances and by different hands. I suspect, however, that his surveyor may have been misled by appearances when he gave the ends of the three ditches south of the opening the irregular and attenuated shape which they wear in fig. 1, and which is quite unlike ordinary Roman work. Unfortunately I omitted to put the matter to the test in 1931. Nevertheless in my own plan I have ventured to represent them in more conventional form, largely because digging compelled us to make a correction of the kind in the closely analogous case of the outermost ditch at the north-west corner (G in fig. 2).

that all the four ditches shown in fig. 5 were actually found. The innermost lies almost entirely beneath the Dumbarton Road and the approaches to the garage (PLATE IX.), but we had the luck to hit upon it in the very first cut which we made within the restricted space where excavation was still practicable. The one next to it is buried under the

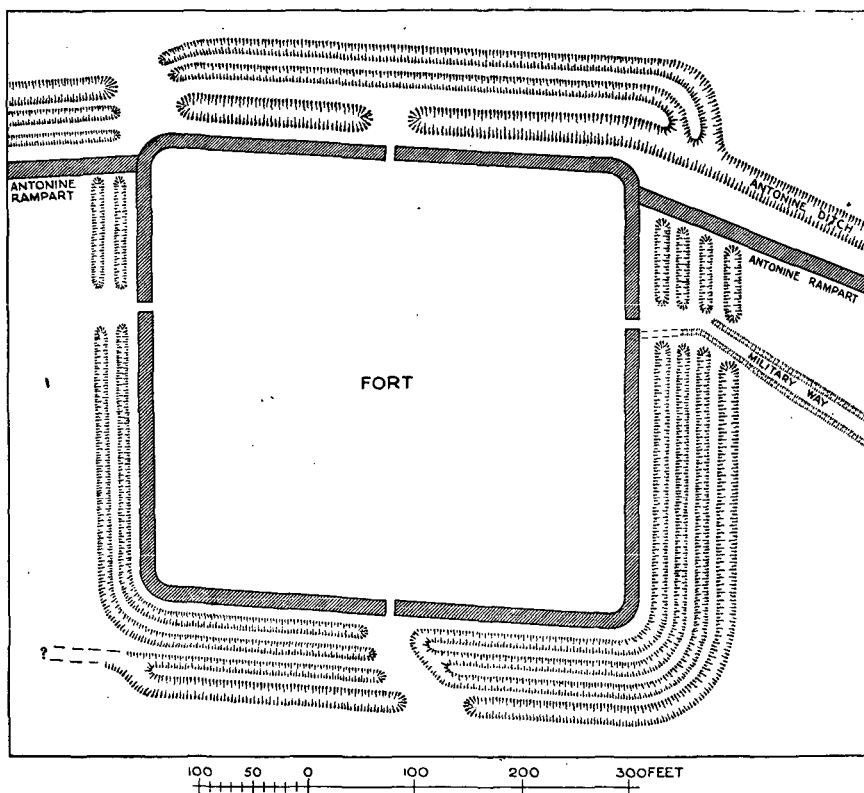


Fig. 5. The defences of the Fort at Old Kilpatrick in their final form.

road from its western end as far as the fort gate. Beyond that we were able to trace it right through the field until it entered a forbidden area within the garage enclosure. The two outer ditches were followed all the way to the garage from the north-west corner (fig. 2). The garage had been built astride of them, but on the farther side of it we succeeded in exposing the rounded corners of both, just as they were starting on their southward journey. It thus became possible to utilise their evidence for the conjectural restoration of the eastern part of the ditch-system, and for that they provided a much more satisfactory

basis than was at Mr Miller's disposal. He had nothing to guide him but the 'harbour-enclosure' theory, which was positively misleading, whereas we knew the number of ditches that had turned the north-east corner, as well as the dimensions and either the exact or the approximate position of each of them.

If fig. 1 be looked at carefully it will be apparent that the only ditch on the east front about which anything approaching complete information was forthcoming in 1923 was that which is nearest to the rampart, and it is significant that its line coincides generally with the line that has been assigned to the corresponding ditch in fig. 5. It is true that it is represented as coming to an abrupt end before reaching the north-east corner; but in this respect I cannot accept fig. 1 as final.¹ That the innermost ditch of a fort should behave in the fashion suggested is in itself improbable, and the fact that both in size and in distance from the rampart it agrees with the innermost ditch which we found on the north makes a breach in the continuity of the two in the highest degree unlikely. It may, I think, be taken as certain that, just as at the south-east, so also at the north-east the ditch passed round the corner. A more difficult question is raised by the second of the ditches that appear in fig. 1. Its abnormal breadth of 24 feet forbids its identification with any of the four ditches which we found to the north of the Dumbarton Road, and, moreover, even on the showing of fig. 1 itself, it necessitates a sudden and inexplicable narrowing when the south-east corner is approached. Yet an actual breadth of 24 feet is vouched for by a section.² Is there any means of escape from the *impasse*? I think there may be.

If the text of the Report be referred to, it will be seen that the whole length of this ditch has been laid down on the evidence of a single cross-section, cut from the rampart outwards about 40 feet north of the gate. To determine the breadth and course of a ditch by a single cross-section is always a hazardous proceeding, but in this case it was probably unavoidable, as Mr Miller was working, almost literally, in the builder's yard. The tentative reconstruction embodied in fig. 5 provides a simple and natural explanation of the apparent contradiction between the results of 1923 and those of 1931. On issuing from the gate the road would incline towards the north, as its immediate objective would be the establishment of a connection with the Military Way. The ends of the second and third ditches on the left-hand side

¹ In reply to an enquiry Mr Miller wrote: "Alongside the high road on the north, any trench outwards from the east rampart towards the ditches had to be a short trench, hurriedly cut, and filled in at once, without any possibility of its being re-opened." In the light of the evidence from the north-east corner, he now agrees that the ditch must have been continuous.

² *Old Kilpatrick*, p. 4, fig. 2, section C-D.

would consequently be pushed back, exactly as was proved to have been the case with the ditches on the right-hand side of the Military Way itself when it leaves the north gate (PLATE IX.). If we assume that they were looped, after the manner indicated in fig. 5, and assume further that Mr Miller's cut started at a point which would carry him first across the innermost ditch and then across the part of the loop joining the two ditches beyond, we get precisely such a section as is reproduced in his illustration. Nor would looping of the kind be in any way unusual. We find it, for instance, on both sides of the east gate at Mumrills, on the north side of the west gate at Rough Castle and Croy Hill, and on the south side of both east and west gates at Castlecary. The parallel from the east gate at Castlecary is indeed extraordinarily close.¹

The suggestion just advanced is, of course, a hypothesis only. Furthermore, it must in the nature of things remain unverified, this part of the site being buried beyond recall. I ought, however, to say definitely that, while its adoption offers an easy way of reconciling Mr Miller's observations with my own, its rejection would leave unaffected my conviction that the four ditches which passed along the north of the fort passed also along the east. On that head the evidence from the neighbourhood of the garage and from the poultry farm appeared to be conclusive. As to the rest of the east front, there was nothing to indicate that there had been loops on the south of the gateway, and it may be pointed out that, where looping does occur, it is as a rule on one side of a road only. Hence the manner in which the ditches have been treated in fig. 5. As to the further course of the two inner ones, there is no room for difference of opinion. Mr Miller ascertained that, on reaching the corner, they wheeled westwards and ran along the south front of the *castellum* to within a short distance of the extension of the Antonine Rampart. He also ascertained that there were no other ditches on that side. The ultimate fate of the two outer ones is thus problematical. But, unless the third of the group of four united with the second, just as the corner was turned, it may very well have been carried straight on to the river, serving *en route* as the eastern defence of the annexe. In that event I am disposed to think that the fourth joined up with it before it quitted the precincts of the fort. This brings us to a point at which it becomes desirable to collate the various pieces of evidence suggestive of changes in the ditch-system as a whole.²

¹ *Proceedings*, vol. xxxvii. (1902-3), PLATE I.

² Perhaps I ought to explain why I have omitted from the body of the Note any reference to the hollow which Mr Miller was inclined to regard as the remnant of an Agricolan ditch. While I am at one with him in postulating a Flavian occupation of the site, I find it hard to believe that

On the north front the situation is plain. The three inner ditches were cut first, and the fourth or outermost is a later addition. Ample proof of this is furnished by fig. 2, which shows that the fourth takes full account of the presence of the Antonine Rampart, while the others ignore it completely. Confirmation comes from the gateway. Had all four ditches been there when the construction of the Military Way was begun, the more westerly of the two gutter-trenches would have started from the end of the fourth, instead of from the end of the third as it actually does (figs. 5 and 6); and what is true of the north front must also be true of the east, since the ditches on the two sides were continuous. In other words, the outermost of the eastern ditches is later than the three inner ones; that is why it has been excluded from the looping arrangement in fig. 5. On the west the position is different. None of the ditches there has any connection with the ditches on the adjacent sides, and they have therefore to be looked at independently. It is fairly obvious that they fall into two groups, the first consisting of an inner ditch, which is broad and has an opening opposite the fort gateway, and the second consisting of two outer and narrower ditches, neither of which is interrupted by any break whatsoever. The difference to which attention has been drawn is important as indicating that the two groups are not contemporaneous. But, if they do not belong to the same period, the first is unquestionably the earlier. Our examination of fig. 2 showed that it was there from the outset.

Leaving the additions out of account for the moment, let us glance at the ditch-system as it was in its original form. Fig. 6 represents the defences of the fort after the initial bungling at the north-west corner had been remedied, the superfluous ditches or parts of ditches filled in, and a proper relationship established with the Antonine Rampart and Ditch. It will be observed that there is a single ditch in front, as is invariably the case with the other *castella* which abut on the Antonine Rampart, three ditches on the north and east, and two ditches on the south. Comparison with fig. 5 is instructive. In the final phase two ditches have been added on the west front, one on the north and one on the east, only the south front being left as it was. That the various additions were made simultaneously seems certain, especially if we connect this strengthening of the defences with another change which has already been noticed—the barring of the passage

a hollow of the shape shown in his section (*Old Kilpatrick*, p. 4, fig. 2, E-F) could have been part of the ditch of a fort. His interpretation of the 'stratified structure' as a rampart seems scarcely more convincing. Moreover, if his tentative reconstruction (*op.cit.*, pp. 13 f.) were sound, it would bring the Agricolan ditch, if not also the Agricolan rampart, well within the limits of the field on the north of the Dumbarton Road. Yet in all our trenching there we encountered nothing remotely resembling either.

for the Military Way outside the south-west corner. The taking of such elaborate precautions admits of but one interpretation. Danger threatened from the west.

A word or two may be added as to the manner in which the exit for the road was blocked. It is not easy to be quite confident about it in the absence of definite knowledge as to the original opening.

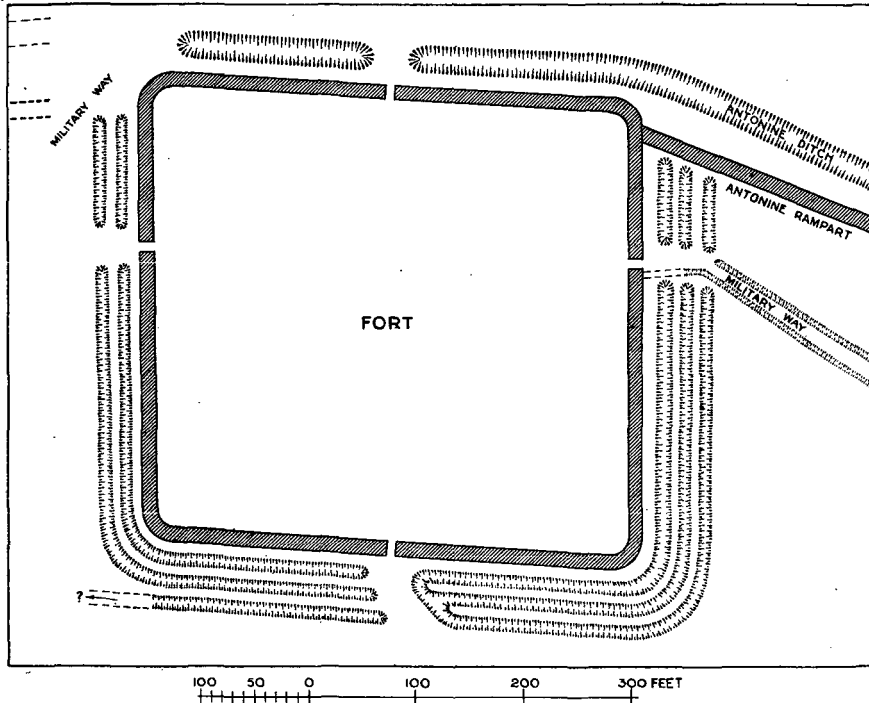


Fig. 6. The defences of the Fort at Old Kilpatrick as first completed.

But the analogy presented by the eastern termination of Hadrian's Wall at Wallsend¹ suggests that the Antonine Rampart was continued from the southern edge of the Military Way as far as the river. If so, it may be taken for granted that, as elsewhere, there was a single ditch in front of it, the two together serving as the western defence of the annexe. To judge from its width, this ditch was probably the outermost of the three whose ends appear in fig. 1, the two narrower ones being added when the defences of the fort were strengthened. The end of the innermost must certainly represent an addition, since it was actually cut into the road, the cobbles and gravel of which showed on its outer as

¹ *Northumberland County History*, xiii. pp. 490 ff.

well as on its inner margin.¹ But why, it may be asked, were the ditches not carried right across the road, like the extension of the Antonine Rampart? The obvious reply is that for offensive-defensive purposes it was necessary that the area in front of the fort should be readily accessible from the west gate. Normally the opening in the two outer ditches would have been at the gateway itself, directly opposite the opening in the innermost ditch. But it seems to have been thought preferable to utilise the already existing Military Way rather than go to the trouble of breaking up and removing its closely compacted surface. The inconvenience caused by the troops having to pass along the berm before reaching the open would be trifling.

D. *The Continuation of the Military Way.*

The extension of the Wall of Hadrian from the fort at Wallsend to the Tyne provided us with a parallel to the extension of the Antonine Rampart to the Clyde. If the analogy is to be complete, there ought to have been a harbour at Old Kilpatrick, corresponding to the harbour at Wallsend. Mr Miller assumed that there was, and it was upon that assumption that the 'harbour-enclosure' theory rested. He unquestionably makes out a strong *prima facie* case. Such a harbour, he explains, "would give communication by water with the forts and harbours in Cumberland and Lancashire as well as with the legionary bases on the west—that at Chester (then a port) and that at Caerleon near the mouth of the Usk."² This is aptly said, and I do not think anyone had said it before. But, if Mr Miller is entitled to the credit of being the first to recognise that a port on the Clyde was an integral part of the frontier scheme of Lollius Urbicus, it is more than doubtful whether he was equally happy in his selection of a site. A brief survey of the history of the river³ will show how unlikely it is that the Roman harbour was at Old Kilpatrick. It must have been some distance away, so that a road would be necessary to reach it. That, I believe, is why the Military Way was continued.

To-day great liners, whose tonnage is reckoned in thousands, can be

¹ *Old Kilpatrick*, p. 8, footnote. Mr Miller tells me that his recollection is not sufficiently clear to enable him to say positively whether the same was the case with the ends of the other two ditches. If it was not, then the Military Way must have inclined to the right on getting clear of the opening. If it was, the odd shape of the ends, on which I have commented above (p. 233, footnote), might possibly be explained by the fact that they had to be cut through the hard and intractable surface of the road.

² *Op. cit.*, p. 8.

³ For help in connection with the history of the river I have to thank Mr G. W. Service, a well-known member of the Clyde Trust, now Lord Dean of Guild of Glasgow. The most authoritative work is *The River Clyde*, published in 1876 by the late Mr James Deas, then Engineer to the Trust.

seen threading their way through the channel opposite the fort with almost as much confidence as the tiniest of river craft. For a generation familiar with that spectacle, it is not easy to realise that little more than a century and a half ago the Clyde was fordable on foot at Dumbuck, fully two miles below Old Kilpatrick. The condition of things in 1759 is succinctly set forth in the preamble to the first of the Clyde Navigation Acts, which dates from that year: "The river Clyde from Dumbuck to the Bridge of Glasgow is so very shallow in several parts thereof that boats, lighters, barges or other vessels cannot pass to and from the City of Glasgow except it be in the time of flood or high water at spring tides." Nor is there any reason to believe that it was otherwise in Roman days, for the obstruction was not due to ordinary banks of mud or sand, such as might have been produced by silting. The shoal at Dumbuck, the first and most formidable of the twelve main obstacles, was a ridge of stiff clay, covered with an uncommonly hard crust of gravel.

In 1566 detachments of the inhabitants of Glasgow, Renfrew, and Dumbarton made a determined attempt to open up this shoal, "at which they laboured for several weeks, residing during the time in temporary huts, built on the river banks, near the scene of their operations."¹ That little or no success can have attended their efforts, or any subsequent ones on similar lines, may be inferred from the fact that a hundred years later the shipping port of Glasgow was Irvine on the Ayrshire coast. But the extra cost of land transport was a serious hindrance to the development of trade, and in 1658 Glasgow approached Dumbarton with a request for harbour facilities. On being met with a refusal, the Magistrates turned their eyes to the other side of the river. In 1662 they purchased 13 acres of ground and laid out Port-Glasgow with harbours and the first graving-dock in Scotland. Nevertheless the determination to bring ships up to Glasgow itself remained unabated. As an earnest of the future, the Broomielaw was built in 1688, although the Dumbuck shoal was destined to remain unconquered for eighty or ninety years more. At length, in 1768, an English engineer, John Golborne of Chester, recommended what proved to be effective measures for dealing with it. The level of the water was raised several feet by running out from the south bank a series of rubble jetties which confined the current within much narrower limits, and a powerful dredger was then employed to break through the hard crust of gravel. Thereafter the passage so formed was kept clear, and even deepened, by the scour of the tide, the action of which was intensified by the more restricted space available.

¹ Deas, *The River Clyde*, p. 3.

That, of course, is by no means the whole of the story. Down to 1818, after much time and labour had been expended in improving the waterway, it sometimes happened in seasons of neap tide that lighters, drawing only $4\frac{1}{2}$ feet of water, took six weeks to complete the voyage from Greenock to Glasgow. But enough has been said to rule out the idea of the Romans having had a harbour at Old Kilpatrick. They would do what the Magistrates of Glasgow did in 1662, and provide accommodation for their ships below the shoal at Dumbuck. The first convenient spot would be Dumbarton, and it is to Dumbarton that we must suppose that the continuation of the Military Way extended. This has the incidental advantage of accounting in a most satisfactory way for the belief current among the older writers that the Wall ended, not at Old Kilpatrick, but at Dumbarton.¹ Later observers were sceptical as to the Wall having gone so far, the most competent of them all pointing out that "the mountains on the north side, along the skirts of which it must have been carried, . . . would render the continuation of it almost entirely useless." They took a different view about the Military Way. Thus Horsley, whose words I have just quoted and who knew better than most people what a Roman road was like, writes: "The military way has certainly been continued as far as *Dunglass*, for it is still very visible at *Dunnerbuck*, within half a mile or little more of *Dunglass*."² But, if the road was designed to maintain communication with a harbour, it must have gone beyond *Dunglass*, for *Dunglass*, which is not much more than a mile from Old Kilpatrick, is a mile higher up the stream than *Dumbuck*, and, if it went beyond *Dunglass*, *Dumbarton* was its obvious destination. Horsley would doubtless have taken it there, had the idea of a harbour occurred to him.

E. Conclusions.

1. The excavations of 1931 have thrown an interesting light on what happened at Old Kilpatrick during the period of construction. While the Wall-builders and the roadmakers were advancing from the east, another set of men—presumably the future garrison—were busy laying out the fort. Fig. 4 indicates that, while they were aware that the

¹ Bede (*Hist. Eccles.*, Bk. i. c. 12) says "*terminatur juxta urbem Alcuith.*" Bishop Gibson in his edition of Camden's *Britannia* (1695) avers (p. 921) that it "reaches to *Dunbritton*." Gibson's authority, as we may gather from his preface, was Sir Robert Sibbald, and Sibbald in his *Historical Inquiries* (p. 28) appeals to the oral testimony and the papers of Dr Christopher Irvine (*fl.* 1638-85).

² *Britannia Romana*, p. 159. It is doubtful what place is meant by "*Dunnerbuck*," the name being now unknown. It is certainly not *Dumbuck*, which is lower down the river than *Dunglass*. Stuart (*Caledonia Romana*, p. 286, footnote) identifies it unhesitatingly with *Glenarbach*.

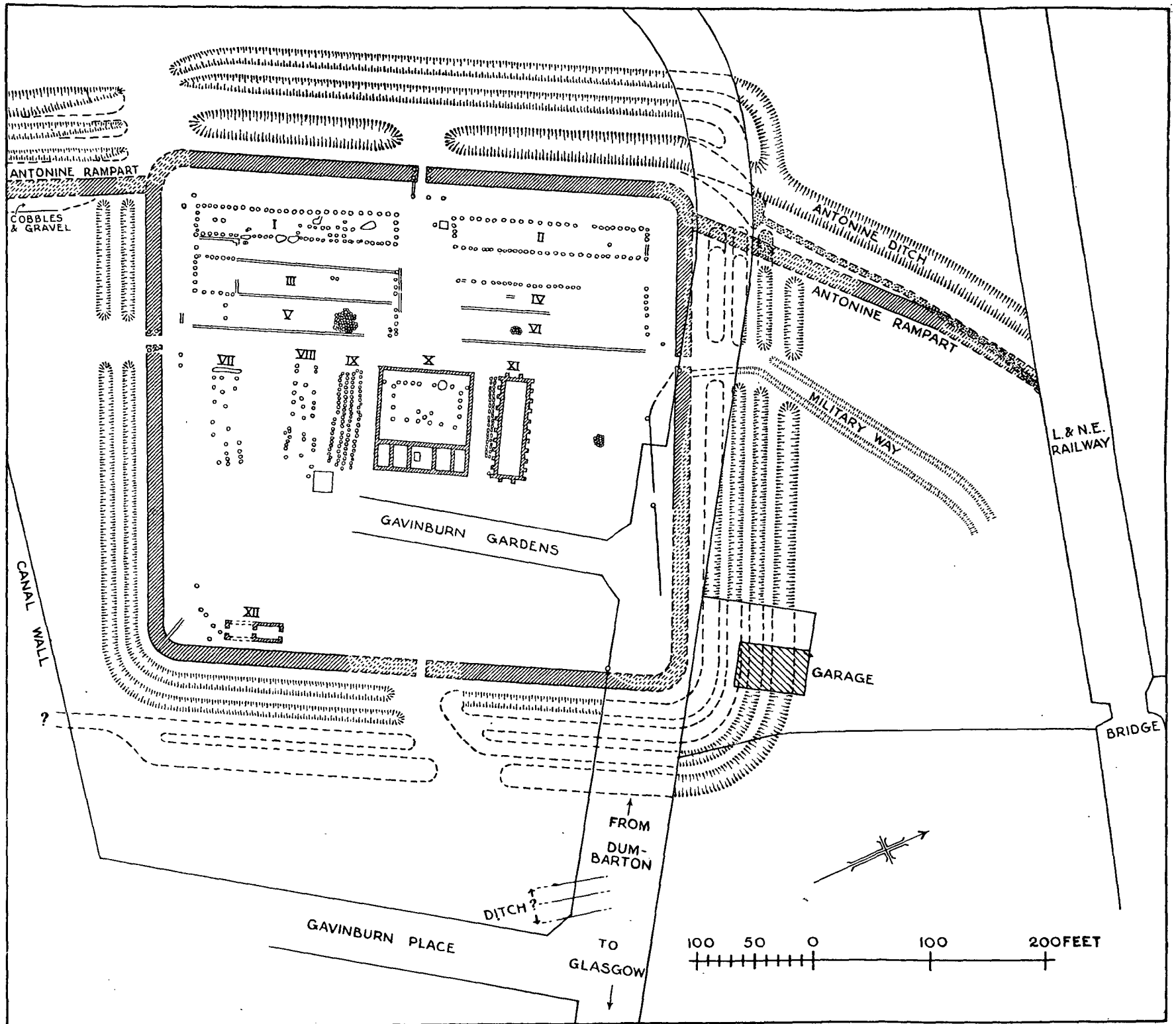
castellum was to be linked up with the Antonine Wall at each of the two western corners, the preparations they made for receiving it were not entirely satisfactory. In particular, the orientation of the fort was not properly adjusted. The front was turned too far towards the west.

2. The fort-builders were the first to complete their task, and they were ordered to set out to meet their comrades by carrying the Ditch and the Military Way north-eastwards. In both cases, but especially in the case of the Ditch (fig. 2), there was a certain amount of bungling, due partly to bad staff-work and partly to lack of experience. Ultimately the defences were completed in the form in which they appear in fig. 6, a gap being left at the south-west corner for the passage of the Military Way, which was continued down the river.

3. The original design for the Scottish Limes contemplated the provision of a harbour on the Clyde. But the river was not navigable at the spot which formed the most suitable terminus for Rampart and Ditch. The nearest point to which vessels could be brought, and at which they could be berthed, was fully four miles lower down the river. It was decided to construct the harbour there and to connect it with the 'terminal' fort by a road. Hence the continuation of the Military Way.

4. As I pointed out in 1911, there is overwhelming proof that the Wall and its forts were twice abandoned by the Romans and twice reoccupied by them before the final evacuation. On one or other of these occasions the harbour on the Clyde was definitely given up. The continuation of the Military Way then became useless, and accordingly the exit at the south-west corner of the fort was blocked. Simultaneously the defences—above all, the defences on the western side—were substantially strengthened, as shown in fig. 5.

5. If this reading of the facts revealed by the spade be correct, it represents a not inconsiderable addition to our knowledge. The giving up of the harbour can only mean that the narrows of Stranraer had ceased to be safe for Roman shipping. The strengthening of the defences carries us further. Old Kilpatrick is the only one of the Wall forts that has more than a single ditch in front, and the precaution betrays an apprehension of hostile landings. This is very significant. It was not from the Highlands that the real threat to the Roman line on the isthmus came. The untamed south-west was the Achilles-heel of the scheme of Lollius Urbicus. And behind the wild tribes of Galloway and Ayrshire there were already the roving bands of Scots from Ireland, who were presently to become so serious a menace to the security of the whole of the Romanised portion of the Province.



SIR GEORGE MACDONALD.

PLATE IX.

[To face page 242.

II. CROY HILL.

A. *The Break in the Antonine Ditch.*

The site of the Roman fort of Croy, marked to-day by a solitary cottage and a group of tall trees, lies on the eastern side of the Hill, the *castellum* having occupied the larger half of a shelf or plateau on which in later times there perched a little hamlet, built mainly from its ruins. To the west of the plateau the ground rises steeply towards the top, but on the north it descends somewhat rapidly into the valley of the Kelvin, while on the south and east it drops still more sharply to the lower reaches of the shoulder which supports the shelf. Only at two points is access easy—at the south-west, where there is room to pass round the knolls in front almost on the level, and again at the north-east, where a junction is effected with the long, narrow bank along which Rampart, Ditch, and Military Way have climbed laboriously from Wester Dullatur. Over the western part of the level expanse there is a good depth of soil, which has evidently been intensively cultivated by the dwellers in the hamlet. On the south and east, however, the rock is often close to the surface. From the south-east corner, indeed, a hog-backed ridge of basalt, sometimes barely concealed by the grass, runs northwards along the face of the plateau, crosses the line of the Roman frontier, and passes into the country beyond.

Where it traverses the Ditch, the Romans have left this ridge of basalt untouched, the result being a break from 70 to 80 feet wide, a feature that is without parallel elsewhere between Forth and Clyde. Two centuries ago it attracted the attention of Alexander Gordon, to whom we owe the first attempt at a detailed account of the Antonine Wall. His brief description could hardly be improved upon: "At the *Croe-hill*, there is a great Piece of a Rock rises out of the Ditch of the *Vallum*, and serves, as it were, for a Bridge to pass from the one Side to the other."¹ The explanation here hinted at was scouted thirty years later by Maitland, who never missed an opportunity of contradicting Gordon and Horsley. His own theory is so quaint as to merit quotation. After emphatically dissenting from the view of his predecessors that there had probably been a fort on the hill, he proceeds: "As in this neighbourhood appear the great pains taken by the Romans, in erecting a passage for the ditch through rocks, it cannot be reasonably imagined they would leave a rock undemolished in this part. Now as I am, for certain reasons (too long to be inserted in this

¹ *Itin. Sept.*, p. 56.

place), of opinion that rocks vegetate, the rock here, by its form, must have sprung up since the making of the said ditch; which is the only mean I can think of, to secure the wall at this place without a fort."¹

Ever since I discovered the remains of the fort in 1920, I had realised that the spade might throw some light upon the problem presented by the break, and I therefore gladly availed myself of the opportunity that offered itself a year ago. My hope was that an examination of the ground immediately behind would supply a convincing answer to the question whether the ridge of rock had been utilised by the garrison for passing to and fro across the Ditch. If a breach in the Rampart and positive indications of a gate were found, Gordon's suggestion of a 'Bridge' would be definitely confirmed. On the other hand, even if the Rampart ran on without interruption, the Berm might show traces of having seen service as a thoroughfare, and in that event one might safely infer that it had been used for traffic between the 'Bridge' and the fort, the north gate of which was not more than 70 yards away (PLATE X.). For reasons which will appear as we proceed, the result of the inquiry was inconclusive. On the whole, the balance of evidence seemed to be in favour of Gordon's guess. But the proof was not complete. Nor will a final verdict be possible unless and until the suite of Baths, on which we most unexpectedly lighted, has been carefully excavated, along with its surroundings. For such an enterprise more labour, and therefore more money than was at my disposal, would have been needed. Accordingly I thought it right to be content with ascertaining the general character of the building, and this I was fortunately able to do without any serious disturbance of the stratification. The little that I have to say about it will be said later on.

Our first step was to determine the exact line which the Rampart must have been following when it encountered the ridge of rock. Two cross-sections were cut, one 80 feet and the other 178 feet east of the stone dyke that bounds the modern roadway. In the first the stone foundation was no more than a foot below the present surface; in the second we had to go down twice as far before we hit upon it. We then dug cross-sections inwards from these at intervals, and noted that on both sides the ground rose quickly towards the highest point

¹ *Hist. of Scotland*, vol. i. p. 176. Mr Samuel Smith tells me that the vegetating of rocks is still an article of faith with some of the older generation of farmers. Absurd as Maitland's application of it is, the idea itself is not quite so irrational as might at first sight appear. Mr Smith points out that, where a slope is ploughed over for a series of years, the upper part of it insensibly tends to become denuded as the loosened soil is washed downwards by the rain. If, therefore, it happens to contain rocks, these gradually approach the surface and ultimately rise above it, not because they are vegetating, but because the surface-level is falling.

of the ridge. The ordinary foundation soon gave place to irregular masses of cobbles and, as we approached the top, the cobbles too disappeared, leaving only the bare rock. That was certainly suggestive. Nevertheless it would be rash to regard it as demonstrating conclusively that the Rampart had not been continuous. When there was a solid substructure of Nature's making ready to hand, the stone foundation might have been dispensed with and the turf wall reared directly upon the rock. Alternatively, the irregular masses of cobbles may have represented the débris of a stone foundation that had been swept away and scattered by the plough, whose intervention was otherwise vouched for. Surprising as it may seem, even this unpromising patch had at one time been cultivated. Indentations made in the basalt by the ploughshare were observed as soon as the thin covering of soil was stripped from the surface.

We next proceeded to push outwards across the Berm. Here we failed to find anything resembling the remains of a road coming from the west. But we did observe two features that might be interpreted as indications of a thoroughfare that had led northwards from an opening in the Rampart to the end of the 'Bridge.' In the first place, on the west side pebbles and small fragments of stone, which were clearly intrusive, were lurking in the holes with which the rock was here and there pitted. In the second place, a curious built drain, some part at least of which had unquestionably extended beyond the line of the Rampart, ran downhill for 5 feet in a north to south direction, reminding us all of a similar drain in the approach to the west gate at Mumrills. Such further evidence as could be gathered from the ground immediately to the south of the presumed opening was of more doubtful relevance. There were unmistakable signs of disturbance and occupation—intrusive clay, black matter, two sherds of pottery, and some appearance of post-holes. These disposed us for a moment to think of a guard-house. But, when we stumbled on a large building which turned out to be the Baths, we realised that the whole area would have to be thoroughly examined before any part of it could be usefully reported upon. To treat it piecemeal would be futile.

B. *The Antonine Fort.*

(a) *The Defences.*—If the attack on the first objective at Croy Hill was indecisive, that directed against the second gave us a great deal more than I had allowed myself to hope for. The brief investigation of 1920—it was restricted to a couple of days—had accomplished its immediate purpose, which was to establish once for all the existence

of the fort. But it had left matters in such a position that, as I stated at the time, further exploration was "eminently desirable."¹ A large part of the western side of the *castellum*, including the west gateway and the south-west corner, had been definitely located. The rampart, however, so far as we could see, was represented only by a band of cobbles, not more than 3 feet broad and seemingly finished on both faces, while there was no trace of any ditch or ditches outside of it. These features appeared to point to a system of defence entirely different from any known to have been employed elsewhere on the line of the Wall. First impressions of an anomaly so flagrant were somewhat disturbing, nor had reflection and a vain search for parallels made me easier in mind about it. Accordingly, as soon as it became obvious that there was nothing more to be gained by further work opposite the break, I arranged to resume the original inquiry at the point at which it had been interrupted in 1920.

As PLATE X. shows, we were able to recover the whole outline of the defences and to rid ourselves of the idea that they had been of the unorthodox type which the experience of 1920 had suggested. On the other hand, the surmise that the fort had been a small one turned out to be correct. Internally it measured 243 feet from east to west and 270 feet from north to south, dimensions which gave it an area of almost exactly an acre and a half. It was thus rather larger than Rough Castle, but only half as large as Bar Hill and less than a fourth of the size of Mumrills. If allowance be made for the Headquarters Building, a single granary, workshops and the like, it will be clear that the space available for barracks would be quite inadequate for the accommodation of an auxiliary cohort of 500 men. The garrison must have consisted of a smaller unit. The description that follows will reveal minor constructional irregularities, at once more numerous and more considerable than is customary; but all of these can be readily enough accounted for by the character of the terrain from a geological point of view. Before entering into details it is worth directing attention to the interesting manner in which the plan as set out on PLATE X. illustrates what has already been said regarding the configuration of the site. The line along which the Military Way comes up to the east gate is an accurate reflection of the contour of the surface at the north-eastern corner of the plateau, while that at which it leaves the west gate was necessary in order to avoid the steep ascent which a straight course would have involved.

On the north front the Antonine Rampart had served as the main defence. That the ground along which it ran had originally been uneven

¹ *Proceedings*, vol. lix. (1924-25), p. 288.

was obvious from the fact that the stone foundation, which occasionally rested directly upon the rock, had sometimes been laid at a depth considerably lower than the Roman surface adjacent to it on the south. In other words, the northern face of the hill had been cut away, wherever its removal would conduce to the securing of a level bed. Thus, at the junction between the east rampart of the fort and the Antonine Rampart the stone foundation of the former was no less than 2 feet 6 inches higher than the stone foundation of the latter. In the case of the west rampart, where the corresponding difference was 1 foot 10 inches, there was actually an 'overlap' of a foot and a half, a feature which was specially interesting as making it certain that the Wall-builders had reached Croy Hill at least as soon as the men who were responsible for the erection of the fort. The contrast with Balmuildy and Old Kilpatrick was remarkable. A peculiarity more difficult to understand was observed just outside the north-east corner, where a row of boulders, running from east to west, had been set into the turf immediately above the north kerb but a foot and a half higher.

It will be observed from the plan that within the fort the Antonine Rampart, coming from the east, swings slightly to the right before arriving at the gate. The deviation, which is curious in the circumstances, may well have been dictated by the conformation of the underlying rock. It is possible that the position of the gateway itself is to be similarly explained. It is not in the middle, as one might have expected, but decidedly nearer the west. Outside of it we found nothing to encourage the idea that the road which issued from it had passed eastwards along the Berm to the 'Bridge.' On the contrary, the cobbling extended northwards, clearly defined to right and left all the way across the Berm, which was here abnormally narrow, having a width of only 15 feet. What befell it, when it reached the Ditch, we shall unfortunately never learn, because for nearly the whole stretch along the front of the fort the ground beyond the scarp has at some not very remote date been excavated to form a dam, now abandoned and overgrown with grass and rushes. It is, however, difficult to believe that the road did not somehow or other reach the basalt ridge, of which the break in the Ditch formed part. As matters stand to-day, that is the easiest route down into the valley.

On the remaining three sides the fort had been girt with a rampart of turf. Positive proof that this had been so was obtained at the two northern extremities. It was only there that any fragments of the body of the rampart had survived, and in both cases the layering showed up with perfect distinctness in the sections. In some respects the stone foundation was unusual. It did not appear to have been

laid with the regularity that characterised the corresponding foundation at other forts, such as Bar Hill, Rough Castle, and Mumrills. It is true that in a section cut between the north-east corner and the east gate the cobbling was continuous all the way across, with the conventional kerbs. Elsewhere, however, it tended to be patchy. At the north-west corner, for instance, there was merely a band of laid stones, 6 feet broad, on either side, with no very definite kerbing and with a clear space of 8 or 9 feet between them. Again, farther south on the same front there seemed to be nothing but the strip of 3 feet which we had discovered in 1920 and which in 1931 we found to be on the inner side. At the same time one or two scattered stones suggested that there may once have been a similar strip on the outer side also. The other two fronts were in still more evil case. On these not much of the rampart had been left anywhere except towards the north-east corner, and between the south gate and the east gate a diligent search revealed no sign of it at all.

At the north-east corner there was, as we shall learn presently, a special reason why extra care should have been taken to provide a solid bottoming. Round the rest of the enclosure, however, the rock was near, often very near, the surface, and it appears to have been felt that something a good deal less elaborate would suffice. Mr John Clarke informs me that, except on the north-west front, the turf rampart of the fort at Cadder rested on two parallel bands of large cobbles with a clear space between them, and it would appear that the method generally employed at Croy Hill was similar. With it I am disposed to connect another unusual feature—the exceptional breadth of the base, which measured on an average about 19 feet, as compared with 12 or 13 feet at Bar Hill and Mumrills. The greater width of the foundation would compensate for its comparative flimsiness and would give a certain stability to the whole. On the other hand, it would do nothing to protect the cobbling from the ravages of the plough after the superstructure had been levelled, and there is no doubt that cultivation is very largely responsible for the mutilated condition of such vestiges as are left. So serious has been the destruction on the south and east that absolute accuracy can hardly be claimed even for the position assigned to the gates on those two sides on PLATE X. Still, there cannot be much amiss. On the east we had the remains of the Military Way as a pointer, and on the south we had débris suggestive of the former presence of a guard-house—burnt matter, pottery sherds, and a ballista ball.

I come now to the ditches. After what has been said, it will not be difficult to understand why we failed to detect any trace of them

in 1920. Referring to their non-appearance then, I wrote: "It may be that our exploratory trenches were not carried sufficiently far out from the cobbling."¹ Although I was disposed to set that explanation aside at the time, it was, after all, the true one. Misled by the finished appearance of the outside of the band of stones which we had exposed, and particularly by what looked like a projecting buttress of semi-circular form, we had been satisfied with pushing our trenches 18 or 20 feet westwards and southwards, assuming that this was the maximum width that need be allowed for a berm. In thinking matters over I had reached the conclusion that we had certainly been too hasty in taking it for granted that the western limit of the cobbling represented the outer face of the rampart. Consequently, upon the second occasion I gave instructions that the exploratory trenches were to be longer. They did not require to be very much longer, for we learned incidentally that one of those dug in 1920 had missed striking the margin of a ditch by no more than a single foot! But the discovery that we had been wrong was by no means the end of our troubles. It would be truer to say that it was only the beginning. The ditch-system had had peculiarities every whit as distinctive as those that had characterised the rampart, although they were different in kind, and to work it out completely was a much more laborious affair than might be gathered from the plan. In the light of previous experience we were reluctant to acquiesce in the seeming absence of a ditch until every possibility of error had been eliminated.

The rocky nature of the terrain was once more responsible. On the west side this factor was almost negligible, for there (as was mentioned at the outset) the depth of soil was considerable. It was fortunate that it should have been so. This portion of the plateau is commanded by the higher ground beyond, and for so vulnerable a front the three ditches by which it was covered (PLATE X.) would be none too many. As we were engaged on a reconnaissance merely, and not on an exhaustive excavation, we did not clear them out, but went down only so far as was necessary to ensure the ascertainment of their approximate surface-dimensions. For details of these it will be sufficient to refer to the plan. But it may be said generally that the narrowest was 11 or 12 feet wide and the broadest 15 or 16 feet. It deserves to be noted that the interval separating the innermost from the one next to it was singularly small, not more than $2\frac{1}{2}$ or 3 feet. The way in which all three are looped on the north side of the gate also calls for remark; it will be remembered that there is reason for suspecting the existence of a similar arrangement on the north side of the east gate at Old Kilpatrick. Lastly, it will be

¹ *Proceedings*, vol. xlix. (1914-15), p. 289.

observed that the outermost ditch did not approach so near to the Antonine Rampart as did its companions. This is because the workmen had been brought up against a rock projecting southwards.

The south front offers a very different picture. Its western extremity shared, to some extent at least, in the weakness to which the whole of the west side was exposed, and here, just as on the west side, the soil was deep enough to allow of the digging of ditches. Farther east, on the other hand, the rampart ran along the top of a slope so steep as to render any additional defence unnecessary;¹ a slope, moreover, in which no ditch worthy of the name could have been cut without an immense expenditure of labour. It is a solid mass of rock, overspread with what is merely a thin mantle of turf. These conditions are mirrored in the plan (PLATE X.). While the outermost of the three western ditches went no farther than the corner, the other two were continued round it and carried without interruption along the south front for some distance beyond the gate. In their progress eastwards they grew shallower and shallower as the rock beneath them rose higher and higher. Ultimately, when the depth had decreased to little more than a foot or two, they terminated abruptly against an outcrop of basalt. Opposite the gate they had been reinforced by a third ditch, 85 feet long. This can hardly be called a *tutulus*, inasmuch as there was no gap in the inner ditches for it to screen, but its length recalls the additional ditch outside the west gate of Bar Hill.

On the east front the conditions were in the main identical with those prevailing in the adjacent sector on the south, and over the greater part of it our search for ditches was accordingly fruitless. To make assurance doubly sure we cut numerous trenches on the flat ground at the foot of the slope. The soil here proved to be remarkably 'free.' At one point, indeed, fragments of Roman pottery were unearthed at a depth of fully 4 feet below the modern surface. We inferred that we were working on what had been in Roman times the bed of a small loch, and the inference was confirmed by the rushes which still grow luxuriantly all over it in clumps. We may therefore suppose that the south-east corner of the fort and the major portion of the east side have had a natural defence in the shape of what was virtually a moat, a supposition that makes the absence of the conventional form of defence more readily intelligible. The solitary ditch was one at the north-east corner. It was 75 feet long, and its position is significant, being exactly over against the only practicable line of approach—that followed by the Military Way. The angle at which it lies (PLATE X.) is no less significant, although from a different

¹ That there were circumstances in which a ditch was not regarded as essential is clear from Hyginus *De Mun. Castr.*, c. 26 ("Fossa loco securiori causa disciplinae").

point of view. Instead of running parallel to the rampart it runs parallel to the summit of the hog-backed basalt ridge, in a 'pocket' to the west of which it has been dug. We had occasion to clear it out, and found that it had been 9 or 10 feet deep.

(b) *The Interior Buildings.*—On the assumption that the Principia or Headquarters Building faced north, as it would almost certainly do, we may conclude from the position of the gates that it lay within the area now partly covered by the kitchen-garden of the cottage. This accords with information given us by the tenant as to foundations against which he was apt to strike in planting his potatoes. The only other points from which any evidence regarding the interior came were the two northern corners. At the north-west corner, immediately within the angle, we found what must have been the cobbled flooring of an angle-tower, along with one or two ballista balls and small fragments of pottery. The floor was 2 feet 8 inches below the level of the foundation of the fort rampart, and there was some appearance of steps. At the north-east corner we made a remarkable discovery for which we were in no wise prepared, and the full implications of which are hardly likely to be satisfactorily determined until the Baths and the area round about them have been thoroughly explored. Except as regards the facts, the following account of it is meant to be provisional only.

When the foundation at the northern end of the east rampart was uncovered, it was found to have sagged downwards very considerably. In a length of little more than 4 feet there was a central depression a foot and a half deep, a quite unmistakable indication that at this point the subsoil was 'made up.' Suspecting the presence of a pit, and hoping for a pit associated with a pre-Antonine occupation, we dug a hole close to the east or outer side of the foundation and ascertained that the ground there had been excavated for at least 12 feet below the modern surface. The cavity contained much black and red matter, resembling the waste products of a furnace, but it yielded no relics worth mentioning except a few 'clinkers,' or calcined lumps of iron slag, which were not far from the top. These last at once suggested a connection with smelting. At the same time the proximity of the Baths (PLATE X.) made it possible that what we were turning over was the refuse from the hypocausts. The information obtainable from the limited area which we opened up was not sufficient to enable us to decide in favour of either alternative, and the question must remain unsettled till the Bath-house and its adjuncts have been examined; and only then is there any likelihood of the most puzzling feature of all being elucidated—the great depth to which the excavation had been carried. It seemed clear that the hollow had not been a rubbish-pit, as we had

at first thought probable. On the other hand, when we struck the natural soil, its appearance was not inconsistent with the idea that we had got into the corner of a ditch, which had turned westwards and over which the rampart of the fort had been built. In order to put this theory to the test, we proceeded to break through what we had assumed to be the floor of the north-eastern angle-tower. Here a surprise awaited us.

On the north side we had already observed masonry below the level of the Antonine Rampart, but had supposed that this was merely intended to strengthen the foundations of the tower. As soon, however, as we had penetrated a little way down on the west side, which was the one on which we had elected to dig, masonry began to show itself here too, and it quickly became plain that there were so many tiers of it as to exclude the possibility that it was a foundation. It was in reality one of the facing walls of a stone-lined underground structure. Before describing this structure in detail, it will be well to give a brief summary of the stratification of the filling, compiled with the aid of Mr Mann's careful notes:

That the filling had been done in rather haphazard fashion was plain from the fact that the thickness of the strata was far from uniform, usually reaching its maximum near the centre. The work of clearance was carried out from the south wall northwards. On the top was a layer of grey arable soil, 3 feet thick, under which was a layer of black burnt matter—2 inches thick at first, but increasing to 6 inches at the centre and then thinning out again as it approached the north wall. Below was a foot or so of grey soil, intermingled with black burnt matter. This was followed by a stratum of red burnt matter, as much as 3 feet thick at one point, but hardly extending beyond the centre. In it were broken lumps of rock and pieces of freestone, the latter sometimes dressed. Below this came about a foot of marshy soil, interspersed with grey earth to an extent that made it look like clay, and separated by 3 inches of black burnt matter from the mass of mainly greyish soil which occupied the bottom and which contained more lumps of rock and pieces of freestone, occasionally dressed. Fragments of pottery and the like occurred at various levels, but their total number was not large, none were of any considerable size, and all appeared to be of second-century date. A curious feature was a 6-inch layer of coal ashes, which had been spread directly on the top of the south wall and of the southern half of the west wall.¹

When cleared, the chamber presented a most interesting sight. The news of its discovery spread through the neighbourhood and, so long as it remained open, it attracted hundreds of visitors on Saturday afternoons and Sundays. The opinion was freely expressed that advantage should be taken of the Ancient Monuments Act to keep it permanently on view. With this idea it was impossible not to sympathise,

¹ Cf. the 6-inch stratum of small pieces of coal at the bottom of a rubbish-pit at Bar Hill (*Bar Hill*, p. 62).

but after very careful consideration and full discussion with the staff of H.M. Office of Works it was decided that in the meantime it would be safer to cover it in. Should the Baths ever be excavated and prove worthy of preservation, the underground chamber might appropriately be exposed once more and included in a larger group, which would form a representative illustration of buildings of the Roman period in Scotland. No adequate conception of its impressive appearance can be conveyed in words, but Mr Calder's excellent plans and sections, along with the photographs which I owe to the kindness of friends,¹ may serve to supplement the inevitable deficiencies of a verbal description.

In shape the chamber was a somewhat irregular quadrilateral. No very exact dimensions can be given, as one side has been almost completely destroyed. The stone facing, however, was about 7 feet high and measured at the top 11 feet from north to south by 6 feet from east to west, exclusive of a recess for a staircase, while the corresponding measurements at the bottom were 7 feet and 4 feet. The masonry was of first-rate quality. Its ten lowest tiers showed only a slight batter, but the five or six above them were carefully stepped back, obviously to provide a secure base for a wall that had risen above them. These features are well brought out in the accompanying illustration of the south face (fig. 7), which had suffered but little damage. The west face, which was also comparatively intact, was notable as containing a flight of five steps, each step consisting of a double tier. It was notable, too, for the survival *in situ* of three stones which had belonged to the lowest course of the wall above, and which can be seen in fig. 8 immediately to the right of the staircase. The one next the steps had a pivot-hole in the centre, and thus marks the position of the door.

On the east side, instead of masonry, was a huge conglomeration of earth and boulders, which had been piled up to serve as a bed for the foundation of the fort rampart (fig. 9). Its exposure at once put an end to all speculation as to the immediate cause of the sagging that had originally attracted our attention. Nothing was left of the stone facing here except the 'tusking,' which can be seen projecting from the south wall on the right hand in fig. 9 and on the left hand in fig. 7. The north side (fig. 10) was also partially ruinous. Some of the upper tiers had disappeared, and the whole of the stones which had formed the right 'cheek' of a conspicuous opening were gone. The latter had evidently been removed at the same time as the facing of

¹ Mr J. S. Richardson, Mr C. S. T. Calder, and Mr J. D. Lyford-Pike. In looking at the photographs it must be borne in mind that they had to be taken from above, so that the perspective is inevitably distorted by the angle at which the camera had to be held.

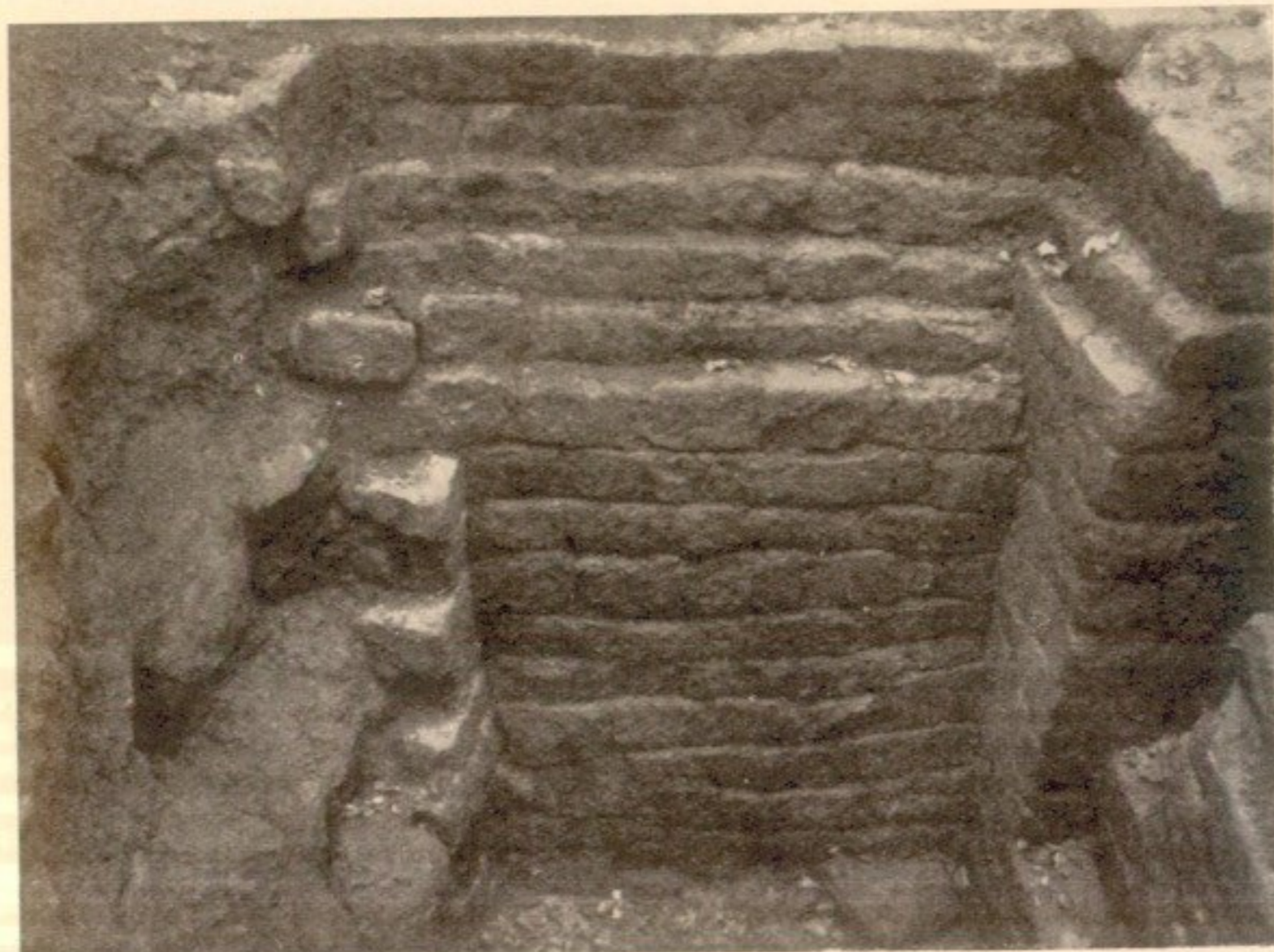


Fig. 7. South face of stone-lined Pit.



Fig. 8. West face of stone-lined Pit, showing steps.



Fig. 9. East side of stone-lined Pit, showing tussing for destroyed wall.



Fig. 10. North face of stone-lined Pit, showing partially destroyed mouth of conduit.

the east wall, but its position can be identified by the manner in which the rock has been cut away to permit of its insertion. It should be added that the large boulder lying on the top of the rock is quite obviously not in its natural place. That it has fallen forward is proved by the masonry immediately behind it. We may be sure that it was not where it is now, when the lintel and the superincumbent stones were laid.



Fig. 11. Bottom of stone-lined Pit, showing cutting in rock.

It will not have escaped notice that the opening just referred to, being the mouth of a conduit which passed under the Antonine Rampart, confirms a conclusion that the earlier illustrations must already have suggested: the stone-lined structure has been somehow or other connected with the storage of water. What the precise connection was depends largely upon the nature and purpose of the conduit, the crucial question being whether it was an outlet or an inlet. Before embarking on any discussion of this, it will be well to say something as to what lay beneath the masonry. When the water that had accumulated had been baled out—a process that had to be repeated at frequent intervals—it was seen that there was a roughly circular hole in the centre of the rocky bottom (fig. 11). Its maximum length was 3 feet 9 inches and its maximum width a foot less, and it descended with

gradually converging sides to a point 3 feet 2 inches below the lowest tier of masonry. On the north, south, and west the cavity had been cut through solid rock. On the east, however, there were visible only small boulders and two lumps of freestone, which looked as if they had either been thrown in or had rolled in accidentally. Round the sides and at the lowest point there was a good deal of iron ore sediment.

All the material required for visualising the conduit will be found in the two plans reproduced in fig. 12, if they are studied in conjunction with the longitudinal section A-A which accompanies them. Its mouth, as shown in fig. 10, was 3 feet high and had probably been about a foot wide. So far as that portion of the channel which passed under the Antonine Rampart is concerned, the line laid down is necessarily conjectural; it could not have been accurately determined without displacing everything above it, and in the circumstances such a proceeding would have been sheer waste of labour. But the evidence from the ends, more particularly from the northern end, indicated that the ground through which it had been constructed was rocky and that it had pursued a slightly sinuous course in order to avoid obstacles. A remarkable feature was the massiveness of the stones with which it had been covered after it issued from beneath the Rampart. Three of these survived, one still *in situ*, and instead of being the comparatively thin slabs that might have been expected they had a thickness of fully a foot. It looked as if they might have been intended to support some heavy structure such as a sluice. Of this, however, there was no trace. From beneath the north kerb of the Rampart the conduit was continued for about 20 feet towards the Ditch, on to the scarp of which it must have opened at some distance down the slope, the centre of the Ditch being then some 13 or 14 feet away. At first the bottom was of rock, but 7 feet short of the terminal point the rock gave out and had been replaced by paving. Similarly, when the sides were not of rock, care had been taken to protect them against collapse by a lining of masonry.

As to what I have called the crucial question of inlet against outlet, some may be disposed to think that the longitudinal section A-A (fig. 12) gives a categorical answer. The highest part of the floor of the conduit is the paved portion towards its northern extremity. At the inner edge of this there is a perpendicular drop of 3 inches. Thereafter a partial recovery is followed by a gradual and continuous decline, which ultimately reduces the level by 6 additional inches before the opening into the underground chamber is reached. As water runs downhill, one's first impulse on learning how matters stood was to regard the conduit as an inlet; but, if it was an inlet, the building beneath the

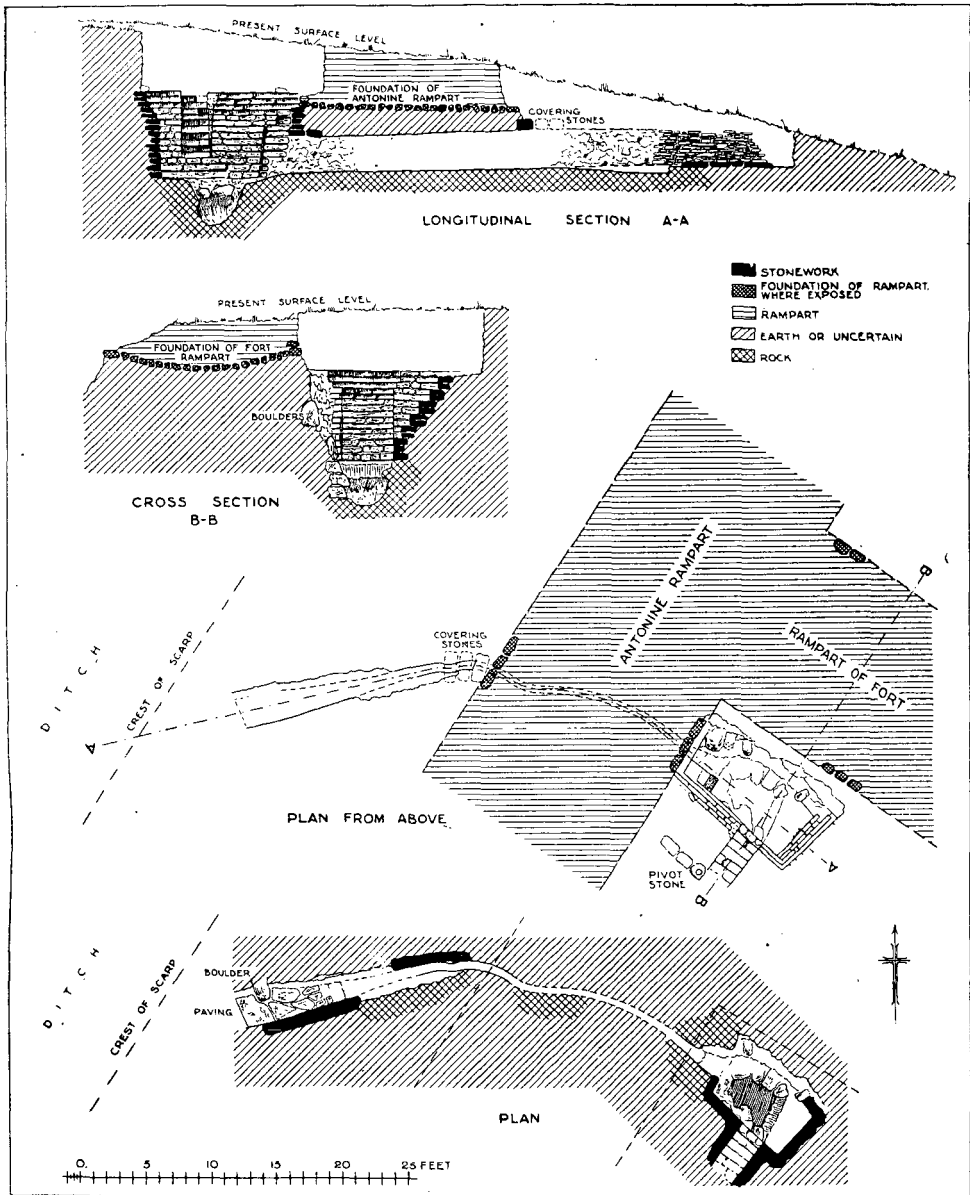


Fig. 12. Plans and Sections of stone-lined Pit beneath north-east angle-tower of Fort at Croy Hill.

angle-tower can only have been a cistern or tank for storing water that had collected in the Ditch. Water certainly did collect in the Ditch, for there was a deposit of 6 inches of silt outside the northern extremity of the conduit, and it is perhaps just conceivable that the basalt ridge may have been left untouched in order that it might serve as a dam. But why all this trouble to bring into the fort water that at the best cannot have been very clean? The enormous pains which the Romans lavished on the construction of aqueducts are a measure of the value they attached to the purity of their drinking water. More plausible is the suggestion that the building has at one time been a cistern for the Baths. But this, too, leaves much to be explained. Would such water be deemed suitable even for bathing? Why bring the cistern inside the fort if the Baths were to be outside, more especially when it interfered so seriously with the normal arrangement of an angle-tower? Why were such commodious steps provided for a mere cistern? And why were the steps in the frequent use that is indicated by the condition of the hole for the pivot on which the door swung to and fro?

The alternative is to interpret the conduit as an outlet, despite the fact that its floor slopes up from inside outwards. The building would then be the remains of a covered well which has, when in use, been fed by a spring. The object of the conduit would be to ensure that the water never rose above the level of the bottom of the steps, and the object of the upward tilt would be to ensure that it never fell below it. But why should it not have been allowed to rise all the way to the surface, as it would have done had there not been an outlet? The obvious reply is that it would have been extraordinarily inconvenient to have had, in this particular position, a well of the ordinary type, involving as that would have done a tall and open superstructure, which would have made an angle-tower impossible. On the other hand, by keeping the level of the water low, the well could be completely covered in, while the superstructure need not have been any higher than was necessary to give head-room to those entering and leaving the staircase by the door. As it was of stone, it might quite well have served as the base of a tower. In fact, on the assumption that the only spring which was found when the fort was being laid out was close to what was destined to be the site of an angle-tower—and springs would be few and far between on a hill of basalt—it is hard to see in what better way the situation could have been met.

There are, of course, difficulties; but to me, on the evidence at present available, they seem less formidable than those attending any other explanation. Thus, the question as to why there is no spring

now can be effectively answered by pointing to the heaps of mineral refuse which cumber the hillside below. The coal-getting operations to which these bear witness can hardly have failed to affect the natural drainage-system profoundly. It is less easy to account for the two pieces of dressed freestone which were observed on the east side of the rock-cut bottom, unless indeed their presence there was accidental. Mr J. S. Richardson, who regarded the conduit as an inlet, was of opinion that they had been deliberately packed in, and saw in them evidence of "the blocking of what appeared to be an outlet draining off into the lower ground." An outlet here, however, would not have drained off into "the lower ground," but into an excavation 10 or 12 feet beneath the surface and some way below the floor of the hypocausts of the Baths, whose foundations the running water would have tended to undermine. And even if it be granted that there has been deliberate packing, was the aperture necessarily an outlet? Might it not have been an inlet giving passage to the supply from the spring?

Convincing answers to these and other questions are not likely to be forthcoming until the immediately adjoining area outside the fort has been properly excavated, as it must be if and when the Baths are opened up. So far as I can learn, there is no parallel elsewhere that would be helpful.¹ Meanwhile I may note one or two points of chronological interest. The relation of the conduit to the Antonine Rampart shows that the Wall-builders and the fort-builders must have been at work simultaneously. As the construction of the conduit undoubtedly preceded the laying of the foundation beneath which it passes, the stone-lined structure, whatever its purpose, must belong to the beginning of the Antonine period. Whether it was a well or whether it was a cistern in which water for the Baths was stored, it fell out of use within the limits of the Roman period and was filled in by the Romans themselves. The pieces of dressed freestone which were mixed with the filling, including the two found in the rock-cut bottom, had in all likelihood belonged to the missing east wall. They were, however, too few in number to represent anything like the whole of it. The others were probably utilised elsewhere. This suggests that rebuilding was going on at the time, and that again tempts one to hazard a guess at the course of events. Although my conclusions are of the most tentative character, they may form a useful starting-point for future inquiry.

Like the stone-lined structure itself, the great artificial hollow outside must be closely associated with the building of the fort.

¹ The curious arrangement under one of the angle-towers of the fort at Ribchester seems to have been entirely different (*Journ. Rom. Studies*, vol. xix. pp. 191 f.).

Perhaps it was dug in the search for water. If springs were scarce, it would be natural to try and find one in a spot which would be convenient both for the Baths and for the fort. At all events, where the east rampart was to pass over it, the cavity had to be filled with earth and boulders to support the stone foundation, and it was against this heterogeneous mass (fig. 9) that the facing wall on the east was reared. It was a treacherous backing and, as it settled down, the masonry would be gradually forced forward, ultimately collapsing completely. Possibly the collapse should be associated with one or other of the two occasions on which the forts along the Wall had to be temporarily abandoned by their garrisons. We know that there was partial destruction then. When the position was regained and the buildings restored, the well of the fort was moved to a more suitable spot, where a spring had in the meantime been discovered. Whatever may have been the case at first, the well was most certainly not beneath the angle-tower during the later stages of the occupation, and it is far from unlikely that the proved weakness of the original arrangement may have been the motive that prompted the change. In conclusion it is worth adding that, when scanning the face which is shown in fig. 9, Mr Richardson's trained eye detected what he took to be signs that the upper part was considerably later in date than the lower. If he is right, the rampart must at some time have undergone extensive repair. This would fit in admirably with the tentative conclusions that have just been put forward.

(c) *The Bath-house.*—For reasons which have already been stated, I do not think it either necessary or desirable to say much about the Bath-house. It was situated outside the north-east corner of the fort between the Antonine Rampart and the Military Way, and was a long, narrow building, measuring 67 feet from east to west by 12 feet from north to south. In spite of its narrowness it seemed to have been divided longitudinally at its western end, and there were certainly two transverse partitions. Outside, to the south, there was a gravelled area which may have been a small courtyard. A hearth in an unexpected place, and some appearance of cobbling above the walls, raised doubts as to whether the building had continued in use until the close of the occupation. However that may be, there was clear evidence that it had not escaped the vicissitudes to which such establishments seem to have been peculiarly liable.

Suspicion that the Bath-house could not be far away was first aroused by the discovery of the two drains that can be seen running eastwards on PLATE X. With their help it was possible to reconstruct the general plan without breaking the surface. The larger of

the two, which had obviously carried away the waste water from the cold bath, issued from the eastern end of the building, and it was thus clear that the Frigidarium and the Apodyterium had been there, probably combined in a single apartment. The smaller one, which joined it and which could only represent the outflow from the hot bath, apparently came from the room at the south-west corner. This room would then be the Caldarium, and the room in the middle would be the Tepidarium. We penetrated into the Caldarium through clay—good clay—and stones to a depth of 6 feet, and found that it had been hypocausted and that the masonry of the walls was recessed at intervals for the upward passage of the hot air, exactly as in the corresponding rooms of the Men's Baths at Mumrills. The floor seemed to have been laid on a bottoming of boulders. In the case of the Tepidarium all we did was to raise a large flag a few inches and peer into the space below. The hypocaust pillars, on which the flag rested, were still standing erect, 3 feet high, just as the Romans had left them. At the extreme east we merely uncovered a small portion of the paving, which was of excellent workmanship and was also interesting as providing evidence of two periods.

C. *The Agricolan Fort.*

In the account which I gave of the work done in 1920 I mentioned that at the south-west corner we had been puzzled by "the occurrence of a ditch or drain running from the interior but having no apparent outlet," and I added that "possibly it had belonged to an earlier 'lay out' of the *castellum*."¹ The reason for the apparent absence of any outlet was that it stopped short on reaching the cobbled remains of the rampart foundation. There was no time for a thorough investigation then. But in 1931 we struck the same ditch again, and on following it up were able to recover the greater part of the outline of an older fort (fig. 13), which resembled in many ways the little Agricolan fort on the Bar Hill (fig. 14) and which may be unhesitatingly assigned to the same period.

When we met with this ditch in 1931, it was running east and west, not far from the south gate of the larger fort, and was therefore perilously close to the rocky outcrop. That is doubtless why it was only 5 feet wide and 2½ feet deep here, as compared with 7 feet and 3 feet, which we found to be its normal dimensions wherever there was an abundance of soil. Its general appearance at once recalled that of the short length of palisade-trench, which had been observed at Mumrills. The inference that it, too, had been a palisade-trench

¹ *Proceedings*, vol. lix. (1924-25), p. 289.

was greatly strengthened by the fact that there were usually small boulders in the bottom, the purpose of these being to give the wooden posts a firmer grip. Repeated trials, however, drove us to the conclusion that there had been no ditch of the ordinary type outside, such as there

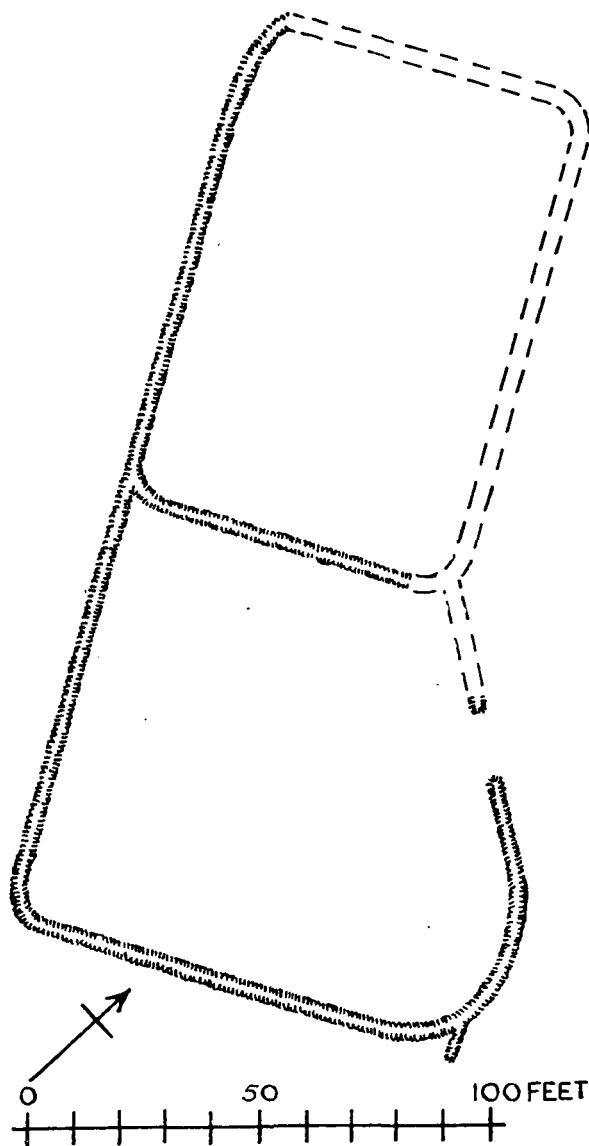


Fig. 13. Outline of Agricolan Fort on Croy Hill.

was at Mumrills. This may safely be attributed to a realisation of the rocky character of the terrain. That the smaller fort was the earlier of the two was proved by the manner in which the palisade-trench behaved when it met the stone foundation, disappearing beneath it abruptly and reappearing beyond it with equal abruptness. Still

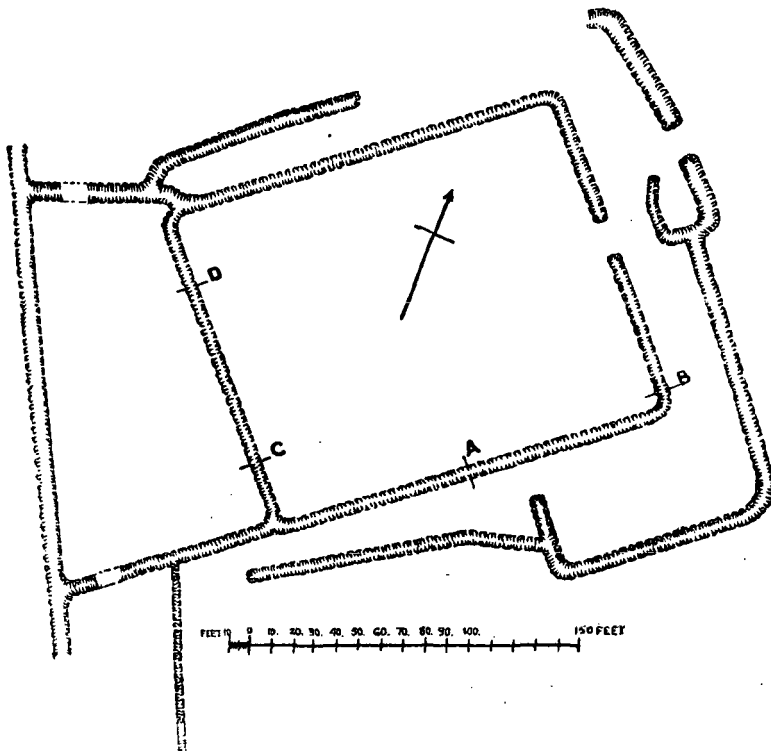


Fig. 14. Outline of Agricolan Fort on the Bar Hill.

more convincing were the sections exposed on either side of the street leading to the west gate (PLATE X.). They left no shadow of doubt as to the relative age of street and trench.

Although the outline reproduced in fig. 13 is avowedly in some respects conjectural, there need be no hesitation in accepting it as approximately correct. The explanation of our failure to discover the north front is simple. The hamlet which Gordon and Horsley saw had been built over it, so that all our efforts to find it were baffled by seventeenth-century foundations. The curve at the north-west corner had, however, luckily been spared, and that is sufficient for the purposes of reconstruction.

The east front, too, lies mainly within the area of modern occupation. Indeed, the one remaining cottage actually bestrides it. Nevertheless the line it must have taken is fairly well assured by the position of the south-east corner, which cannot have been far from where the south front of the fort united with the east side of the annexe. If the point of junction could not be exactly fixed, this was largely due to the rockiness of this part of the ground, combined with its contiguity to the slope. The palisade-trench must in any case have been shallow, and it would inevitably suffer from denudation in the eighteen and a half centuries that have elapsed since it was dug.

As will be seen from PLATE X., the orientation of the Agricolan fort was different from that of its Antonine successor. Its major axis lay more nearly due north and south. In that direction it measured about 220 feet, as compared with about 160 from east to west. Its area was therefore rather more than three quarters of an acre, or about a third larger than that of its contemporary and neighbour on the Bar Hill. On the other hand, it was only about one-eighth of the area of the Agricolan fort at Mumrills. So marked a disparity cannot but have some significance. Does it mean that Agricola distributed his isthmus garrisons on a principle quite different from that afterwards adopted by Lollius Urbicus, and that he had, say, five or six large forts, strung out on a chain consisting of much smaller ones? It is certainly very difficult to believe that Mumrills was the only one of the nineteen that was held by a unit substantially larger than those stationed at Croy and Bar Hill. Besides, the tactical conditions were very far from being identical. Had the absence of a continuous barrier any bearing on the matter? In the present state of our knowledge such questions cannot be satisfactorily answered. Nevertheless it may be just worth while asking them.

The gate—for, on the analogy of Bar Hill, it seems unlikely that there was more than one—was probably on the east side. We can at least say definitely that it was not on the south or on the west. A feature of some interest is the stretch of road, 60 feet long, which runs parallel to the palisade-trench on the south, and the direction of which precludes us from associating it with the second-century fort. Finally, there is the annexe, the bulge on whose eastern side probably indicates that, when the workmen approached the mass of basalt, they thought it prudent to follow the line of least resistance. The area is roughly equal to the area of the fort proper, and the gap left for entrance has the remarkable width of 27 feet. I am inclined to suggest that here, and also at Bar Hill, the enclosure has been intended to serve a rather different purpose from that for which the annexes attached to the later fort were designed. Belonging as it does to the earliest phase of the invasion, it may have

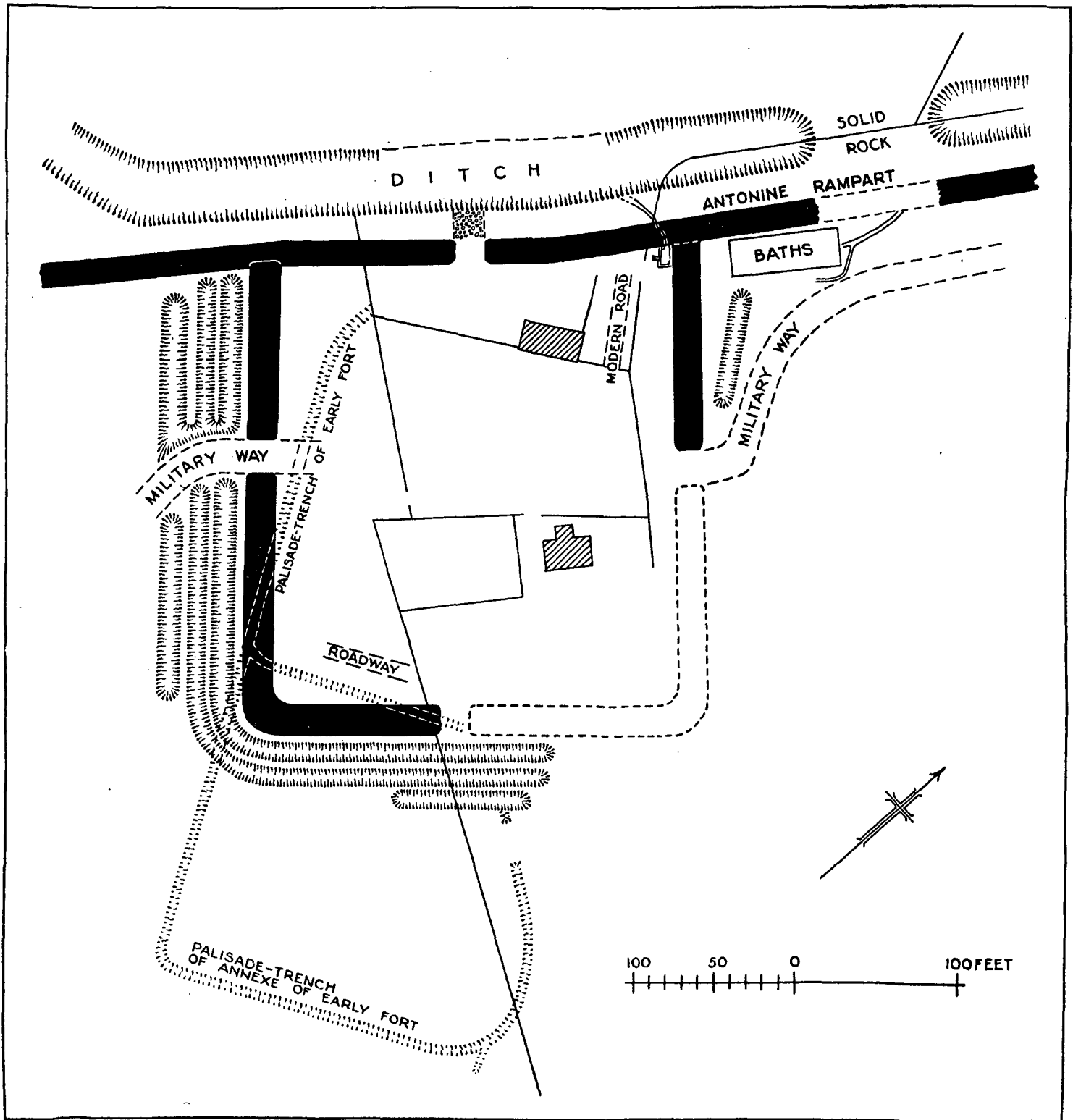
sheltered baggage animals, with their *impedimenta*, and possibly cattle. The curious projection at the south-east corner, where the ground falls steeply, can only have been for drainage.

D. *The Finds.*

The modest scale on which the undertaking was planned forbade any systematic turning over of the soil such as a more thorough-going investigation would have demanded. Our aim was merely to determine the 'anatomy' of the fort. Only in the case of the well or cistern, which we could not afford to leave unexplored, and in that of the shortest of the ditches, which we had a special reason for clearing out, did we go beyond the minimum that was essential for obtaining the data of which we were in search. The harvest of relics was consequently small. The whole of them, as well as the few that came to light in 1920, have been generously presented to the Museum by Carron Company. As a detailed list of the various objects would overload this Note without serving any useful purpose, it does not seem desirable to do more than describe them generally, drawing attention to any that call for particular remark. It will be found that among them there are two or three that point to interesting conclusions, while one is so important that I have reserved it for separate treatment.

(a) *Pottery.*—The pottery fragments, although not numerous, were thoroughly representative of a site that had been occupied during the second century. The few pieces of Samian, whether plain or decorated, appeared to be all of that date and to belong to one or other of the more ordinary types of dish, such as Dr. 18/31, Dr. 31, Dr. 33 and Dr. 37. The odds and ends of cooking-pots and 'pie-dishes' were clearly of the same period, and so too were the grey and red mortaria rims, one of which had on it a maker's stamp which I have not yet been able to decipher. Other items comprised broken bits of coarse ware—jugs and other vessels, and amphoræ. Much more interesting than any of these is a substantial portion of the side and flanged rim of a bowl of rather elegant shape and admirable workmanship. It was picked up on the west side of the fort in 1920. Its texture is very firm, and it has a smooth, almost soapy surface. The ware is one with which we are not familiar in Scotland;¹ but I am told that it is well known at York, and that the epithet 'legionary' is often applied to it. It is surely more than a coincidence that the only unit which the inscriptions enable us to connect with Croy Hill is a vexillation of the Sixth Legion, whose headquarters were, of course, at York.

¹ The only approach to a parallel in the Museum is the half of a buff-coloured bowl, smaller and of much more commonplace design, which is said to have come from Cadder.



SIR GEORGE MACDONALD.

PLATE X.

[To face page 266.

(b) *Glass*.—The fragments of glass numbered barely half a dozen, but they included one piece that calls for special notice. It came from the immediate neighbourhood of the well or cistern, and is part of the rim of a bottle which had been so badly twisted in the process of manufacture that it can only be classed as a 'waster.' No one, however, would have taken the trouble to convey 'wasters' to the fort. We must therefore infer that, small as the garrison was, it had its own glass-blowers—a useful contribution to our knowledge of the economic life of such remote stations on the frontier.

(c) *Iron*.—Of the shapeless masses to which the iron objects had been reduced there were not more than two which repaid expert treatment. The first was a broken hippo-sandal, from which we can argue the presence of horses. The second was the head of a small pick-axe, such as might have been used in quarrying. It was taken out of the well or cistern, where it was lying just below the layer of red burnt matter. From end to end it measured nearly 11½ inches, or only a trifle less than a very similar implement from Newstead.¹ When the rust that choked the hole for the handle had been removed, two or three small pieces of wood were found adhering to the inside. These were submitted to the Regius Keeper of the Royal Botanic Gardens, who had them microscopically examined by Mr M. Y. Orr. Mr Orr's report is so interesting that I reproduce it *in extenso*:—

"The identification of the wood from the head of the pick-axe found at Croy Hill has proved to be more difficult than was anticipated at first. The wood was impregnated with foreign substances, and chemical means had to be employed before its structure could be investigated. It was subsequently discovered that owing to the small size of the pieces only *part* of an annual ring was included, while the absence of another characteristic, as it happened, delayed the process of identification considerably. On such anatomical data as are available, I have no hesitation in naming the wood *oak*, and I would even venture further by suggesting the Holm or Evergreen Oak (*Quercus Ilex*). This opinion is based on both anatomical and physical features. As the evergreen oak is not a native of Britain but a Mediterranean species, it looks as if the handle of the pick must have been cut in Italy. It is of interest that C. Valerius Flaccus (A.D. 70) writes of javelins made of oak, but the kind of oak is not specified. The absence of large pores and the extent of the 'autumn' wood seem to rule out the common British Oak, and I do not think it could be any other species."

(c) *Stone*.—In 1920 no fewer than 14 ballista balls of different sizes were recovered in the course of the two days' work, and 8 or 10 more were found last year in different parts of the fort. Croy Hill thus presents a striking contrast to Mumrills, where a far more searching excavation, spread over three years, did not yield a single example. It is

¹ *A Roman Frontier Post*, Pl. lviii. 12.

perhaps not unreasonable to see in this some confirmation of the idea that the evacuation of Mumrills was an orderly one, the garrison withdrawing with all their supplies and munitions of war.¹ Apart from the sculptured fragments to be discussed in the Note that follows, the only other object of stone that need be mentioned is a flat-bottomed spherical block, broken in two and not quite complete, which formed part of the filling of the well or cistern. A circular hole of considerable depth, slightly grooved round the bottom by wear, has led Mr A. O. Curle to suggest to me that it may possibly have been a pivot-stone. The spherical shape might be accounted for by supposing that it was a case of re-use.

(d) *Miscellaneous*.—Under this head may be classed a few lumps of burnt daub, bearing the impression of wattles; three or four fragments of the sole of a nailed shoe; and a well-made and well-preserved brick, a little more than 8 inches square and $1\frac{1}{2}$ thick, which has probably once belonged to a hypocaust pillar. The burnt daub, while suggestive of a conflagration, shows also that some of the buildings were of wood, although the large number of wrought stones in the neighbouring dykes and walls proves that some of them must have been of more substantial character.

III. A RELIEF OF JUPITER DOLICHENUS.

Pride of place among the finds belongs easily to two fragments of a sculptured relief of the Syrian god, Jupiter Dolichenus. They were lying, about 4 feet down, in the short ditch outside the north-east corner of the fort, and with them were a few building stones. Hoping that it might contain other pieces of the shattered monument, I had the whole ditch cleared out to its full depth of 9 or 10 feet. Unfortunately there was nothing to reward our search except more building stones. Such a result was a real disappointment, for there is little doubt that the inscription, of which only five letters have survived, would have given us valuable information. But, even as matters stand, the discovery is of very great interest in several respects. To mention only two—it marks the most northerly point to which the far-flung cult of this Syrian deity is known to have penetrated, and at the same time it gives us the first actual representation of him that has come to light in Britain.

The relief has been carved on a slab of reddish sandstone about $7\frac{3}{4}$ inches in thickness. Apparently it had been let into the wall of a building, for both fragments are broached diagonally on the back, as if for the reception of mortar. The smaller of the two (fig. 15) measures

¹ *Proceedings*, vol. lxiii. (1928-29), p. 522.

11 $\frac{3}{8}$ inches by 9 $\frac{5}{8}$ inches, and displays the torso of a male figure, with head, legs, and fore-arms broken away. He wears a tunic, fastened with a girdle from which depend loose leather flaps or lambrequins. His sword, which is slung behind him, is supported by a belt passing over his right shoulder and across his chest. The pommel is visible beneath his left arm, while the lower part of the sheath projects at his right side. Taken by themselves, and without the conclusive evidence supplied by the second fragment, these characteristics would have been sufficient to enable us to recognise him. They are decidedly unusual, but are exactly those which distinguish the dress and equipment of Jupiter Dolichenus on the well-known bronze plaque from Heddernheim, now in the Landesmuseum at Wiesbaden (fig. 16).¹ With the help of this plaque the missing portions of our figure can be restored with certainty. The costume of the god has been completed by Oriental trousers and Persian headgear, one flap of which can be seen in fig. 15, just over his left shoulder. He has had a double-axe in his right hand and a thunderbolt in his left, and has had his feet planted on the back



Fig. 15. Fragment of sculptured Relief from Croy Hill, showing torso of Jupiter Dolichenus.

of a bull, standing to right, perhaps with a rosette upon its forehead. While there is a broad general resemblance between all the known representations of Jupiter Dolichenus, no two (so far as I am aware) agree with one another in minor details so closely as do figs. 15 and 16. It seems certain that both are modelled on a common original.² They differ markedly, for instance, from that which appears

¹ It is a pleasure to acknowledge the kindness of the authorities of the Wiesbaden Museum, who, in response to an inquiry about details, were good enough to make and send me a cast to facilitate comparison.

² At one time there was a disposition to question the genuineness of the Heddernheim plaque. More than thirty years ago its authenticity was vindicated once for all by G. Loeschke (*Bonn. Jahrb.*, vol. cvii. p. 70). But, had any lingering doubts remained, the Croy Hill discovery would have disposed of them effectually.



Fig. 16. Bronze plaque from Heddernheim, showing figure of Jupiter Dolichenus (Wiesbaden Museum).

on a plaque of silvered bronze from Kömlöd in Hungary, which is to be seen in the National Museum at Buda-Pesth (fig. 17*a*).¹ There the sword and sword-belt, the Persian headgear, and the Oriental trousers will all be looked for in vain. At this juncture it may not be irrelevant to interpolate a word or two regarding the purpose of these plaques. As the inscription on the one from Hungary shows,² they were votive

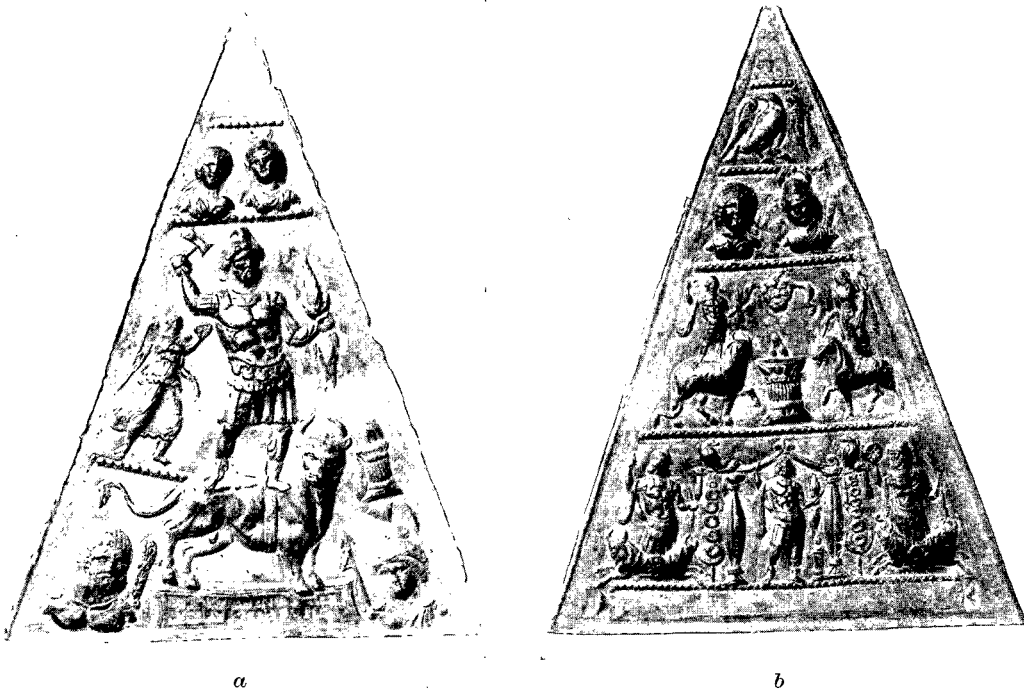


Fig. 17. Two plaques of silvered bronze, once placed back to back, from Kömlöd, showing (a) Jupiter Dolichenus and (b) Jupiter Dolichenus and Juno Regina. (Buda-Pesth Museum.)

offerings. It used to be believed that they had been the sides of pyramids, but it is now universally agreed that they were fixed upright in a wooden framework, and that two of them were sometimes placed back to back.³ Their triangular shape has obviously had some esoteric meaning, at which it would be idle for us to guess; the knowledge of it must have perished with the last of the initiated. But, whatever it

¹ For the photographs from which figs. 17*a* and 17*b* are taken I have to thank Professor F. Lang of the University of Debreczen, who will shortly publish a valuable monograph on the whole subject.

² It is barely legible in the illustration, but reads—*Iovi Dulcheno P. Ael(ius) Lucilius centurio coh(ortis) I Alp(inorum) eq(uitatae)*.

³ See *Bonn. Jahrb.*, vol. cvii. pp. 69 f.

may have been, there is no doubt as to the general class to which the plaques belong. They were manufactured in the vicinity of the temple, and were sold to devout worshippers, who had them set up within the precincts or sometimes carried them away to preserve in their own homes. They are, in fact, the counterparts of the shrines for Diana which were made by Demetrius, the silversmith of Ephesus, and which "brought no small gain unto the craftsmen."¹

The Croy Hill relief, however, was far from being a slavish copy of the Heddernheim plaque. The figure of the god was virtually identical but, instead of being alone, he was accompanied by his consort. For proof of this we must turn to the second and larger fragment (fig. 18). It measures 1 foot 8 inches by 10½ inches, and contains a few letters of an inscription as well as a portion of the sculpture. I will take the latter first. It was not quite easy to be sure as to the animal whose legs and hinder part have survived, and the trained zoologists, whom I consulted, sometimes hesitated a little as to the sculptor's intention, so crudely is it expressed. But, while the shaggy feet are reminiscent of those of a carnivore, the characteristics of the bovine family appeared to predominate, putting the claims of the ox beyond dispute. At the first glance one might suppose that it is the bull on which the god has been standing, and that it is his foot whose remains are distinguishable just on the line of fracture. There are, however, two convincing reasons against such an interpretation. In the first place, in all similar representations the bull has its head towards the right. In the second place, the first line of the inscription consisted, as we shall see, of twelve letters and, if allowance be made for this, considerations of space make it certain that there must have been two animals, standing face to face.

Here we get help from another Hungarian plaque (fig. 17*b*), also of silvered bronze, which was originally placed back to back with fig. 17*a*. On the sinister side is Jupiter Dolichenus in the conventional attitude and with his usual attributes, while on the dexter side, standing upon the back of a he-goat, is his consort, generally called Juno Regina in the inscriptions. Between them is an altar. While the combined group is rarer than the single figure, parallels are by no means unknown. A remarkable example came to light quite recently in Bulgaria.² Professor Kazarow, Rector of the University of Sofia, has kindly sent me a photograph but, as the plaque is still unpublished, I do not feel free to reproduce it. Another (fig. 19), this time of silver, was found at Heddernheim and acquired for the British Museum in 1896.³ Although

¹ Acts, xix. 24.

² I owe my knowledge of this discovery to M. Franz Cumont.

³ I am indebted to Mr H. B. Walters for a photograph.

it is imperfect, it is valuable as serving to explain a feature of the Croy Hill relief, to which I have not yet alluded. Behind the figure of Juno Regina can be seen the upper part of a fluted Corinthian column, indicating that the two divinities are standing within an *aedicula* or



Fig. 18. Fragment of sculptured Relief from Croy Hill, showing remains of inscription.

shrine. It is obvious that a similar significance must attach to the lower part of the shaft which rises behind the tail of the animal in fig. 18.

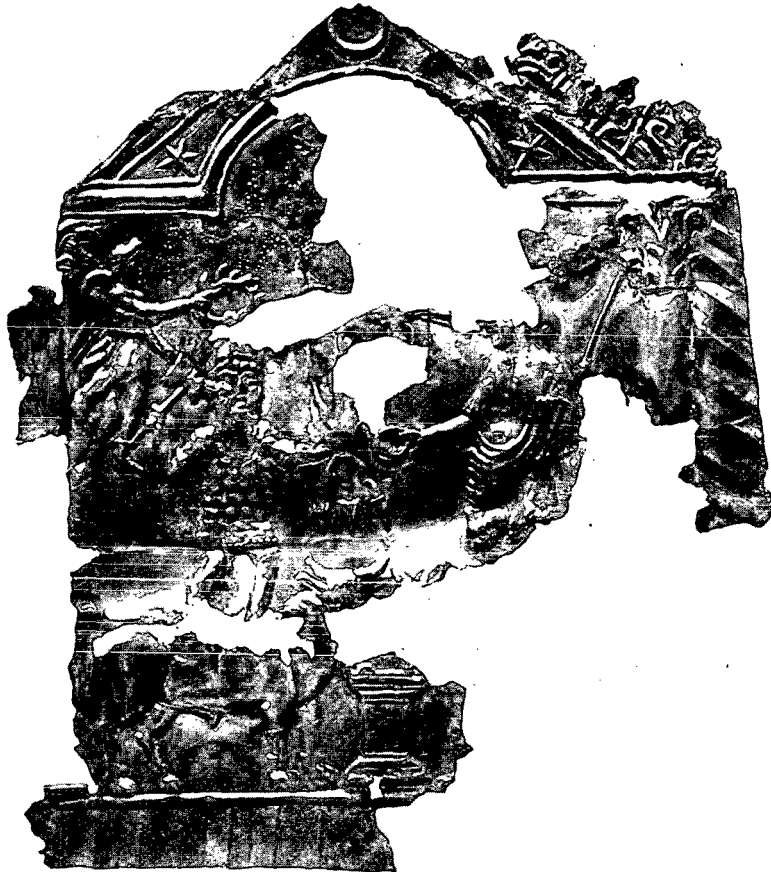


Fig. 19. Silver plaque from Hedderheim, showing Jupiter Dolichenus and Juno Regina. (British Museum.)

The association between the god and his bull is constant. But, after the manner of her sex, the goddess is *varium et mutabile*. At Kömlöd, as we know, it is on the back of a he-goat that she is standing. On the Bulgarian example the animal is somewhat nondescript, but is probably a deer. Elsewhere we find a panther or a lioness,¹ and on a

¹ A sculptured relief at Kastell Faimingen on the German Limes (*O.R.L.*, vi. Nr. 66c. 52).

gilded plaque from Aalen in Württemberg we find a cow.¹ Fortified by the analogy from Aalen, we need not hesitate to decide as to what was in the mind of the sculptor of the Croy Hill relief, and we are then in a position to form a good idea of the appearance of its main elements. As to the minor adjuncts (if any) we can say nothing. The spacing suggests that a single pillar may possibly have been deemed sufficient to represent an *aedicula* or shrine, in the centre of which there has probably been a small altar, with the figures of Jupiter Dolichenus and Juno Regina on the sinister and dexter sides respectively. The god has been depicted in Oriental costume, standing on the back of a bull, and grasping a double-axe in his right hand and a thunder-bolt in his left. His consort has been standing on a cow. Her dress and attributes are uncertain, but it may well be that she was portrayed very much as she appears on figs. 17 *b* and 19.

The inscription is even more fragmentary than the relief to which it refers. All that we can do with it is to complete the first line. It has read I·O·M·DOLICHENO—"To Jupiter, Most High and Most Holy, God of Doliche." This was the formula with which dedications to Jupiter Dolichenus regularly opened, and the four letters at the end of it are still distinctly legible on the stone. The last letter of the line immediately beneath is also visible. It appears to be L, but a residue so meagre provides no basis for conjecture of any kind. The loss of the remainder is much to be regretted. It would have told us who the dedicator was, what was his rank, and what the military unit to which he belonged. If it was dedicated by a regiment, we should have had its name and number. As it is, all we can say is that there is good reason to believe that the inscription has been a fairly long one. Where the skirt of the god's tunic projects between his legs, the stone is undercut to represent the folds of the garment, an unmistakable proof that the figure was intended to be looked at from below. The first line of the inscription cannot, therefore, have been very far from the level of the spectator's eye, which again means that a large part of the inscribed tablet is awaiting. It is hardly necessary to add that the building, to the wall of which the relief was fastened, must have been of stone. It may have been a small temple, not in the fort itself but somewhere outside the ramparts. On the whole, however, it is much more likely that it was the Shrine of the Standards—the *sacellum* in the Headquarters Building—where the image of the god would occupy a central position, flanked on either hand by the *signa*.²

Before the end of the second century the Baal of the little town of

¹ Haug u. Sixt, *Die römischen Inschriften u. Bildwerke Württembergs*, vol. i. (1914) pp. 121 f. Nr. 57, fig. 23.

² V. Domaszewski, *Die Religion des römischen Heeres*, pp. 11 f.

Doliche in Commagene had won for himself a foremost place in the pantheon of the Roman army. To dwell upon the astonishing extent to which his worship spread would be out of place in a brief Note such as this.¹ But it may be convenient to append a list of the localities in Britain where he is known to have had his devotees. These include the legionary fortress at Caerleon; Plumpton Wall near Penrith; Piercebridge near Gainford; Benwell, Chesters, Aesica, and Carvoran, all on Hadrian's Wall; Bewcastle, High Rochester, and Birrens to the north of it; and, finally, Corbridge. It will be observed that all of these were military stations except the last, which was a town within the military area. As a rule, the evidence is supplied by altars dedicated to the god, but at Bewcastle and probably at Plumpton Wall there is mention of a *templum* or *aedes*.² One of the altars from Aesica has above the inscription a rudely cut representation of what has been supposed to be a cow to left with a small altar in front of it.³ A fine female figure in stone, with her feet planted on the back of an animal standing to left, found long ago at Chesters and now in the Clayton Memorial Museum there, was formerly believed to be Cybele, but has been identified by Monsieur Cumont as the consort of Jupiter Dolichenus.⁴ Until the discovery of the Croy Hill relief these were the only sculptures from Britain that could be associated with the god or his cult.

¹ Excellent summaries have been given by M. Franz Cumont in Pauly-Wissowa's *Real-Encyclopädie*, v. 1276 ff., and by M. Salomon Reinach in Daremberg et Saglio, *Dictionnaire*, vol. ii. pp. 329 ff.

² *C.I.L.*, vii. 976 and 316.

³ *C.I.L.*, vii. 725, and Hettner, *De Jove Dolicheno* (1877), p. 48.

⁴ *Syria*, vol. i. pp. 187 ff. Since the above was written, Mr R. C. Bosanquet, F.S.A., tells me that he thinks he has discovered a torso of the god among some stones at Chesters that had been thrown aside as useless.