

ART. III.—*Report of the Cumberland Excavation Committee for 1900.* By F. HAVERFIELD, M.A., F.S.A.

THE seventh summer's work of the Cumberland Excavation Committee was directed principally to the exploration, during the second half of last August, of an unknown piece of the Vallum between Craggle Hill and Walton. It resulted in the addition to the map of about a mile and a half of this earthwork, hitherto marked only by conjecture and marked wrong. Incidentally a mile-castle was verified, and a piece (as it seemed) of the Mural Road was detected in the same neighbourhood. A small stone structure, sometimes called a Roman watch-tower, which stands on Gillalees Beacon near the Maiden Way, was also examined. Brief as the record is, it marks an advance in our knowledge of the Roman Wall, and it is therefore satisfactory. It cannot be too often repeated that we shall never properly understand the Wall or solve its problems until we have acquired by excavation a far more minute knowledge of it than we at present possess.

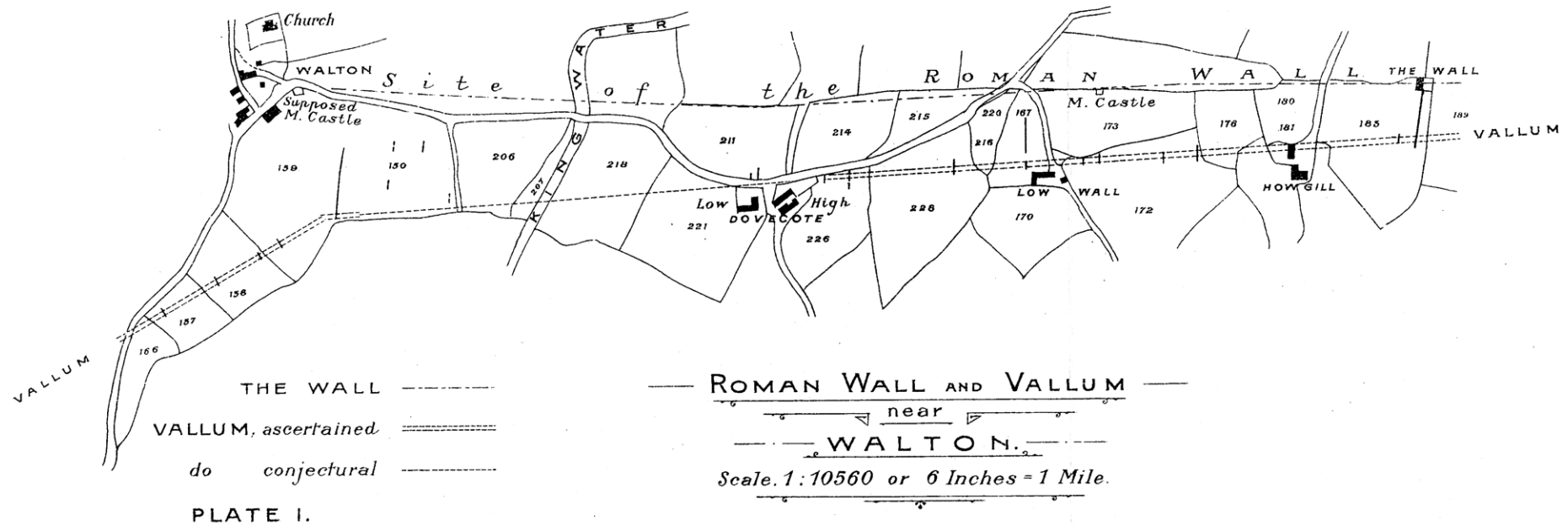
This fact was strikingly illustrated by a brief excavation made in September at Chesters in Northumberland. This excavation was, of course, not the work of the Cumberland Committee, but it was connected therewith, and may fitly be recorded here.* It shewed that two distinct periods of construction can be traced at Chesters. First, there was a wall with a ditch in front—possibly an earthen or turf wall and possibly with a fort behind it, but on these two points direct evidence is lacking. Then the wall was destroyed, the ditch filled up for 430 feet, and a new wall of stone was substituted and the fort built which we now see, standing across the original line and over the filled-up ditch. The result takes place beside the similar case

* An account was communicated to the Newcastle Society of Antiquaries in October 1900.

of Birdoswald, where the earlier turf wall and later stone wall were distinguished in our excavations of 1895-8. Hitherto, Birdoswald had stood alone and afforded no good basis for induction. Perhaps even the two instances are insufficient, but they suggest a new vista in Mural research ; they place the Mural problem in a new light.

As before, the excavations in Cumberland were greatly aided by the kindness of landowners and farmers, who granted all necessary permissions with great readiness. The Committee is especially indebted, as in so many previous years, to Lord Carlisle, for leave to dig upon his land and for many facilities ; to Mr. F. P. Johnson of Castlesteads, for leave to dig at High Dovecote ; to Mrs. Brown, for leave to dig at Howgill ; to Mr. Harding, for leave to dig at Low Dovecote ; to the Rev. C. P. Calvert, for leave to dig near Walton ; further to Mr. Brown of Low Wall, to Mr. Harrison of Low Dovecote, to Mr. Johnstone of Nook-on-Lyne, to Mr. Wilson of Walton, to Mr. Wilson of Gillalees, tenants of land excavated, for leaves and friendly help. In some of the preliminary arrangements we were much helped by Mr. R. G. Graham of Beanlands Park and by Mr. W. James of Lanercost. All the digging was, as usual, done under supervision—and for the sense which we attach to supervision we may refer to our last report. For valuable aid in surveying and planning the Committee and the Society are once more indebted to Mr. and Mrs. Hodgson.

Our plans for 1900 had been largely formed before the death of Chancellor Ferguson. This is not the place to express either the public or the personal loss which that death has occasioned to the present writer and to the other members of the Committee. But we recollect that excavation was one of Mr. Ferguson's keenest archaeological wishes. He was unable himself to take active part in the actual digging and supervision, but he never ceased his efforts to promote it in every way. We shall be carrying out one of his desires, if we continue the work



which he held, and rightly held, to be so important. In 1901 we trust to be able to trace the line of the Vallum further west from Walton to Castlesteads and Newtown, and thus finally close this great gap in our knowledge of its course. Some points also await excavation west of Carlisle—for instance, on the eastern shore of Burgh Marsh, near to Dykesfield, where a cursory inspection made this summer shewed that the spade is needed to test traditional accounts.

I.—THE VALLUM. (Plate I.)

From the western slope of Craggle Hill, above Lanercost, to Newtown-of-Irthington, the line of the Vallum has hitherto been practically unknown. Map makers have, of course, laid it down in various ways with more or less confidence, but their assertions rest on no real basis of knowledge, and agree in nothing except in being guesses. It is desirable to abolish this gap in our knowledge, which is nearly three miles in length. We had already, in 1898, made a commencement. In that year, however, we were able only to prove that the lines laid down on the map west of Castlesteads, were incorrect. This year we determined to begin at the eastern end, near Craggle Hill, and our efforts were successful. We traced the Vallum across the farms of Howgill, Low Wall, and High Dovecote, running roughly parallel to the Wall at a distance of about 400 feet south of it. At High Dovecote it meets farm buildings and a modern road, and search for it is impossible: beyond these are the alluvial holms along King Water, in which also excavation is unlikely to yield results. We found the Vallum, however, on Walton Hill. The Wall bends here and the Vallum bends with it, and continues westwards, again roughly parallel to it and about 600 feet south of it, but slightly diverging southwards. Its course is, therefore, in every respect normal and requires no comment.

It may be convenient, even if tedious, to add some details of the trenches which yielded these results.

1. We commenced on the Howgill estate, in the north-east corner of the "Wall field" (No. 185 on the 25-inch O.S.), close to a cottage called The Wall, which stands on the actual line of the Wall, and which is also (as Mrs. Brown told us) the last survivor of a little group of cottages, mostly pulled down in 1780-1830. Starting from the garden fence of this cottage, 28 feet east of it, we dug a trench 300 feet long due southwards: the north end of this trench is about 30 feet south of the Wall. At 131 feet from the fence, that is 160 feet from the Wall, we found what seemed to be traces of the Mural Road, much damaged—a packed layer of cobbles and freestone, ten feet wide. Two trenches, 28 feet eastwards and 21 feet westwards, shewed similar remains: a third trench 21 feet further west yielded nothing. This seems to be the Mural Road, but it might also concern the old cottages, though these seem to have stood a little way off. Whatever it is, it has been much ruined by ploughing, and it may have originally been much wider. At 271 feet from the hedge, that is 200 feet from the Wall, we found the Vallum ditch, 23 feet wide and 5 feet deep, very plainly preserved. The north bank of it sloped gently, the south bank very steeply; which difference is probably due to some disturbance, perhaps to a slipping forward of the original south bank. A parallel trench, 96 feet westwards, showed the north bank of the Vallum ditch and confirmed our results.

2. After some abortive trenches in the Far Bell Close (O.S. 176) on the Howgill estate, we moved to the Well Field (O.S. 172) on Low Wall farm. Here a trench 78 feet long was dug in the north-east corner of the field, and revealed the ditch of the Vallum 23 feet wide and about 4 feet 3 inches deep, except at the north side, where it sank to 4 feet 9 inches. A second trench, at 200 feet westwards, confirmed the last by shewing the south side of the ditch:

the slope was very steep, about $2\frac{1}{2}$ to 1, and may be due to the bank (here largely sand) having slipped forward. It may be convenient to note that the fourth tree in the east hedge of the field, counting from the north-east corner of the field, stands over the northern part of the Vallum ditch.

3. At the other end of the same field near its north-west corner, a short trench (16 feet long) shewed the south side of the ditch and the bottom of it, with much black matter in it, at 5 feet 10 inches below the present surface. It may be convenient to add that four oak trees which here stand along the north hedge of the field in a row seem all to stand over the north side of the Vallum ditch.

4. Our next trench was dug in Croft Close (O.S. 167), belonging to Low Wall farm. After an abortive trench 90 feet long, we found the ditch of the Vallum under a definitely-marked "slack," which runs westward across the field down to a little dip. This slack is noteworthy, for it is the only point in the neighbourhood where the present surface reveals the ditch buried below.

5. Continuing westwards, we next trenched the "High Field" of High Dovecote farm (O.S. 228) at about 125 feet from its eastern hedge. Our trench, 25 feet long, just covered the Vallum ditch, 23 feet long, with black matter at the bottom.

6. In the next field, the Croft (O.S. 226), we dug a trench 90 feet long, at 130 feet from the north-east corner of the field and 206 feet from its north-west corner, and found the south side of the Vallum ditch at its north end. The depth of the bottom was $4\frac{1}{2}$ -5 feet below the present surface: the slope of the side is a little steeper than 1 upon 1. A second trench, 116 feet east of this one, showed the south slope of the ditch in its proper place. Here the ditch begins to coincide with the modern road, and here we lost it for some distance. We made efforts to find it on both sides of the road below the building of the two Dovecote farms, trenching both in Low Kiln

Garth field (O.S. 211) and opposite it (O.S. 221) to a considerable extent, but in vain.

7. We next dug in the large grass-park called Bendle's Croft (west of the King Water), belonging to the Sandy-sike estate (O.S., 150 and 159, now one field). We trenched the lower (eastern) part of this field in vain, both in its north-east and south-east portions. The subsoil here shewed that, before the field was drained and brought under cultivation, there must have been much peat and soft ground here, but though this peat had left behind much "black matter," such as is often found in the bottom of the Vallum ditch, no satisfactory traces of the ditch could be found. At last, however, we dug a trench 420 feet long across the field further up the hill, and, at the south end of it, we found the ditch, 7 feet below the present surface and apparently 28 feet wide, but our trench probably cut it obliquely.

8. After some more searching, we found the ditch again about 85 feet east of the western hedge of the same Bendle's Croft. Here and in the succeeding trenches a layer of mould and "forced" soil, three feet thick, overlies the untouched soil which forms our criterion, and considerably added to the difficulty of digging. The ditch was 23 feet wide from tip to tip of untouched soil, and its bottom was 8 feet 8 inches below the present surface.

9. A trench in the eastern part of the next field (O.S. 158), about 115 feet west of that just described, yielded similar features at the south slope of the ditch; the north slope was not dug out. The bottom of the ditch was 5 feet 8 inches below the present surface; the north slope shewed a steepness of 2 feet in 1. On the other side of the same field another trench, 26 feet long, shewed again the south slope of the ditch and its flat bottom, here 9 feet below the present surface, with black vegetable matter lying on it, above that a thin layer of grey clay, and above that the mixed soil which fills most of the ditch, mixed red and grey clay.

9. Finally, a trench in the next field (O.S. 167) shewed again the south bank of the Vallum ditch in line with, but less well preserved than the parts found in the preceding trenches.

These excavations were supervised by Mr. R. P. L. Booker, M.A., F.S.A. and the present writer, and surveyed by Mr. T. H. Hodgson, who has prepared the plan.

II.—MISCELLANEOUS.

1. A fragment of ancient roadway, now 10 feet wide, was found in our first trench, just 160 feet south from the line of the wall, and may well be a piece of the Mural Road. It is described above.

2. Surface indications, suggesting a milecastle, have often attracted attention in a field on Low Wall farm called Castle Field (O.S. 173). The north hedge of this field stands on the ruins of the Wall, and a trifling elevation, about 70 feet square, occupies a position suitable for a milecastle, and is of a proper size. We were able to trace a part of the west wall of the milecastle and the

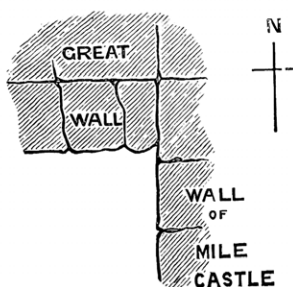


FIG. I.

point where this wall joins the Great Wall. The milecastle was either bonded into the Great Wall or was constructed before it. As only the foundation course survives, it is not possible to decide between these two alternatives, but it is certain that the milecastle was not

built up against a pre-existing wall. The presence of a healthy turnip crop prevented our excavating the milecastle further, but we very much doubt if further excavation would be profitable. The structure has evidently been robbed to its foundations.

The trench at the milecastle was supervised and measured by Mr. Booker and the present writer.

3. The supposed site of another milecastle at Walton, a mile west of the preceding, was also trenched. Here, at the south-east corner of the hamlet, is a mound contained by the angle of the modern road, in the corner of the field called Bendle's Croft, already mentioned, and this mound has usually been described as the remains of a milecastle. We were not able to find any definite traces. On the east side the elevation appears to be undisturbed ground; on the north our trenches sank five feet through very slightly mixed soil to the undisturbed ground below, and on the level of that we met a few scattered bits of freestone and cobble. The same result, at less depths, was yielded by trenches across the supposed line of the Wall between the mound and the Black Bull Inn. We hope to obtain better evidence next summer, but it is obvious that the site has been much robbed. How the mixed soil accumulated to a thickness of five feet, being purely soil and not débris of buildings, is a question for geologists.

The trenches here were supervised by the present writer.

4. There is on Gillalees Beacon, close to the supposed line of the Maiden Way, a lonely ruined structure of stone, which Mr. Maughan and others after him have held to be a Roman watch-tower. Mr. Maughan gives it no name; an estate map of 1830, belonging to Lord Carlisle, calls it Robin Hood's Butt, and the appellation seems to be still known in the neighbourhood.* We had long desired to excavate it, and an opportunity offered this summer. It

* There is also a Robin Hood's Well about 370 yards to the south-west of it.

proved to be a nearly square building, with walls 32-34 inches thick, and measuring externally on the north side 18 feet, on the east 19 feet 10 inches, on the south 17 feet, and on the west 20 feet. The walls are built of stones in regular courses; the highest part being on the west side, where the outer face shewed 10 courses and foundations, making in all 5 feet 9 inches. A considerable quantity of fallen stones lie around. In character the masonry seemed quite indistinctive, such as might or might not be Roman, except that a few stones and especially a quoin at the south-west corner suggested modern tools. There is no door or visible entrance anywhere; the interior is bottomed with clay which had probably been brought there, and the highly experienced drainer who dug the structure out suggested that it might be a reservoir for water. Certainly there is a small spring inside which hindered our operations a little. No minor remains of any sort whatever were found, unless two tiny bits of a red stuff, which might possibly be tile or brick. The ground all round the structure seems to have been very slightly hollowed when it was constructed, not in the manner of a ditch, but perhaps to provide the above-mentioned clay. The position of the structure is curious. It commands a wide-spreading view to south and west, as indeed does all the hillside near it. Many points of the Wall from Winshields to the Solway can be clearly seen from it, and in particular the site of the fort at Birdoswald, from which in turn the little mound which marks the ruin can easily be descried. But its view in the opposite direction is extremely brief. If ever it was a watch-tower, Roman or mediæval, it must have been reinforced by other watch-towers very near it on the north. But in the absence of any distinctively Roman features, it will be safer, for the present at least, not to ascribe to it a Roman origin. A suggestion has been made that it was a shelter in mediæval times for the beacon-watch on Gillalees Beacon: it is, however, at some little distance from the site usually assigned to the Beacon.

The excavation here was supervised by the present writer.

5. No minor objects of interest were found by us this year. We could not, indeed, expect any, for we were working far from forts or large Roman sites. We may, however, mention an interesting parallel to the leaden *glans* which we found in 1897 at Birdoswald. (Report for 1897, p. 200.) This is a rather smaller bullet of lead, weighing 43·8 grammes or about 1 7-12th oz. avoirdupois,



FIG. 2.

and represented full size in the accompanying figure. (Fig. 2.) It was found lately about 120 yards north of the Roman fort of Ambleside, and is the property of Mr. H. S. Cowper, to whose kindness I am indebted for a sight of it. It has a curious little hole on one side, shewn in the sketch, of which I cannot explain the reason. Similar holes, I believe, occur in other *glandes*.

III.—CHESTERS. (Plate II.)

Like most of the forts on the eastern section of the Wall, the fort at Chesters occupies a curious position in respect to the line of the Wall. It sits across that line, with a part of its area projecting northwards. The Wall does not coincide with its northern rampart, as it does with the northern ramparts of Housesteads and Birdoswald, but meets the eastern and western sides midway, at the south guard chambers of the north-east and north-west gateways. (Fig. 3.) The reason for the arrangement has often been discussed, and, among other guesses, the conjecture has occasionally been put forward that the northern part of the fort might be later than the original

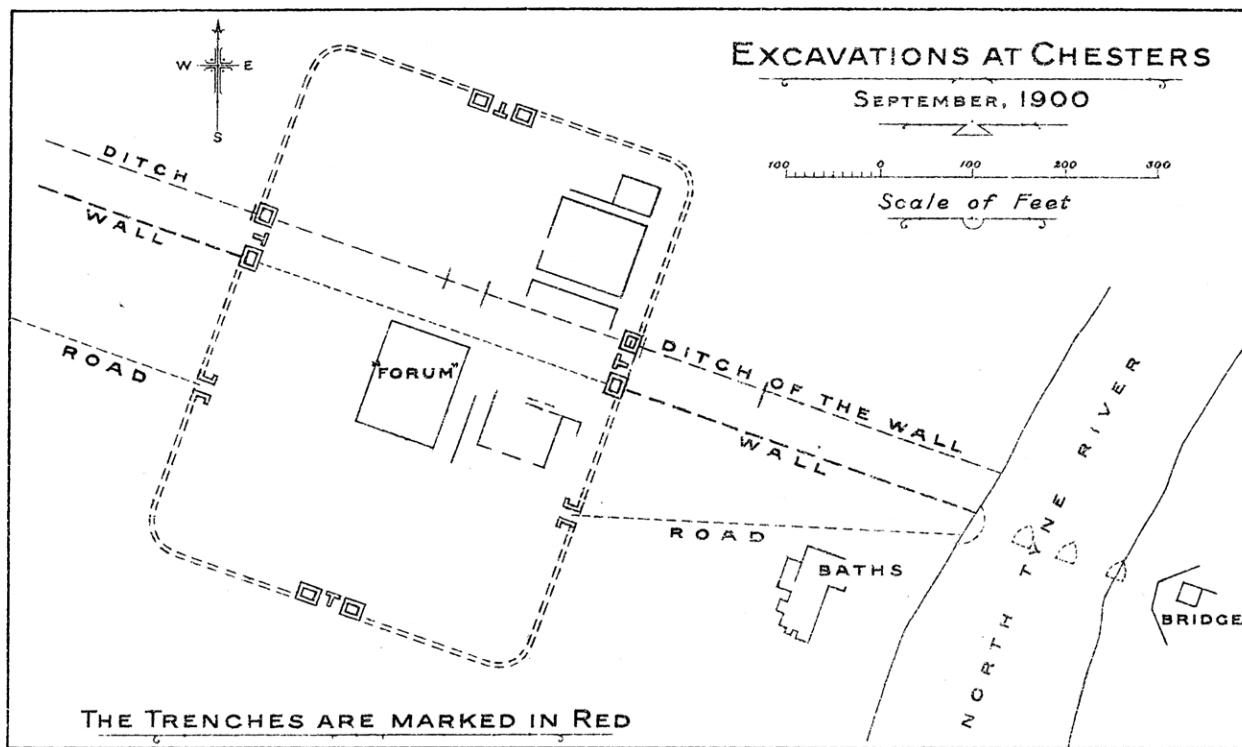
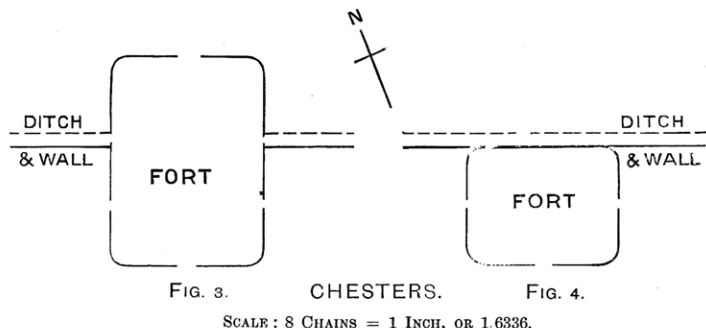


PLATE II. (See note p. 85).

construction of the Wall—that is to say, that in the first instance, the Wall and its ditch might have run straight on (as in Fig. 4); subsequently the Wall and ditch might have been destroyed and obliterated for a little distance, and the fort of Chesters constructed or reconstructed



in the shape in which we now see it. This theory can be easily tested. If a ditch once extended across the site, as in Fig. 4, and had since been filled up, a few trenches across its line will at once reveal its existence and its character. An opportunity for applying the test offered itself in September; Mrs. Clayton very kindly gave all required facilities and permissions, and the trenches were cut. The annexed plan shews the positions of these trenches. The most easterly was a preliminary precaution, intended to shew the general character of the ground and the subsoil (gravel), and in particular to reveal the width of the berm. Previous excavations by the late Mr. John Clayton had shewn the exact line of the Wall; it was desirable for us to ascertain the exact position of the ditch also, and this was given us when we found the berm to be 22 feet wide.* The next set of trenches were dug close to the north-east gate. A trench across its south portal shewed undisturbed subsoil at a depth of two feet;

* Plate II. is slightly misleading in this respect, because the draftsman, in making the gates clear, has made them a little too large and has therefore exaggerated the distance between the ditch and the wall.

a trench across its north portal seemed to shew disturbed soil, but was stopped by an inrush of water, and a trench inside the north-guard chamber was wholly prohibited by the same obstacle. However, a trench 13 feet outside the guard-chamber, on the line of the ditch, shewed disturbed soil to a depth of 8 feet, with some bits of Roman pottery in it and some "black matter," as usual, at the bottom.

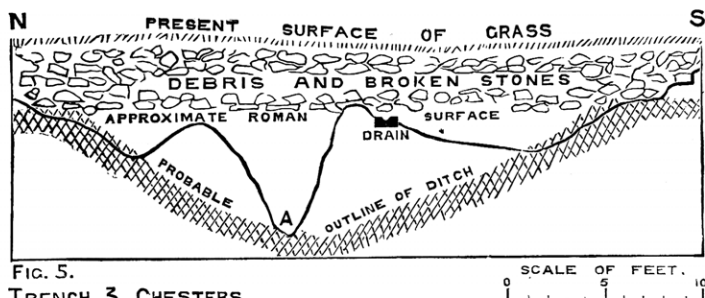


FIG. 5.
TRENCH 3, CHESTERS.

The continuous black line shows the extent excavated.

The part left blank is the ancient Ditch.

The cross-hatching represents the gravel subsoil, which has never been disturbed.

At A, the peat, leather, &c., were found.

The third trench, in the centre of the fort, revealed the ditch still more clearly. (Fig. 5.) Beneath a layer of stony débris, $3-3\frac{1}{2}$ feet thick, we found at each end of the trench the normal gravel subsoil, and in the middle the ditch, 27 feet wide. The subsoil at each end gave us approximately the surface level which the Romans found, though that level must actually have been a little higher for the subsoil must, of course, have been covered by a layer of surface mould. The actual edges of the original ditch must, therefore, have been a little higher than what we found, and the width of the ditch therefore a little greater than 27 feet. It was interesting to meet on, or just below, this Roman level a Roman drain *in situ*, running from S. by E. to N. by W.—that is, obliquely to the streets and ramparts of the fort, and also to the ditch. Beneath this level, the ditch was found to be filled principally with mixed gravel: under that came a thin stratum of blue

grey clay—(compare trench 9 at Walton, p. 80)—and under that again, at 7 feet 6 inches from the present surface, a substantial layer of peat, with traces in it of moss and of wood (alder and birch—one piece retaining its silver bark,* and looking as if cut by a knife), some animal's bones (a small piece of a deer's antler, etc.), a bronze nail, and some leather, which appeared to be a bag and a strap. This layer marked, as usual, the bottom of the ditch: below it, at a depth of nine feet, lay the untouched gravel subsoil. We did not think it needful to dig out all the ditch; nor, indeed, could we have done so without displacing the above-mentioned drain. Its shape was amply attested by the points actually excavated. It is not flat bottomed like the Vallum ditch, but V-shaped (as it is called) like the turf wall ditch at Birdoswald, the ditch of the Wall, and the ditch of the Vallum of Pius in Scotland. The steepness of the sides in these and other V-shaped ditches is, of course, very rarely, if ever, so great as that of the letter V. A further trench (No. 4) was dug a little west of the one just described, to shew the continuance of the ditch, and revealed its northern slope well preserved. Finally, a hole (No. 5), dug immediately outside the outer face of the north guard-chamber of the north-west gateway, shewed that the masonry does not rest here upon untouched subsoil, but on a layer of cobbles and other large stones.

The resemblance of the whole to Birdoswald, though not complete, is very striking. At Birdoswald, which like Chesters has six gates, the ditch of the turf wall was found to traverse the area of the present fort from the north-west to the north-east gateway, and the north guard-chamber of the latter stands upon that ditch, propped and supported by a mass of cobbles, just like the north guard-chamber in the fifth trench at Chesters. At

* A piece of birch retaining its silver bark was found under the rampart of the Roman fort at Ardoch (*Proceedings of the Society of Antiquaries of Scotland*, xxxii, 435, *Note*).

each fort we have a clear instance of two periods—an earlier and a later one. The difference between the two is this—that at Chesters the reconstruction involved only the projection of the fort beyond the earlier line, while at Birdoswald the whole line of wall was moved forward, both east and west of the fort, for a distance of some two miles.

It does not immediately follow that the reconstructions belong to the same period in each of the two cases. It is conceivable that the two are distinct, each due to its own local causes. But it is obviously not quite probable, and in this respect the new discovery at Chesters makes a striking contribution to our Mural researches. So long as the Birdoswald turf wall stood alone, no sound conclusions could well be based upon it. But now beside the original turf wall and later fort and wall of stone at Birdoswald, we can place an original line (of unknown character, it is true) and a later fort and wall of stone at Chesters. And we can add from the immediate vicinity of Chesters a third example, which might before have been preferably explained by local reasons. The bridge across the North Tyne is notoriously a double bridge—part of it is a relic of an earlier bridge, the rest a later and larger structure.* And the Wall is certainly not earlier than the second bridge. Here again, then, we have the existing stone wall identified, more or less, with a secondary period of construction. Different minds will estimate the weight of these facts differently. Perhaps the wisest course will be to seek for yet more evidence of the two periods which the joint testimonies of Chesters and Birdoswald have now brought out of the region of pure guess-work into that of serious criticism.

The excavations at Chesters were supervised by Mr. R. C. Bosanquet, Mr. T. H. Hodgson, and the present writer.

* Sheriton Holmes, *Archæologia Aeliana*, xvi. 328.

EXPENDITURE, 1900.

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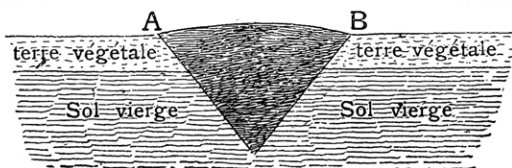
The labour was paid for out of Oxford subscriptions; the compensation by the Cumberland and Westmorland Society out of the residue of the £100 voted in 1894. Of this sum only £4 3s. 5d. is now left. The special gratuity was voted to Mr. John Nichol in recognition of his long and valuable labours in our excavations. The expenses of the work at Chesters were defrayed from a different source.

APPENDIX.

The following passage is an extract from a letter by the distinguished French archæologist and excavator, Colonel Stoffel. The letter is printed by Mr. T. Rice Holmes in his admirable volume on *Caesar's Conquest of Gaul*, and explains the method by which the writer discovered and traced out some of Caesar's encampments in Gaul for the Emperor Napoleon III. This method is precisely that which we have followed in the excavations described in our Reports. It is by no means a method which is confined to ourselves and Colonel Stoffel, but it is less well understood than it ought to be, and the lucidity of Colonel Stoffel's explanation made it seem deserving of reproduction. We are indebted to Mr. Holmes for permission readily accorded to reproduce the extract, and to his publishers, Messrs. Macmillan, for a loan of the blocks with which it is illustrated.

“ Vous désirez savoir par quelle méthode j'ai retrouvé les traces des camps que l'armée de César construisit dans la guerre des Gaules. Il est nécessaire de commencer à indiquer quelques notions préliminaires. Les terrains dans lesquels ces camps furent

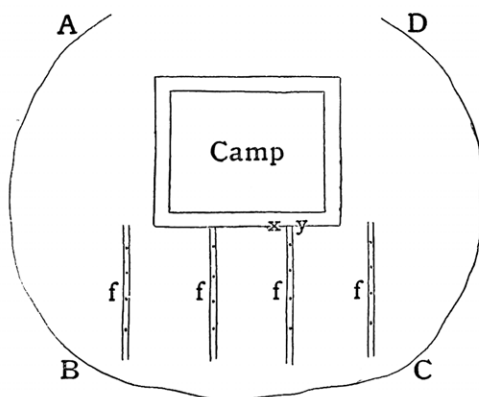
établis présentent, comme tous les terrains cultivés, une couche supérieure de terre végétale, appelée *humus*, laquelle varie d'épaisseur selon les différentes contrées, et peut avoir depuis un ou deux pieds jusqu'à quatre ou cinq pieds et plus.



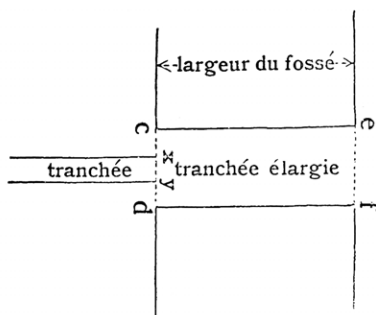
“ Au dessous de cette couche de terre végétale se trouve le terrain vierge (ou le sous-sol), qui est, selon les contrées, ou marneux, ou siliceux, ou calcaire. A Alesia (dans la plaine des Laumes) c'est de la marne épaisse et ferme; à Berry-au-Bac c'est une marne plus légère; à la Roche-Blanche (en face de Gergovia) c'est un calcaire ferme et blanc. Lorsque, après une bataille, ou après un siège, l'armée romaine quittait son camp, les habitants du pays en détruisaient les retranchements afin de pouvoir de nouveau cultiver leurs champs. Ils rejetaient les terres du parapet dans le fossé. Ce fossé était, de la sorte, plein d'une terre mélangée, composée de terre végétale, de terre vierge, et souvent d'objets que les soldats romains avaient pu laisser sur le parapet, tels que débris d'armes, boulets en pierre, monnaies, ossements, etc. Pendant quelque temps la partie supérieure du fossé comblé présentait la forme AB (slightly convex), à cause du foisonnement des terres; mais avec le temps, et grâce à la culture de chaque année, elles se tassaient au niveau du sol avoisinant, ce qui fait que partout les traces des camps de César ont disparu. En tout cas, la terre de remplissage des fossés est une terre meuble et, fait important à remarquer, elle reste meuble, sans jamais reprendre la consistance du terrain vierge, si bien qu'aujourd'hui, après 2000 ans écoulés, elle se détache aisément à la pioche. C'est là ce qui permet de retrouver les fossés lorsqu'on a su déterminer l'emplacement d'un camp.

“ Cela posé, voici comment j'ai toujours procédé pour retrouver les fossés d'un camp. Soit ABCD une étendue de terrain dans laquelle je supposais placé le camp qu'il s'agissait de découvrir; et admettons, pour fixer les idées, que la couche de terre végétale ait 70 centimètres d'épaisseur. Je plaçais les ouvriers, avec pelles et pioches, sur plusieurs files *fff.*, dans une direction perpendiculaire à un des côtés supposés du camp, les ouvriers de chaque file à 20 ou 30 mètres les uns des autres. Chacun d'eux était chargé d'enlever

la couche de *humus* sur deux pieds de largeur. Si, après avoir enlevé cette couche sur 70 centimètres de profondeur, ils sentaient



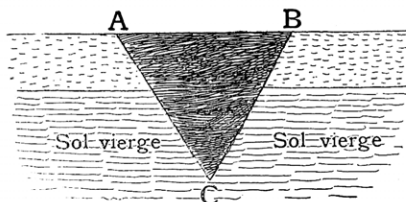
que leurs pioches frappaient un terrain résistant, c'est que celui-ci n'avait jamais été remué et qu'on n'était pas sur le fossé romain. Les ouvriers continuaient alors à avancer, et cela tant qu'il ne se produisait rien de nouveau. Mais lorsqu'ils arrivaient, sans s'en douter, sur le fossé en *xy*, c'était autre chose. Alors, après avoir enlevé la terre végétale jusqu'à la profondeur de 70 centimètres, ils ne trouvaient plus, comme précédemment, un sol vierge résistant ; au contraire, ils recontraient une terre meuble qui se détachait facilement, ce qui permettait de supposer qu'elle avait été autrefois remuée. Je faisais alors élargir la tranchée en lui donnant six



pieds de largeur (*cd*) au lieu de deux pieds (*xy*), afin que les ouvriers pussent travailler plus commodément ; et ils approfondissaient la

tranchée jusqu' à ce qu' ils recontrassent le sol naturel. D'ailleurs on reconnaissait bientôt si on était, oui ou non, sur le fossé romain ; car, si on y était réellement, on distinguait sans peine sur les deux bords *ec* et *fd* de la tranchée, à droite et à gauche des ouvriers, le profil du fossé qui se détachait par la couleur de terre vierge qui l'encadrait.

“ Je n'ai rien vu de plus curieux que les profils des petits fossés du petit camp que j'ai mis à découvert sur la colline de la Roche-Blanche. Là, la couche de terre végétale, épaisse tout au plus de 50 à 60 centimètres (si j'ai bonne mémoire), repose sur un sol de calcaire dur et blanc comme de la craie : aussi les fossés du camp,



remplis d'une terre mélangée de humus et de craie, présentaient-ils des profils qui tranchaient sur la terre dont ils étaient entourés aussi nettement que le triangle ABC ci-contre tranche sur le papier blanc.”