

ART. XX.—*Notes on the Excavations on the line of the Roman Wall in Cumberland, in 1894 and 1895.* By MRS. HODGSON, Newby Grange.

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DURING the excavations carried on in 1894 and 1895 along the Wall and the adjoining earthworks in Cumberland, I accompanied my husband to every trench which he was surveying and measuring, in order that I might myself take notes concerning the colours of and the lines followed by the different earths before making my drawings from his measurements. Very careful observation was necessary, and I have thought it well to put down some notes of what I saw. I have no knowledge, except by mere hearsay, of the historical evidence which has been collected, and only wish to record the facts I have myself observed, and to give expression to the conclusions which I thought might logically be drawn from them. I began with no theory at all, and am not concerned to attack or defend any. I think the notes will be best arranged by dividing the subject into five parts:—1, The Vallum; 2, The Turf Wall; 3, The Stone Wall; 4, The Road; and 5, a *Note* on the Quarry at Bleatarn.

I. THE VALLUM. i. BRUNSTOCK. 1894.

Taking the sections which have been made in Cumberland across this great earthwork in order from west to east, we begin with those cut in July, 1894, in Brunstock Park.* In a long trench cut right across the works from north to south the surface began to rise for north mound of the Vallum 226 feet south of the foundation of the Wall. Here, 2 feet 6 inches below the surface, was the bottom of a small semi-circular ditch, 18 inches wide, lined with blue clays, in a red subsoil. It was thought by some to be the Boundary Ditch

*These *Transactions*, Vol. xiii., Art. xxxix., Plates I and II.

occasionally

occasionally found on the German *Limes*, but this remains uncertain. A few insignificant objects were found in it. It has not been seen elsewhere during the excavations, unless possibly in the White Moss Field (see p. 393.) The soil here was a stiff clay, and perhaps gave in consequence a clearer idea of the method of construction than any other section. At the time we were rather puzzled by the varying colours of this clay—red, reddish yellow, and whitish or bluish grey—but after comparison with the sandy loams, &c., in other sections, and after learning from Professor T. McK. Hughes, F.S.A., that decomposing vegetable matter seems to absorb or destroy the colouring of adjacent earth, I have come to the conclusion that the clay was all the same in itself, and that its discoloration was due to the above cause. The subsoil generally appeared red, but yellower at the south end of the section. On this lay a line of dark bluish grey clay with the whitish grey immediately beneath it. The microscope showed all to be very much the same, but there were tiny fragments of black amongst the clay from the dark line, leaving no doubt in my mind that this was carbonized matter representing the original surface of turf. This line extended for about 30 feet under the north mound of the Vallum, and from 4 feet to 12 feet 6 inches south of the beginning of it the section showed a ridge, 16 inches high at its summit, of the light bluish grey clay lying on the dark line. It had red clay on both sides of it, and a small wedge of this was under its base at the northern edge. Further south the dark line was surmounted by a mass of clay, red, yellow, and bluish grey mixed. From this end of the dark line for about 30 feet there was a break in the red clay subsoil, the lines sloping rapidly as for the sides of a ditch, the hollow being filled by light bluish grey clay, apparently washings of the ditch, covered by about 2 feet of yellow clay, which seemed as if it might have slid from the mounds into the ditch. Measurements indicated a ditch 30 feet wide at the top and 15 feet wide at the bottom, which would be about 5 feet below the original surface line. The axis was 306 feet south of the foundations of the Wall: 22 feet south of the axis the dark line reappeared as before, and extended, with the grey line under it, for 49 feet. This time there were two grey ridges lying on it, the smaller 4 feet 3 inches wide and 12 inches high, the larger, further south, 6 feet 6 inches wide and 17 inches high. Small wedges of red clay showed again under the base of this ridge. The space between the ridges and on both sides of them was filled by red clay, flanked again by mixed red and yellow clays. The surface falls to its natural level a few feet south of where the dark line ends, and here the trench ceased. Several other trenches were cut in the park, for the most part confirming the results of the principal trench.

I. THE

I. THE VALLUM. ii. WHITE MOSS. 1894.

The next cuttings made were on White Moss,* a common near Wall Head in the parish of Crosby-on-Eden. The Wall is under the modern road, and 247 feet south of this the ground begins to rise for the northernmost ridge of the Vallum, which here seems to consist of four mounds. The outer mounds are low and show little distinctive feature, if indeed they belong to the Vallum at all, and are not merely the result of peat digging. The outer northern mound has the black line definite; indeed it is double, with a little white sand between. But in the outer southern mound there is no line at all, and the surface peat lies on the reddish-yellow sandy subsoil. About 3 feet below the surface are the remains of a tree, apparently very ancient, with roots or branches, imbedded in the sand. The depressions between these flanking mounds and the principal mounds are almost exactly on the normal ground level, and have no colour or line between the surface peat and the yellow sand of the subsoil. The middle depression, on the other hand, though filled up on the surface to a much higher level, shows by the sharp fall, on both sides, of the line joining the dark grey and black peat with the yellow subsoil, that a deep ditch has existed here. This ditch, filled as it is with black peat, is now only about five or six feet wide, but the soil is very soft and it may have become compressed. The north side of it has crumbled down a good deal. But it can never have been of anything like the same dimensions as at Brunstock. The two principal mounds show each an underlying ridge as at Brunstock, but here they are of yellow and grey sand, and are covered with a thick layer of dark grey peaty sand, yellow sand, and old black peat, which last forms a wedge under the corners of the ridge-sections as at Brunstock. Over all is a layer of more modern surface peat.

I. THE VALLUM. iii. WHITE MOSS FIELD. 1894.

A portion of the White Moss east of the main trench has been enclosed, and through it the line of the Vallum runs, but not the Wall or the Road. The western end of the field is mere bog, but at the eastern end the ridges of the Vallum are perceptible, and a trench was cut here. But owing to the confusion between the mounds and depressions of the Vallum and those of former ploughlands which crossed them at a small angle, very little could be gathered with any certainty. We crossed at least four small ditches

* These *Transactions*, Vol. xiii., Art. 39, Plate III.

filled

filled with black soil, but their shallowness and direction led most of us to think them mere plough-drains. It was, however, a curious coincidence that in the northernmost of these, corresponding in position to the possible frontier-ditch at Brunstock, a piece of agate was found by Mr. Calverley. The Vallum trends a little away from the Wall as it goes eastward.

I. THE VALLUM. iv. BLEATARN. 1894 AND 1895.

About a quarter of a mile east of the main trench (ii.) on the White Moss a gate leads across the Bishop's or Baron's Dyke* into the field known as Bleatarn Park.† At the west end of this the ground is low and marshy, with the modern road on a ridge which formed the foundation of the Roman Wall, whose site the road still occupies. The rise in the surface for the Vallum ridges begins nearly 300 feet south of this.‡ The ridges were again four in number, and this time, in Trench A on the map, it was certain that all of them had been deliberately constructed.§ The flanking ridges, which were not cut completely through, were again the smaller and lower. The northernmost showed layers of grey clayey sand and yellowish red gravel, lying on old black peat. The ridge was capped with the gravel, covered by seven or eight inches of modern surface peat. The old black peat rested on a red subsoil, probably the same red and yellow sand which so often forms the subsoil in this district. The ridge was about 14 feet wide. The southernmost ridge was very similar and quite as wide, but the line of old black peat was much thinner and not so far below the surface. It rested on grey sand at the south and on yellow clay at the north side. (This clay is in a similar position, as regards the Vallum ditch, to a wedge of undisturbed red clay seen afterwards in section D on the map, and the gravel on the top of the mounds resembles the upcast there also.) The depression between the two northern mounds appeared, as at White Moss, to be undisturbed natural surface. The depression between the two southern ridges had a line 18 inches thick of grey peaty sand between the surface peat and the yellow clay mentioned above. It left a shade of doubt in our minds whether this depression had been excavated in

* These *Transactions*, Vol. xiv., Art. v.

† *Ibid.*, Vol. xiv., Art. x., Plate VI. (Map.)

‡ In these *Transactions*, Vol. xiii., Art. xxxix., p. 463, their distance is given wrongly as 250 feet. The error is mine, from a miscalculation from an unfinished outline by the City Surveyor. The finished outline corresponded with later measurements.

§ These *Transactions*, Vol. xiii., Art. xxxix., Plate V.

earlier

earlier times, but it seemed much more likely that the yellow clay was the undisturbed ancient surface, and that the grey peaty sand had slid down on to it from the mounds. The middle ditch of the Vallum was more like that of White Moss, narrow, deep, and filled with black peat as far as we could see: the inrush of water stopped us. The inner and principal northern mound had a black line more than 20 feet in width lying on the reddish yellow subsoil, and covered for some 13 feet by the section of a ridge of reddish yellow and bluish grey sand, 20 inches high at the summit, and 12 inches below the present surface. On its north flank was a streak of yellow clay, and on its south a streak of gravel, both probably upcast which had slid down the sides of the mound. On the other side of the ditch the principal southern mound rested on black peat overlying a flat level surface of red sandstone rock, beginning 7 feet south of the axis of the ditch, and traceable for 16 or 18 feet southwards. At the north side of the mound there was a mixture of grey sand and peat, 14 inches deep, lying on the rock, and over this a strongly-marked but very thin black line, such as generally represents the ancient natural surface. On the southern half of the rock there was black peat only, 8 to 12 inches deep. Mixed light and dark grey sand lay about 27 inches deep over the whole of this black line and peat, but on the southern half the curves strongly suggested a ridge-section of the usual type, while the northern half seemed to have slipped down from above this ridge. This would, perhaps, mean that the thin black line represented the surface of a berm. The works of the Vallum extended over a width of only 104 feet.

East of this trench the natural surface of the ground rises rapidly. The middle depression of the Vallum is strongly marked on the slope, but ceases to be traceable soon after the top is reached, the upper part of the field having been evidently levelled in later times. The side depressions disappear on the way up the slope, the northern one 28 or 29 feet from the western trench, the southern 100 feet or more further on. The two ridges on each side of the main ditch appear in fact to have run into one, if we may judge from the contours of the present surface, but Mr. Haverfield thinks that indications in another section (D on the map) show that the four mounds continued up the slope.* This section was cut in 1895 across the axis of the Vallum ditch and its mounds, 270 feet east of the Baron's Dyke. At the extreme south end of the trench the surface soil, a few inches deep, rested on a layer of dark red-

* These *Transactions*, Vol. xiv., Art. x., Plate IV.

dish grey sandy loam, looking at first sight like clay. Two feet north of this the layer was at a depth of one foot, the space between and the surface soil being now filled throughout most of the trench by a layer of reddish grey sand, generally containing waterworn stones and gravel. It was the opinion of Mr. Goodchild, F.G.S., that this had been put on the mounds by the hand of man, and had afterwards slid down into the ditch. Between it and the darker sandy loam were slight and fragmentary traces of black matter, some showing fibrous structure when under the microscope, which was taken to indicate the original surface line. The section of the south mound under the dark sandy loam showed a stratum of bright red and yellow sand with a wedge of red clay running into it, the whole lying on some very large blocks of red sandstone, all below the black line being undisturbed. At 12 feet south of the axis the line at the top of the bright red sand curved sharply, falling almost vertically at 4 feet 6 inches south of the axis, and resting on some more sandstone blocks six feet below the surface. The dark grey sandy loam here gave place to white sand and bluish grey sand which, as it fell lower, contained increasing traces of black peaty matter. The peat was very strong five feet below the surface till within two feet south of the axis; after which it was not traceable till two feet north of the axis, the bluish grey sand filling in the ditch. It was doubtful whether we had quite reached the bottom of the ditch, which is here on a large scale, but further excavation became dangerous. Large sandstone blocks lay at the bottom of one cutting, but they might have been thrown up on the sites of the ditch by the original workers, and have slid down when the Vallum was deserted. North of the axis the strata rose as before, but in inverse order. At 10 feet north of the axis an almost vertical face of red sandstone fragments imbedded in sand, all small and flat and of curiously regular size, lying in horizontal layers, rose two or three feet above the sandstone blocks. This layer was capped with yellow sand, and a few sandstone blocks lay on it at the bottom of the sand. They seemed to have lain on a rather narrow berm, in which case the otherwise undisturbed yellow sand must have been squeezed down upon them later. Above this the bluish grey sand which fills the ditch gave place to the dark grey sandy loam, this again being covered by the reddish gravelly sand and surface soil which have continued across the ditch. Here, 15 feet north of the axis, a thin line of black and white sandy matter ran for about four feet north, and was again taken to represent the original surface. About 31 feet north of the axis the waterworn stones in the reddish gravelly sand were very numerous. This seemed

seemed to be about the middle of the mound, and if there were two north mounds the stones would indicate the depression between them. The absence of the black line is inconclusive, as it must often have existed where it is no longer to be traced. From 41 feet north to 44 feet north of the axis it reappears, and immediately north of this the strata indicated an artificial cutting to the north, which other trenches proved to be an ancient quarry (see p. 406.)

A trench (C on the map) only 18 feet long, was cut about 22 feet west of the last, in hope of explaining a piece of rising ground which here crosses the Vallum ditch and brings it nearly to the level of the mounds. At the north edge of the south mound the vertical drop of the bright red sand to a depth of about six feet six inches was very marked, the bluish grey sand coming against it as in trench D. The surface soil and reddish gravelly sand appeared as before, with bluish grey sand below in the middle of the ditch. A dark line beginning at the north end of the trench and curving downwards as for a shallow ditch showed an earlier surface of some sort, but the date could not be determined. The trench began to fall in and was filled up, but the excavators came to the conclusion that the rise across the ditch had been caused by the north mound falling in towards the ditch after the Vallum had been deserted.

The trench (E on the map) cut in 1894 by Mr. Calverley, showed, in the part that crossed the Vallum, very similar features to trench D. It was excavated to a depth of 10 feet 6 inches below the surface at the axis of the ditch without touching rock, though blocks were found at the sides, but probably some of this was undisturbed subsoil. In this case the ditch must have followed a natural cleft in the rock here, as its bottom is four or five feet below the rock-level.

A trench (B on the map), was cut from about the axis of the northern mound of the Vallum northwards for 40 feet. At its southern end it presented the usual layer of surface soil, reddish gravelly sand, dark gray sandy loam and bright red sand, but at the highest point of the mound the reddish gravelly sand gave place to bright red sand, so exactly like that of the subsoil as to make it rather difficult to believe that one had been disturbed and not the other. However, though the "black line" was missing, the dark gray sandy loam which generally occurs immediately beneath the black line was just the same as usual in character, with black particles, some like coal, imbedded in it, and further north the bright red sand gave place in its turn to quarry rubbish, so that it is possible that the red sand was thrown up from below, and had settled in the course of many hundreds of years to its present appearance.

I. THE

I. THE VALLUM. v. APPLETREE. 1895.

East of trench A at Bleatarn the ridge-sections, so well marked previously, are no longer to be traced. I thought I saw them in a section at Highfield near Old Wall, but had no opportunity of studying them carefully. They were not visible at Appletree, where, one-and-a-quarter miles west of Birdoswald, the next section I have seen was made. The Vallum is on a very large scale here, but the section merely showed a mixed reddish upcast lying on a white line (the black line which lies between them being very fragmentary) about 27 feet wide in the north mound and 24 feet wide in the south. The distinctive feature was the appearance of an extremely small mound on the verge of the southern scarp of the ditch. It had a black line three feet in width dividing it from the yellow and red subsoil, but the upcast was different in colour and kind from that in the two principal mounds—more mixed, and more difficult to distinguish from the ordinary surface soil. This was only 18 inches deep, while the upcast of the north mound was 5 feet, and of the south mound 4 feet 6 inches. The ditch was not excavated. Specimens of the various coloured earths from this trench were submitted to Professor Hughes, who pronounced them to be all the same natural soil, acted upon by decaying vegetation and mixed by disturbance.

I. THE VALLUM. vi. GILSLAND VICARAGE, 1894.

At Gilsland, in the Vicarage garden, the sections were very different.* The north mound is on a small scale (the south mound has been destroyed in making the schoolyard) but shows the core to consist of large rough stones (12 by 10 inches and 10 by 9 inches, and such like) lying amongst mixed reddish grey gravel on a bed of loam, between the two being fragmentary indications of the "black line." A trench † 23 feet east of this, and lower down the slope on which the Vallum lies, showed the stone core in more concentrated form, as though a ridge had been deliberately built, perhaps to strengthen the mounds on the slope. Northwards was found a thin layer of black matter, as though a pool or moss might have formed here and led to the deposit of decomposed vegetation. North again of this was another much smaller ridge of stones.

In course of examining and drawing these sections one impression has fixed itself firmly in my mind: that the

* These *Transactions*, Vol. xiii., Art. xxxix., Plate VIII.

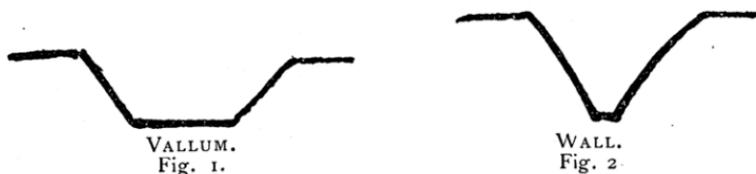
† *Ibid*, Plate X.

builders of the so-called Vallum cared very much for the construction of the ditch and not much for anything else. The mounds vary in number, position, dimensions, and construction. The land having been ploughed in most places will account for lowering and spreading the mounds and filling the ditch, but it will not account for the existence or absence of space between the mounds and the ditch, for cores or no cores, for two mounds or four mounds, or for a measure of 104 feet over all at one section in Bleatarn Park and 170 feet at Brunstock. The ditch appears to be always the same in design, though not always equally wide, and probably not always equally deep.

I am inclined to think that the builders of the Vallum must have generally begun their work by deciding on the width of the ditch, and, digging up the turf and (discoloured) soil on its surface, have laid it in lines at such a distance from the proposed scarp of the ditch as to prevent the risk of any further upcast rolling back into the hollow. These lines of mixed turf and soil would be likely to form themselves into the light grey ridges with irregular black streaks in them, which we often saw. Over these would be piled the spoil from the ditch as it was excavated, the mounds therefore showing all the various strata in inverse order to that in which they are seen at the sides of the ditch. Water and vegetable matter would accumulate in the ditch, forming the masses of dark and light grey peaty soil found in almost every section. After the desertion of the Vallum large masses of soil from the mounds would slide down and partly fill the ditch, thus accounting for the upcast being often found next below the present surface of the ditch as well as of the mounds.

The shape of the ditch, whenever the excavators could get deep enough to judge, seems to have been flat bottomed with shelving sides, about as wide at the top as the fosse

fosse north of the Stone Wall, much wider at the bottom, and not so deep :



II.—THE TURF WALL.

A road from Lanercost to Gilsland, passing Birdoswald (Amboglanna), ascends a steep hill and crosses the site of the Vallum about a mile from Lanercost, near to Banks. From this point it runs for two-and-a-half miles on the site of the Stone Wall, whose foundations are often visible in the roadway. Near to a farm-house marked as Wall Bowers on the map,* a large and well-defined ridge, with a deep ditch running on its north side, starts on the south side of the road and runs nearly parallel to it, but slightly more southward, for a mile and a half, the ditch at least being easily traceable to within a few hundred yards of Amboglanna. South of this ridge the Vallum is clearly marked all the way, and these two works are almost exactly parallel.

Excavations † in 1895 ‡ showed that the ridge was the remains of a wall built, like the Antonine Wall, of turves. The principal section cut was at Appletree, where, in the field south of the road, the ground falls rapidly to a small watercourse, and then rises again till a point 315 feet south of the Stone Wall is reached, and here a trench began, and was carried across the whole of the earthworks. A fragmentary black line, with disturbed reddish soil above it, and red and yellow undisturbed subsoil below, showed the extent of a

* These *Transactions*, Vol. xiv., Art., x., Plate I.

† Excavations in 1896 show that the ditch of the Turf Wall certainly came within 200ft. of the Station, and probably touched it. (See Art. xxii of the present Volume).

‡ These *Transactions*, Vol. xiv., Art. x., Plates II. and III.

glacis

glacis about 45 feet wide, whose summit was two feet above the natural surface indicated by the black line. The ground then fell towards a fosse, whose axis was 385 feet from the road and Stone Wall. The shape of the ditch had been nearly that of a V, but with a flat bottom, 18 to 24 inches wide, nine feet or more below the ancient surface. Its form exactly resembled that of the fosse north of the Stone Wall (see p. 403). South of this ditch the subsoil of red sandy loam is capped with a black line, sometimes double, and one or two inches thick, extending for nearly 30, and, in some other sections, perhaps 40 feet. From 18 to 23 feet in the middle of this, or rather towards its southern extremity, is again covered with lines of alternate light grey sand and black carbonaceous matter, indicating the remains of a wall built by laying turves one on the top of another. The sods had been cut with feather edges, not angular as we cut them. They had then been laid in a row, green side downwards (fig. 3) and another row above this, in the hollows, so as to "break the joints" as in brick-work, each turf in this row being bent and almost broken by the weight above it (fig. 4).

Fig. 3.



Fig. 4.



This effect was noticeable in several places, but of course in many parts of the sections the black and white were too much mixed and broken up to trace the sods clearly. In some places seven or eight rows could be counted one above another, but it seemed as if the wall had been partly at least demolished intentionally. The whole is covered by a thick layer of reddish soil.

I was much struck by the total difference in the method of construction of the Turf Wall and the Vallum. Instead of mere upcast from a ditch, the southern ridge is a most carefully-built structure, with a berm, ditch, and glacis exactly

exactly resembling those of the Stone Wall; so exactly indeed, that if the theory finds favour that the Turf Wall once ran from sea to sea, no better reason is needed than the existence of such a ditch and general substructure, for choosing exactly the same line for a later wall of stone. The reason for divergence here might possibly be found in the landslips which have carried away part of the Vallum, though when these occurred we do not know. They still continue, but some must have occurred at a very early period. If the builders of the Stone Wall diverged at all from the Turf Wall at Birdoswald, they could not possibly, owing to the nature of the ground, rejoin it before reaching Wall Bowers.

III.—THE STONE WALL.

There is now but little left in Cumberland of the Wall and its Mile Castles, which once began as far west as Bowness-on-Solway and extended to the Poltross Burn, and so across Northumberland.

A fine piece has been carefully cleared in the grounds belonging to the Vicarage near Gilsland railway station. On its south side four or five courses of stones are clearly marked,* the lowest projecting slightly in places and leaving it uncertain whether it were an ordinary course or a footing. Then comes a footing 5in. wide and 8in. high. Below this is a projecting surface 23in. wide, which a trench showed to be 9½in. high, and below it again was a layer of stone 10in. wide and 6½in. high. The Wall itself is about 7ft. thick, but as its northern base is covered with earth, the width of the northern footing could not be here ascertained. The layer 23in. wide gave rise to some discussion as to whether it was a foundation course or a footpath along the Wall. At Brunstock a similar pavement was found, about 20in. wide, but it was at least 5ft. south of the mass of concrete which was all that was left of the Wall itself. Indeed the Wall has so completely disappeared that it is impossible to say exactly where the south face was. In a trench at Bleatarn,†

* These *Transactions*, Vol. xiii., Art. xxxix., Plate VII. and Fig. 3.

† These *Transactions*, Vol. xiv., Art. x, Plate VI.

(H on the map) a wide stone touched the remains of the Wall,* but these were so dismantled that we could not feel certain that any of the facing-stones were *in situ*, and indeed the stones were so rough and rounded that it seemed likely that we had only touched the core of the Wall, and that the facing-stones had rested on the wide stone which so closely resembled the pavement. There was something like it at Chapelfield, but I did not see the traces of the Wall itself, and do not know how far it was from the pavement. I heard that the pavement was seen at Hare Hill.†

The facing-stones of the Wall, wherever visible, are well-dressed stones, not perfectly regular in size, but laid in well-defined courses, which follow the slope of the ground unless it is too steep for them to retain their position, instead of being laid horizontally as in modern work. The middle of the Wall at Gilsland was filled with irregular stones imbedded in mortar, much like the remains exposed at Bleatarn and elsewhere. We were shown one or two coping-stones at Gilsland, but not *in situ*.

We noticed that there is generally a fairly level surface of apparently undisturbed soil some feet in width, a little below the modern surface, both north and south of the site of the Wall. Both were seen at Brunstock, the north one in a trench † (G on the map) cut from the Wall across the north fosse, and both north and south in another trench, (H) § cut across the site of Wall; and its existence is evident whenever measurements are taken of the modern surface where the traces of the Wall and fosse are distinct. In the sections it was generally indicated by a line of black or very dark matter overlying another line almost colourless, but otherwise of the same nature as the subsoil next under it. This, no doubt, represented the ancient surface of turf, or sometimes a marshy pool that had lain near the Wall. The width of this level surface *north* of the Wall seems to have varied somewhat. At Brunstock and Bleatarn it seemed to have been about 23ft. from the Wall to the top of the scarp of the ditch. In all three of the sections named above which were cut across this level surface, we found a heap of red sandstone debris lying some feet from the Wall. There were large and small stones, mostly rough and broken, as though those who had despoiled the Wall of its well-dressed facing-stones to build with elsewhere, had thrown out the stones for which they had no use towards the ditch. I saw one

* These *Transactions*, Vol. xiv., Art. x., Plate VII.

† We thought we saw it again at Birdoswald in 1896.

‡ These *Transactions*, Vol. xiv., Art. x., Plate VI.

§ These *Transactions*, Vol. xiv., Art. x., Plate VII.

dressed

dressed stone 16in. in length, one end 8½in. by 13½in., the other 5in. by 5in.

The fosse itself is generally of considerable width at the present surface, varying from 35 to 70 feet. Where it is fairly well marked, (which is throughout a great part of its course) the bottom of the ditch is now from 4ft. 6in. to 7ft. or even more below the ordinary surface. I think the sections at Brunstock and Bleatarn (G) were the only cuttings made across it, and the one at Bleatarn was not surveyed. The bottom of the original ditch may have been reached here (I find a note in my book, "Red sand at bottom below black peat," which looks as if the subsoil had been touched—but I was told this, the trench having been partly filled up before I got there). It was certainly not reached at Brunstock, water draining in and preventing further excavation. I have no certain measurements, but am left with the impression of a V-shaped ditch, possibly rather flat instead of pointed at the very bottom, exactly like that of the Turf Wall, where it was thoroughly excavated and carefully measured.

Both sections indicate that the earth from the ditch was thrown out to the north, where a mass of disturbed soil, like the subsoil of the ditch, lies on a black line of ancient vegetation. There seems to have been a not very wide flat surface or "covered way" between the *glacis* thus raised and the counterscarp (north) of the ditch. The surface levels everywhere indicate a *glacis* and generally suggest, as did the section at Bleatarn, that the south face of this was decidedly steeper than the north, which sloped away towards the natural surface. The fosse is now filled up with black peaty soil, such as one would expect to find in a deep ditch.

IV.—THE ROAD.

Several of the trenches cut have been carried across the ground between the Wall and the Vallum, in hope of finding the Roman military way which is known to have run south of the Wall but not far from it.

At Brunstock this road was found nearly 30ft. from the mass of concrete which represented the foundations of the Wall.* It was 21ft. wide, composed of loose sandstone fragments with large stones at its axis and edges. To the north of it was a very shallow ditch with black mud at the bottom, 10ft. wide, and south of the road were

* These *Transactions*, Vol. xiii., Art. xxxix., Plate I. (Map).

traces

traces of a similar, but probably narrower ditch, broken into, at the point trenched, by a modern drain. The large stones in the middle were on a decidedly higher level than those at the sides, and would maintain the curved surface of the road. A trench at the west side of the park showed the road again. At White Moss it was traced in several trenches. In the principal section it was found 11 ft. from the edge of the Wall.* The original surface of the soil was shown by a layer of black peat 4 in. thick, lying on the sandy subsoil; on this was a layer of grey sandy clay, 6 in. thick and 27 ft. 6 in. wide. Here a double kerb of large stones in the middle of the road, and a kerb at each side, were even more clearly seen than at Brunstock. The rest of the road was covered with a layer of gravel and stones 10 in. thick and 22 ft. 10 in. wide, the stones near the bottom of the layer being larger than the rest. The whole is covered with modern peat 2 in. thick. On each side of this road was a small ditch filled with block matter, the north one 3 ft. wide and 2 ft. 2 in. deep, the south 1 ft. 6 in. wide and 1 ft. 2 in. deep. The Vallum lay 107 ft. further south.

At Bleatarn the road was sought for in vain. It goes close up to the Baron's Dyke (see p. 393,) but eastward it cannot be found. A carpenter living near says that at one time there were large piles of ancient wood in the tarn between the mound and the Wall, whence the homestead takes its name.† He cannot say if they were set in any particular order, but is it possible that the road was carried on them? Horsley‡ speaks of the Wall as having been carried on piles over the low ground, but the foundations of the Wall can be traced, and no sign of piles has been seen in the trenches, though in the quarry trench close by pieces of black wood have been well preserved. I saw traces of the road and its ditches again at Highfield, near Old Wall. At Appletree there seemed to be no indication of the road, but it was found again near the mile castle between High House and Amboglanna.§

The existence of the road between the Wall and Vallum at Gilsland Vicarage is a matter of uncertainty. Some of us thought we observed it, some did not. Three at least of the trenches showed a loose mass of sandy rubbish, not exactly like the surrounding soil, with fragments of sandstone, which certainly gave the writer very little idea of a road, but when the horizontal measurements of these trenches and the positions of certain large stones in each were afterwards

* These *Transactions*, Vol. xiii., Art. xxxix., Plate IV.

† These *Transactions*, Vol. xiv., Art. x., Plate VI.

‡ *Britannia Romana*, p. 154.

§ These *Transactions*, Vol. xiv., Art. x., Plate I,

compared

compared, they were strangely coincident if accidental. In the uppermost trench* there was a large stone (16 by 15 by 12 ins.) 13ft. from the north edge of the Vallum, two stones (15 by 9 and 8 by 6in.) ten and eleven feet further north, then a quantity of good-sized fragments for about fifteen feet, then two more large stones (9 by 6 and 13 by 10 inches). In the next trench† there was a large stone (12 by 7in.) a little way north of the Vallum, and another (17 by 15in.) 3ft. 6in. north of this. Then the same fragments and sand as in the upper trench, and thirteen feet north of the last-named big stone came another, close to which the sand and fragments ended. In the lowest trench (touching the Wall) the appearance was still less that of a road. But having noted in what part of the trench the ground was full of stones of one sort or another, we found that the width was 15ft. 6in. The north edge of this was only six feet from the lowest layer of the stones of the Wall or footpath.

V.—NOTE ON THE TRACES OF QUARRYING AT BLEATARN.

Before the excavations of 1894 and 1895 many theories had been started concerning the mounds and hollows in the field at Bleatarn, but no one seems to have suspected their real origin till, in 1894, a trench was cut under Mr. Calverley's superintendence, which showed that the red sandstone rock, which is still worked at Hethersgill to the north, and is visible in the bed of the river at Crosby-on-Eden to the south, here too comes near the surface. Further investigation showed that a large part of the field has at an early time been worked for stone.

The western end of the field, and part of the northern,‡ is low and mossy, but the ground rises sharply at the edge of this moss, and then follows a higher level of great extent. Just north of where the Vallum climbs to this level there is a large hollow with a small oval mound in the middle, and a depression to the north-east through which it is partly drained. A trench (E on the map) was cut across the small oval mound and southwards across the Vallum in 1894, and was re-opened and widened (F on the map) in 1895.§ The small oval

* These *Transactions*, Vol. xiii., Art. xxxix., Plate VIII.

† *Ibid*, Plate X.

‡ These *Transactions*, Vol. xiv., Art. x., Plate VI.

§ *Ibid*, Plates IV. and V.

mound

mound consisted of a mass of small sandstone fragments imbedded in sand, lying loosely at all sorts of angles, evidently rubbish thrown up by the hand of man. Between this and the north mound of the Vallum was a hollow filled with a mixture of black peaty sand and dark red sand to within three feet of the surface. Above this is a layer, 18in. thick, of black matter, almost entirely leaf mould, though there is not a tree within 250 feet now, and then only a row of Scotch firs with an occasional oak, while the leaves found are alder. This mould was again covered by reddish gravelly upcast, which seemed to have slid down from the Vallum mound. South of this the western side of the trench showed the upcast resting on dark-grey sandy loam; below this were sandstone fragments in sand, but laid flat and even as in trench D, see p. 395,) and untouched by man, with a few erratic water-worn stones (porphyritic, with no trace of glacial scratchings) and underneath this came red sand, resting on red sandstone blocks. At the south end of the trench it was seen that the bed of sandstone fragments came to an end eastwards, so that the dark gray sandy loam lay on the bright red sand. The blocks below were irregular, but seemed to be fixed and *in situ*, except one on the western side, which a local quarryman said had been detached and then left as being of inferior quality. North of these, and some five to seven feet below the sloping surface of the ground, lay a wide level surface of red sandstone rock, evidently solid, measuring six feet from north to south. A rift in it, filled with red clay, ran nearly north and south, and extended southward between the blocks lying on it. On the flat surface were numerous tool-marks, both in the part disturbed in 1894 and in that opened only in 1895. It was certain that in the latter part at all events the marks were not made by our workmen. The quarryman thought they were made by men throwing their tools down when not required, rather than in getting the stone. The northern rock-face fell vertically, but water prevented our getting much deeper. On the few inches exposed were very distinct marks, where wedges had been used to work the stone. The quarryman pointed them out with great certainty, and remarked that he "would have used one or two more wedges" himself. The face of the rock at the east side of the trench indicated another layer a few inches below, projecting very slightly. The rock-face was 159ft. 6in. from the axis of the Vallum ditch. The quarry must have been covered in very soon after it was first opened, for the soft rock weathers very quickly, and the marks on it were as clear and sharp as those made by our workmen.

The modern road from the west, which has run for two or three miles on the site of the Wall, turns off southward about half-way along

along the field, avoiding the site of a now half-dry tarn which has given its (probably Norse) name to Bleatarn. But the Wall, as a section (H on the map) proved positively, ran straight on just north of the tarn, while on the south rises a high, nearly isolated mound, across which another section (I on the map) was cut.* This mound consisted of quarry rubbish, but whence and why gathered could not be satisfactorily proved. The upper part at least was comparatively modern, for a pipe of the type known locally as "fairy pipes," and some glazed pottery of quite late date were found three feet below the surface, a little below a darkish line which certainly represented an older, but not original, surface. The "tarn," however, must be much older, and is certainly artificial. Some of us considered that it had been quarried, and that part of the mound was its spoil-bank. The trench (H) to the north showed a dark-grey line resting on apparently undisturbed subsoil, which confirmed the impression that the Wall occupied undisturbed ground.

Quarrying has evidently been carried on here extensively, though the date cannot be fixed with any certainty; but some points seem worth notice. The quarry at trench F must have been later than the building of the Vallum, for the workers have encroached slightly on the north mound: this is shown not only by the dimensions of the Vallum, but by the vertically-cut face of the various strata on the north side of the mound. It seems likely that the quarrymen wished to preserve the Vallum to some extent, for they have ceased working where the stone is still very good, but where further work would have imperilled the north mound. This might be due to the difficulty of working where there was so much superincumbent earth, but it hardly accounts for the quarry having been immediately filled in. It is certain that the Romans must have needed stone for their Wall. It is also certain that in later ages it has often been customary to use the remains of the Wall as a quarry, and not as a rule to trouble with further getting of stone. Whenever the quarry was first in use, it has not been touched for many centuries. All trace or tradition of stone in the neighbourhood was gone till Mr. Calverley struck it in 1894. If the tarn were a quarry it must have been disused in the days of the early settlers, who called it Blea (blue) tarn.† If the theory which has lately been revived by Mr. Bates in his *History of Northumberland* (chap. II.) be correct, and the Stone Wall generally followed the line of an earlier Wall of Turves, it would account for the line of the Wall being intentionally left intact during the quarrying, supposing this to have been Roman work.

* These *Transactions*, Vol. xiv., Art. x., Plates VI. and VII.
On this name see *ante* pp. 194 and 217.