

ON A MASSIVE TIMBER PLATFORM OF EARLY DATE
UNCOVERED AT CARLISLE, AND ON SUNDRY RELICS
FOUND IN CONNECTION THEREWITH.¹

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Before dealing with the Timber Platform, which it is the object of this paper to describe, it will be necessary to consider briefly the site on which the Roman town of Luguwallium, and the subsequent mediæval City of Caerluel, Carleil, or Carlisle, stood; this site is now included in the larger area of the modern City of Carlisle. It will be further necessary to say a little about the history of Luguwallium.

The river Eden runs from east to west, immediately to the north of Carlisle, while its tributaries—the Petteril and the Caldew—flow into it from the south, immediately to the east and west respectively. About a mile south of Carlisle the beds of these two rivers approach one another so nearly as almost to make the site on which Carlisle stands an island. A diagram, No. I., gives the idea; on it the three rivers are laid down, and the mediæval walled city is shaded dark.² In this *quasi* island a long hill of new red sandstone rises gently from the south end of Botchergate to a head on which now stands the Cathedral of Carlisle. A deep valley then intervenes (or once did intervene, for it is now filled up), and then the hill rises again to a second and higher head, whose slopes to east and north and west are steep towards the meadows through which the three rivers flow.

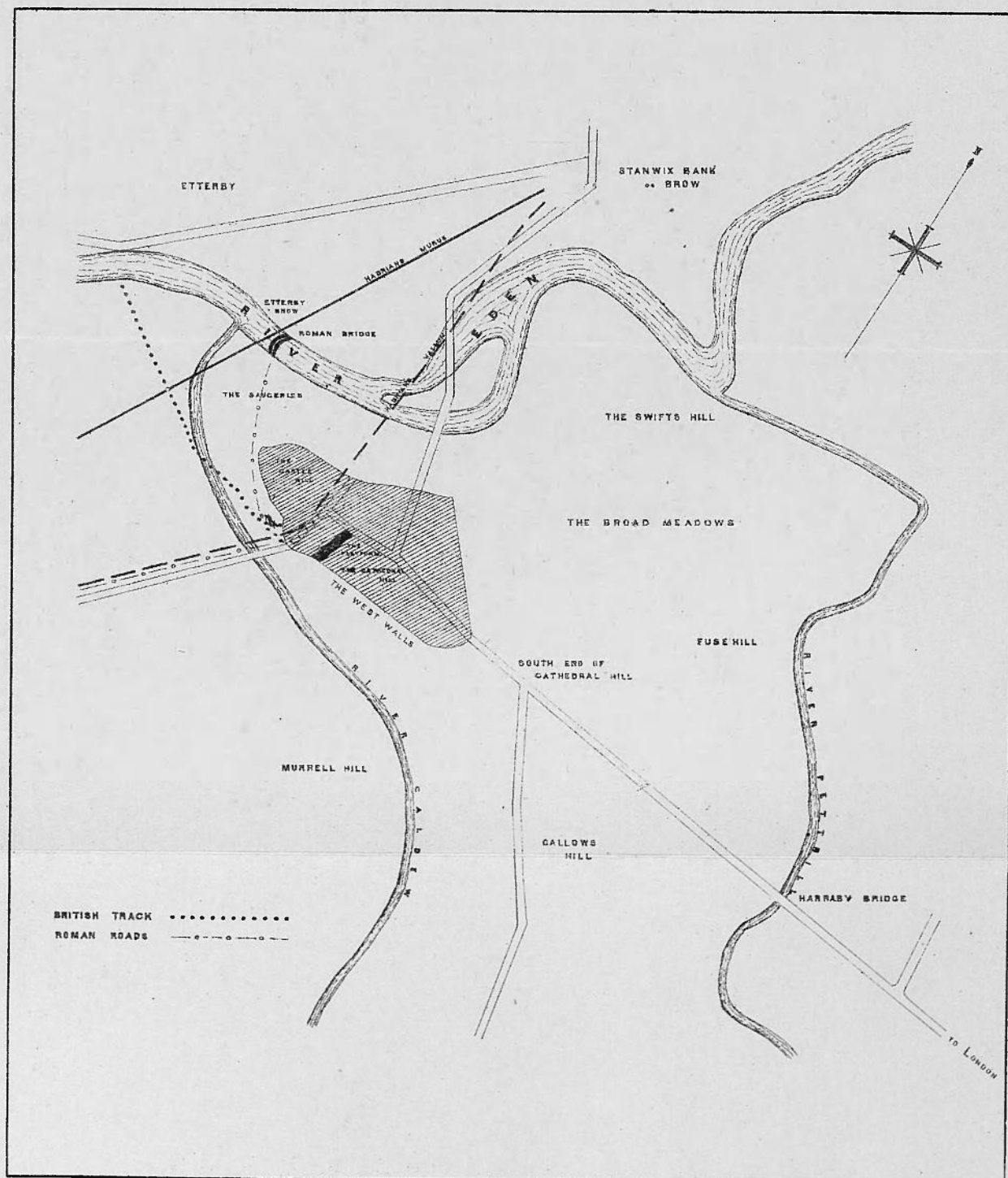
Some sixty feet above the meadows the Castle Hill³ of

¹ The paper here printed was read before the Society of Antiquaries of London on November 24th, 1892, and a *precis* appears in their Proceedings of that date. The paper is printed in *extenso* in *Transactions Cumberland and Westmoreland Antiquarian and Archaeological Society*, vol. xii, pp. 344—364.

² This diagram is adapted from one which was prepared to illustrate a paper on "The Siege of Carlisle, in 1641-5.

General Leslie's Works." *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, vol. xi., p. 104. One or two modern roads are given, in order to enable a reader to realise better the position.

³ For convenience the terms "the Cathedral Hill," and "the Castle Hill," will be used in this paper, even when referring to a period anterior to the erection of either Cathedral or Castle.



TULLIE HOUSE PLATFORM.

DIAGRAM I.



The Castle Hill.

The 1 mile

Madison's Hill.

Tullie House

The Castle Hill

VUE DU PUY D'ISSOLU.
Carlisle (site of) from The West.



DIAGRAM II.

Carlisle looks out towards Scotland like a lion—a natural fortress to guard the waths or fords over Eden, and commanding what was for centuries one of the two only roads by which wheeled conveyances (*i.e.* an army) could pass from England into Scotland, or *vice versa*. The first head, or Cathedral Hill, dies away to the south, at the end of Botchergate, at a point on the London Road, about half-a-mile south of the mediæval city; to the east it dies away in The Broad Meadows, immediately beyond the east curtain wall of the mediæval city.¹ To the west it has a steep cliff over the river Caldew, known at this day as “The West Walls,” as having been and being still, the site of the mediæval west curtain wall; its northern line, though much levelled up to, is painfully apparent in Rickergate Brow and Drover’s Lane; less so in Fisher, Peter, and Market Streets. Annetwell Street and Finkle Street mark the deepest part of the valley intermediate between the Cathedral and Castle Hills, though that valley, like the valleys between the seven hills of Rome, is filled up with the *debris* of the ages. The two hills and their limits, as thus given, can be easily traced on the twenty-five-inch Ordnance Map, or on the ten-foot Ordnance Map.

The sketch on diagram II. may help the imagination; it is a sketch, copied from Napoleon’s *Histoire de Jules Cesar*, of a place in Gaul, where was an *oppidum*, which the Romans took by siege. Rub out the little buildings and substitute a river for the hedge in the foreground, and then the picture will give a good idea of the site of Carlisle, as seen from the west, ere man meddled with it. The Cathedral Hill occupies the centre of the sketch, and its western cliffs, the West Walls, are well displayed. To the north is the Castle Hill, and the famous Gallows Hill is to the south.²

Going back to the Ordnance Map, or to diagram I., on the north of the river Eden are Stanwix and Etterby Brows (not visible in the sketch on diagram II.), with steep cliffs and descents toward the river Eden on the

¹ The Broad Meadows are now built over, and the present Lowther Street occupies the site of the east curtain wall.

² The *quasi* island between the three rivers includes, besides the Cathedral and

Castle Hills, the minor eminences of Swifts’ Hill, Ledgett’s Hill, and Fusehill; Gallow Hill, an important height, is between the rivers Caldew and Petteril where they most nearly approach.

south, and with gentle slopes towards the north. The summit of Stanwix Brow, or Hill, is the site of one of the camps of the Great Barrier of Hadrian, which crosses the river Eden opposite to the Castle Hill of Carlisle, the stone *murus* running direct across the alluvial plains of the Eden and Caldew, known now as the Saucerics (i.e., the *Saliceta* or Willow beds) and the Willow holme;¹ while the earthen *vallum* makes an abrupt and singular detour towards the south, and, after crossing the Eden, runs between the Castle and Cathedral Hills of Carlisle on the southern slope of the Castle Hill, which it thus includes within Hadrian's Great Barrier.² The Roman bridge crossed the Eden at Hyssop Holme Bank, a little east of where the *murus* crossed.³ From the bridge end a road would run across the Saucerics, pass under the west cliff of the Castle Hill (the present Devonshire Walk), meet a Roman road from the west coast at a point which was afterwards the Irish Gate of the mediæval city, and, turning along the site of the present Annetwell and Castle Streets, would enter Luguwallium by its northern gate. It should be added that the ancient British trackway from North into South Britain passed by the Etterby Wath over Eden, and westwards of the Castle Hill.⁴

So much for the site of Luguwallium, Caer-luel, Carleil, or Carlisle.⁵ Tullie House, in whose ground the Platform about to be described was discovered, stands on the northern

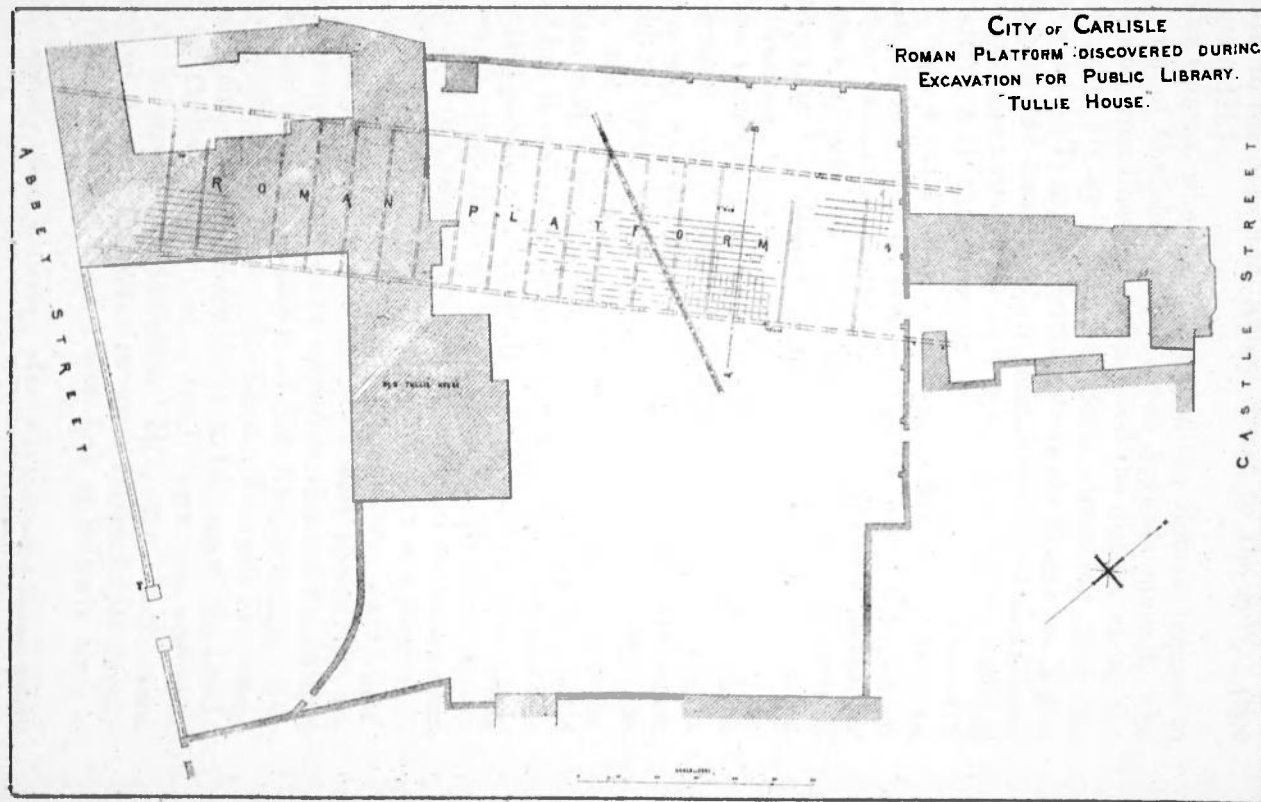
¹ It has been suggested that the *murus* ran direct to the north-west corner of the Castle Hill (now known as Windy Brow or Corner). The statement in the text has been proved by actual excavation, and the foundation of the *murus* found. *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, vol. ix., pp. 167-176. *Archæologia Eliana*, n.s., vol. xii., pp. 163-171.

² The reason for this abrupt and singular detour made by the *Vallum* will be an element in any discussion on the theories put forward by Mr. George Neilson in *Per Lineam Valli*, Glasgow, William Hodge and Co.

³ The position of this bridge is discussed in *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, vol. ix., pp. 167-176. *Archæologia Eliana*, n.s., vol. xii., pp. 163-171.

⁴ For this road see *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, vol. viii., pp. 373-374. Also Ferguson's *History of Cumberland*, p. 6.

⁵ Within the area of the mediæval city of Carlisle the depth of forced soil is very great, varying from a couple of feet in a very few places to as much as eighteen or twenty feet, or even more in places, but it may be put at an average of ten or twelve feet; actual excavations have proved it to be that depth on the Castle Hill; it is about the same at the entrance into the Cathedral, if my information is correct. For measurements see *Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society*, vol. iv., p. 337, &c. This depth of forced soil, and its wetness, owing to springs, accounts for the number of buildings in Carlisle that display signs of settlement.



TULLIE HOUSE PLATFORM.

DIAGRAM III.

slope of the Cathedral Hill, between that hill to the S.E. and the Castle Hill to the N.W., and between Castle Street to the N.E. and Abbey Street to the S.W. (See diagram III.)

The General who first conducted the Roman legions to the site of Carlisle was the great Agricola himself, who advanced from Chester, and secured the district about the year A.D. 79 by a chain of forts stretching from the Solway to the Tyne, in order to restrain the Brigantes. These Brigantes and their northern neighbours, the Caledonians, were turbulent races, and the Emperor Hadrian, on visiting Britain in A.D. 120, found it necessary to build a massive wall, nigh seventy miles long, from Bowness-on-Solway to Wallsend-on-Tyne, backed on its southern side by an earthen vallum, strengthened by twenty-three camps, or fortified barracks, and now known as the Great Barrier of Hadrian, or The Roman Wall. Its passage of the Eden near Carlisle has already been dealt with.

The Castle Hill of Carlisle is one of those sites which are certain to have been fortified from a very early date, as it is a very important strategic position. Its fortification would be easily effected—trench and mound across the neck, and a stockade. I am inclined to fancy that the Britons had a small settlement, or *oppidum*, on Castle Hill,¹ but it cannot be proved; the Norman Castle and the gravelled parade obliterate all earlier history. One thing is certain, that if there was a British *oppidum* on the Castle Hill of Carlisle, Agricola was bound to reduce that *oppidum* before he advanced a step further northwards, or else to mask it by leaving a sufficient force behind him. But as the Roman Generals did their work thoroughly, we may be sure, *oppidum* or no *oppidum*, that the Castle Hill of Carlisle was in the hands of the Roman troops when Agricola advanced beyond the Eden. The late Dr. Guest was of opinion that Agricola built a fort upon the Castle Hill of Carlisle,² and that a small town was sheltered behind it upon the Cathedral Hill, that both were destroyed by the Brigantes in some successful outbreak, and that Hadrian erected a new fort at Stanwix with a

¹ See Ferguson's *History of Cumberland*, p. 100, where, however, it is observed that though the soil of Carlisle

teems with Roman and Romano-British relics, British are wanting.

² *Origines Celticae*, vol. ii., p. 93.

small town nestling behind it on the slopes between Stanwix churchyard and the Eden—a locality which would probably repay excavation. This site being found inconvenient and cramped, settlers returned in more peaceable times to the old town of Luguwallium on the Cathedral Hill, and re-built it, occupying an area somewhat less than the mediæval walled city afterwards did.

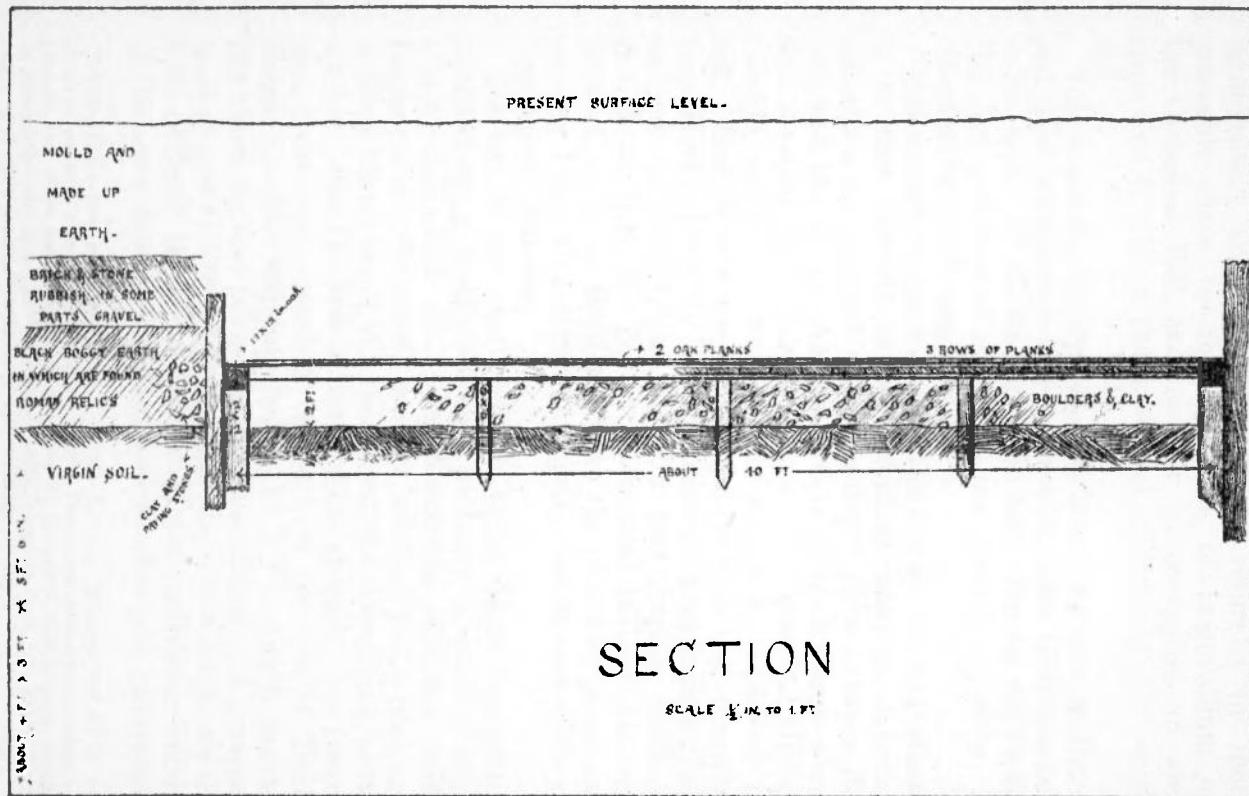
This is not the theory generally held; the late Dr. Bruce and most antiquaries take Agricola to have built the fort at Stanwix. If the Romans ever had a fort on the Castle Hill, all evidence of it, as of any British *oppidum*, is obscured by the Norman Castle.

Failing such evidence, I think the history of Luguwallium to be that Agricola built the fort at Stanwix, and that suburbs soon gathered on the cramped slope between the fort and the river. As the settlers increased more room was required, and they built upon the Cathedral Hill of Carlisle, and protected themselves with a stout palisade of oak. Bad times came, and in the troubles that preceded the arrival of Hadrian, Luguwallium was burnt or destroyed, and lay desolate and waste, when that emperor included the Castle Hill, but not the Cathedral Hill, within the lines of his Great Barrier. With the return of peace and security Luguwallium grew up again, and became a city of luxury and opulence.

The site of the excavations at Tullie House¹ was partly occupied by a brick building, probably a century or a century-and-a-half old. Its demolition disclosed scant fragments of a fourteenth century building, viz., a door and window facing the N.W., the sill of the door being about six feet below the present level of the ground. This proves that there was, standing on part of the site of Tullie House, an older building facing the N.W., with a ground line about six feet below the present surface. A compact mass of gravel also suggests that there was a road to the S.W. of Tullie House. A transomed and mullioned window of the same date as the door and window just mentioned

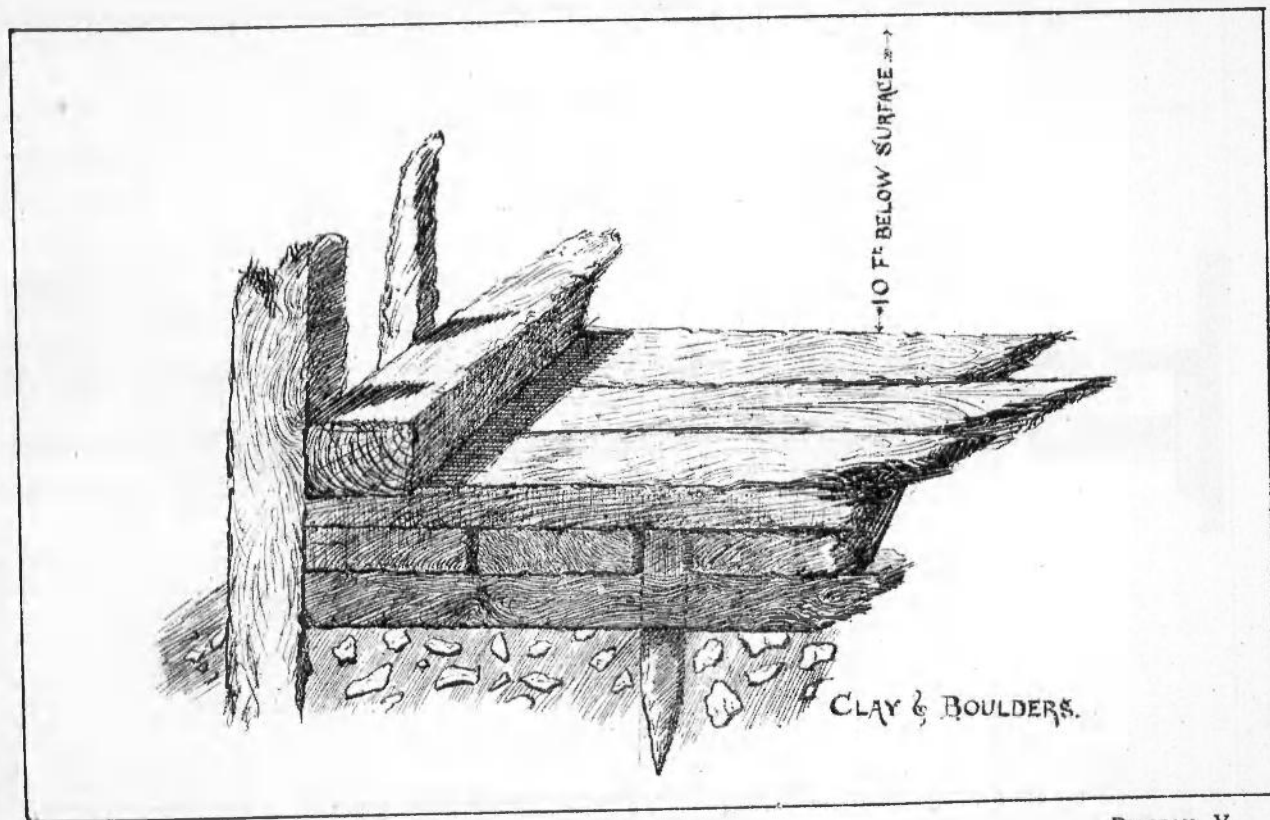
¹ Tullie House itself dates from the end of the seventeenth century, and with its grounds and offices has been purchased by subscription and given to the Corporation of Carlisle for the purposes of a

Free Library, Museum, School of Art, &c. The seventeenth century house will not be disturbed, but a more modern brick wing has been demolished for rebuilding.



TULLIE HOUSE PLATFORM.

DIAGRAM IV.



TULLIE HOUSE PLATFORM.

DIAGRAM V.

was found in the upper part of Tullie House. These are the remains of some fourteenth century building, the successor to whatever may have perished in the great fire which destroyed Carlisle in 1292.¹ The rest of the site was occupied by garden ground, and by stables and back yard, surrounded by the usual offices of various modern dates.

The whole of the site has not been excavated, only the east and west ends, towards Castle Street and Abbey Street respectively, and a subway connecting the two excavations (see diagram). The depth of the made or forced soil varies from eleven or twelve feet at the N.E. or Castle Street end to eighteen or twenty at the S.W. or Abbey Street end; on the line A B on diagram III. it is about twelve feet six inches deep, made up of five feet six inches of mould and made up earth; then comes brick and stone rubbish, and in some places gravel for three feet; this, I should imagine, marks the destruction of Carlisle by fire in 1292; then comes four feet of black boggish earth, in which are Roman relics. The virgin soil consists of clay and boulders. A section, showing these layers, is given in diagram IV.

The relics of antiquity found divide themselves into two classes: firstly, structural, or fixed to the soil; secondly, miscellaneous, or loose antiquities.

The structural antiquities consisted of a massive timber platform about forty feet in breadth, and running from N.E. to S.W. across the site—that is a little obliquely from Castle Street to Abbey Street, as shown on diagram III., a distance of about 220 feet. Its termination at either end has not been ascertained, so that it may be much longer. There appear to have been two parallel rows of posts, twelve inches by twelve in section (see diagrams IV. and V.). The distance between the rows of posts is about forty feet, and in each row the distance from centre to the centre of the posts is from six to eight feet. Some of the posts are ash, and others oak, and many have part of the bark and roots left on. The occurrence of the ash is interesting; the late Professor Rolleston says that, though the ash is indigenous to South Britain, its seeds have never been found in the

¹ "Chronicon de Lanercost," printed pp. 144-145-147.
for the Maitland Club, Edinburgh, 1839,

peat mosses of Scotland¹: here we have the ash itself in the very north of South Britain. Upon the top of these rows of posts rested horizontal timbers, twelve inches square. The space between the two rows of posts was occupied by a platform of oak planks, two inches thick, laid upon sleepers seven inches square, which rested on piles, six inches square, driven into the virgin soil (see diagrams IV. and V.) These planks were ascertained to be three deep, or six inches of oak plank. Outside the rows of twelve-inch posts, and immediately contiguous were rows of taller and slenderer posts (diagrams IV. and V.), which may have supported a roof, or more probably a parapet of wattle work. On the south of this structure, towards the Roman city of Luguwallium, paving stones embedded in clay, indicated a paved road parallel and contiguous to the platform. The platform was fastened together by gigantic nails of wrought iron, eight and twelve inches in length, square in section, and some having round heads, others square heads of pyramidal form. Long interment had made the wood so rotten that the planks were almost mould, and the twelve-inch posts are shattered and split to bits. The upper surface of this platform on the line A B was about eleven feet from the present surface; to the westwards the distance was greater.

The question now arises—what was this structure made for? It is unquestionably Roman, and Roman of early date, as shown by its proximity to the virgin soil, by the absence of relics of earlier date than Roman, and by the soil full of Roman relics rising some feet above it; older, I should imagine, than the Great Barrier of Hadrian, and probably of the time of the earlier Luguwallium, which Hadrian found in ruins, and destroyed.

Various suggestions have been made, some of which hardly merit mention. The first is that it is a road, but this is unlikely; if produced a little way to the west, it would end abruptly on the steep cliffs of the West Walls; the breadth also would seem to be too great. I once thought it might have been a lake dwelling or crannog, which it somewhat resembles, but I cannot conceive a lake in such a position. Another suggestion is that it was the

¹ *British Barrows*, Greenwell and Rolleston, p. 722.

quarters of the *extraordinarii equites et pedites*, or possibly of the strangers: these last in the plan of a Roman camp were contiguous and continuous to the former. I do not think that Luguwallium was laid out as a camp, any more than was Silchester. Luguwallium was, I take it, a place of residence for civilians, merchants, tradesmen, and others; the *equites et pedites* would be in the camp at Stanwix. A drill shed has also been suggested. A Roman inscription¹ at Netherby records that the *Cohors prima Ælia Hispanorum equitata* rebuilt *basilicam equestrem exercitatoriam*, or a riding school. The structure now under consideration may have been a drill shed for infantry, or for artillery, who manned the *ballistæ* and *catapultæ*, many of them engines of great power, flinging very heavy missiles, and recoiling very heavily, necessitating a substantial platform for their support. Vitruvius speaks of a *ballista* which threw a stone 360 lbs. in weight; the recoil, or rather the re-action, of a *ballista* would be downwards. This structure occupies the very position in which a battery of these engines would have been placed for the reduction of a British *oppidum* on the Castle Hill. It has been objected that a Roman General would not delay to erect such a structure, but would attempt to carry any *oppidum* there by assault and escalade. That seems doubtful; the Roman legionary by the time he had marched to the site of Luguwallium must have been a very costly soldier, not lightly to be expended, while the *oppidum*, which probably as a rule sheltered only a few, would swarm with Brigantes, driven before the Roman advance, and ready to fight to the death in their last stronghold. For their conquest Agricola would use the engines of war which accompanied every Roman army, and for their use some sort of platform would be required with a parapet to protect the artillerymen, and to prevent the enemy from rushing the engines. But I admit that Agricola would hardly have delayed to construct so massive a structure as that we are now considering. I suggest that the inhabitants of the earlier Luguwallium rebuilt Agricola's battery in this substantial form for their own protection. The earlier Luguwallium was defended by a stockade, of oak posts set in three rows,

¹ "Lapidarium Septentrionale, No. 774.

quincunx fashion, or, as a navvy explained it to me, so that a man could not come straight through them.¹ This stockade has been found at four places in Carlisle, viz., the Bush Hotel, and Bank Street; these two finds I saw. The other two places I have been informed of by old inhabitants, viz., Citadel Row, a street only a few feet long, and Castle Street. In the two instances which I saw, the stockade was buried deep under soil full of Roman relics, and the tops of the stakes were burnt off; the stockades clearly belonged, like the structure under consideration, to the earlier Luguwallium.

I would venture to suggest that the earlier Luguwallium was defended by a triple row of oak posts well wattle-worked together: that westward of the north gate this fortification changed to a platform for engines of war, commanding the trackway from North Britain, which must have passed along the front of the platform to reach the north gate of Luguwallium.² Platform and stockade would all be ruined ere Hadrian's days, and the second Luguwallium, which I fancy was not fortified, rose upon the *debris*.

Positive evidence exists that the Romans brought *ballistæ* into the north of England. Two inscriptions have been found at the station of Bremenium (now High Rochester) in Northumberland which state that the first cohort of the Vardulli had there rebuilt a *ballistarium*, or platform, for *ballistæ*.³ One of these inscriptions was found near a portion of the ramparts of Bremenium, which was of the unusual thickness of twenty-eight feet, and strengthened by a buttress. In the vicinity of this rampart a number of large stones, roughly rounded, such as we may suppose would be used for *ballistæ*, were found. Similar stones have been found at Borcovicus, and chiefly in the vicinity of those parts where are platforms or staunces suitable for mounting *ballistæ*. A round ball of flint, a little pear-shaped, in diameter four inches, and weighing

¹ "Transactions of the Cumberland and Westmoreland Antiquarian and Archaeological Society," vol. iii., pp. 134-137; vol. iv., p. 91. "Proc. S.A.," n.s., vol. vii., p. 217, and "Journal of the British Archaeological Association," vol. xxxiii., p. 525.

² The road exactly fulfils the rule laid

down by Vitruvius, Bk. I., c. 5, viz., that it should wind and turn to the left from the gates. By this arrangement the right sides of the attacking troops, which are not covered by their shields, are open to the weapons of the besieged.

³ "Lapidarium Septentrionale," Nos. 571-572.

3½lbs. was found on the tip to which the earth from Tullie House was taken, but the dirt adhering to it proved clearly that it had occurred in the Roman *debris* about the level of the platform. It seems such a stone as might be flung from a *ballista*, but one ball will hardly prove the existence of a battery.¹ Staunces, supposed for *ballista* and such like engines, are found at regular intervals on the Wall of Antoninus, and on the walls of Silchester, especially near the gates.

So far I have not been able to find any similar platform in Britain. At Burghhead, on the Moray Frith, in Scotland, is a fort which presents the peculiar feature of being constructed of logs of oak, alternating with layers of stone. A diagram in the new volume of *Proceedings S.A. of Scotland*² shows a section and view of the ramparts. This method of construction is characteristic of the Celtic or Gaulish forts of France, *e.g.*, the ramparts of Murcens, of Uxellodunum, and of Impenal, on the river Lot, in the department of that name in the south of France.³ At Burghhead, Murcens, and Impenal, large quantities of iron nails, exactly similar to those found at Tullie House, have been discovered. Cæsar, in his *Gallic Wars*, Book vii., section 23, gives a description of the Gallic fortifications, which exactly describes those just mentioned; he gives forty feet as the breadth of the cross beams, the breadth of the Tullie House structure. This fact and the similarity of the nails found in Carlisle, in Scotland, and in Gaul, may give birth to a conjecture that the structure at Tullie House may have been the work of a Celtic people, and not of the Romans. But the similarity does not go very far. The Scotch and foreign examples are intended, as Cæsar explains, to resist the battering-ram, while the Tullie House structure was clearly intended to carry great weight.

Another structural find was made, which merits brief mention. At the depth of eleven feet from the present surface a drain was found running from east to west, and

¹ Since writing these papers I have been shown three large round balls of red sandstone, undoubtedly made for use in a *ballista*, or some similar machine. They were found sixteen years ago, in the ditch of the *vallum* in building the Blazing Barrel public-house, and have

ever since been in possession of the builder. The Blazing Barrel is in the ditch of the *vallum*, exactly opposite the platform.

² *Proceedings S.A. of Scotland*, 3rd series, vol. i., pp. 435-437.

³ *Ibid*, p. 440.

crossing the platform (see diagram III.), but at a higher level, a foot or so above it, and five feet below the mediæval surface, which is as already conjectured six feet below the present level. When this drain was put in, the platform must have been long buried: the mediæval man may have laid this drain, or the Roman may have laid it. It is made of trunks of Scotch fir, *Pinus sylvestris*, hollowed out, and jointed one into the other. If the Roman laid the drain, the material was ready to the hand; Cæsar found the Scotch fir flourishing in great abundance in these islands (see *British Barrows*, Greenwell and Rolleston p. 724, n.).

Leaving the structural finds, I come to the miscellaneous or loose articles that occurred during the work.

At the very bottom of all things, at a depth of some eighteen feet, on the virgin soil, a bone arrow-head was found. It is two-and-a-half inches long, and is formed from the bone of some small animal, and has holes for a rivet by which it was secured to its shaft. For examples of bone weapons, see *Proc. S.A.*, 2nd series, vol. i., p. 162, where Mr. Franks says of them:—

Weapons made of bone are of great rarity, especially in this country. So unsatisfactory a material for all purposes, whether of warfare or the chase, would only be employed at a time when metal was unknown, or so rare as to be of great value, so that the use of it was restricted to a few persons. In addition to this, bone is very liable to decay, and it is only found in good preservation when embedded in moorish soil or in thick mud, so that the action of the air is excluded.

Coming to relics of the Roman age, potsherds of that date began to appear at the depth of about eight feet, and continued down to the original soil. They were of the usual character, shards of blue black ware, and of the so-called Samian (pseudo-Arretine), both plain and figured; fragments of *amphoræ* and of *mortaria* were abundant: the potters' marks are numerous, and are given, together with others from Carlisle, in an Appendix to this paper. One or two of the shards of Samian had been ground into circular dumps, no doubt by children for use in some such game as "hop-sotch," and one or two, by the leaden rivets remaining in them, showed that they had belonged to vessels considered worthy of repair when broken. Several

small vases, about four inches in height, of coarse paste, were found. Fragments of glass vessels also occurred, including pieces with the characteristic projecting pillars (see Wright, *The Celt, the Roman, and the Saxon*, 3rd edition, p. 284), and half of a bracelet or bangle of green glass with yellow ornaments. One broken earthenware vessel possesses some interest, as belonging to the class of triple vases, which have recently been the subject of discussion in the *Antiquary*.¹

Some brass braiding, or wire plaited into a braid or chain of square section, was found at a depth of sixteen feet below the surface, among the Roman *debris*. Braiding, of exactly the same pattern, is in the Anglo-Roman room at the British Museum, and was found at Chorley, in Lancashire. Some instances are in the Guildhall Museum, forming the handles of glass bowls, being attached by rings to lions' masks moulded on the glass. One or two fragments of a copper mirror were found; also some thin pieces of brass, which were probably the mounts of strap ends. A hair-pin of bronze, two *styli*, and two *ligulæ* of the same material were found; an iron adze-head occurred at the depth of ten feet, and a heavy bronze ring at six feet, at which depth also occurred a much-worn wedding ring of a modern date; and at seven feet the leaden bob of a plummet was found.

A bowl of thin bronze, hammered out of the solid, was found among the Roman *debris*. It is one foot in diameter at the top, including a turnover rim of half-an-inch; its depth is three inches, and its diameter at bottom, which is slightly dished, is nine inches. The rim has eight nail holes in it, struck up from the under side, as if the bowl had been inverted, and nailed as a cover over something. It has been most highly valued, if the care that has been taken to repair it is any criterion; it has been patched with bronze, thin plates of bronze, in no less than eleven or twelve places; these plates are fastened on with bronze rivets of a peculiar type, exactly like modern paper fasteners. Two bronze bowls, exactly similar to this, were found in a crannog in Dowalton Loch in Wigtonshire, some thirty years ago, by the present Duke of Northumber-

¹ See *Transactions Cumberland and Westmorland Antiquarian and Archaeological Society*, vol. xii., p. 272.

land. These Dowalton Loch bowls are engraved in Dr. Munro's magnificent work, *The Lake Dwellings of Europe*, p. 400, and also in Dr. Anderson's *Scotland in Pagan Times; the Iron Age*, p. 268. They are in the Museum of the Society of Antiquaries of Scotland, in company with a third, also from Dowalton. This third bowl is made of pieces of sheet metal, riveted together, and is repaired in identically the same manner, and with identically the same rivets as the bowl just found at Tullie House. A store of these peculiar rivets has recently been found in an archaeological investigation of the Culbin Sands in Elginshire (*Proceedings S.A. of Scotland*, 3rd series, vol. i., p. 508). With the three Dowalton Loch examples, a bronze saucepan of well-known Roman form was found, undoubtedly Roman, for it is marked "P. CIPIPOLIBI"—the mark of Publicus Cippius Polibus, a well-known Roman saucepan maker.¹

A bronze brooch was also found at Tullie House, the exact place I do not know.² It is a flat circle of about an inch internal diameter, and not quite an inch and a half external diameter. On it is an inscription, "✠ ihs nazar enus rex." It much resembles a brooch engraved in *Scotland in Pagan Times; The Iron Age*, p. 225, and now in the Museum of the Society of Antiquaries of Scotland, which Dr. Anderson assigns to the thirteenth or fourteenth century. A carved stone from the Shawk Quarries, near Carlisle, which the Romans are known to have worked, was also found at Tullie House.³ It is six inches by four inches by a foot in length, and one-half of it is worked into a spirited likeness of the head of a wild boar, the well-known cognizance of the twentieth Legion. A disc of red sandstone was found at a depth of nine feet; it is four and a half inches in diameter, and two inches in thickness. A hone stone of sandstone was also found. Three perfect millstones, and a fourth, broken, of volcanic ash from Andernach on the Rhine were discovered; the broken one has part of its ironwork remaining. Other fragments were a couple of querns of local stone.

Three gold coins were found. The earliest in date is a

¹ Munro's *Lake Dwellings of Europe*, p. 400; Anderson's *Scotland in Pagan Times; the Iron Age*, p. 200.

concealed it for some time.

³ Proc. S.A., 2nd series, vol. xiv., p. 41.

² The finders took it to be gold, and

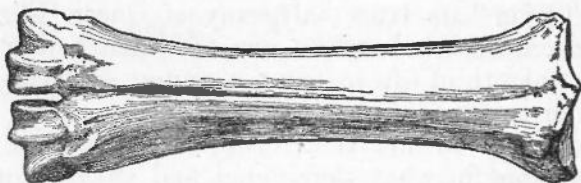
quarter noble of Edward III. ; it is of his fourth issue, between 1369 and 1379 ; it was found among the Roman *debris*, at a depth of nine feet, but coins have a tendency to work downwards. The next is a half-guinea of William III., dated 1695. I do not know at what depth it was found. The third is a half-guinea of George I., dated 1725, in beautiful condition, found at three feet below the surface. The silver coins included four denarii, found at a depth of thirteen feet ; these appear to have been subject to the action of fire ; two more, much worn ; four silver pennies of Edward II. (three of the London mint, and one of Canterbury). The copper coins included first, second, and third brasses, mostly too corroded and detrited to be deciphered, except two second brasses of Vespasian, and one of Trajan ; an Irish halfpenny of Queen Elizabeth ; two or three Scotch bawbees, one of which had wriggled down to a depth of fifteen feet ; a penny of George III., and one or two modern halfpennies.

I should like to add that owing to a system of paying the excavators for what they found and gave up, most of the relics discovered, except some coins, came into the possession of the Corporation of Carlisle, and will be added to the Museum in Tullie House. That, I am sorry to say, did not occur in the case of the extensive excavations made in Carlisle for the erection of new markets in 1887 : between 200 and 300 silver coins of Roman date found there were disposed of to a Liverpool dealer by one of the foremen, who had been most active in handing over to the Corporation anything that was too big for him to lift. But the excavators have an exaggerated idea of the value of Roman and other coins, due to ignorant people giving absurd prices for single coins ; these prices the men think ought to be always obtained, and they hide the coins from the authorities, but ultimately part with them for a trifle to some wily foreman who is in touch with the Liverpool dealers through the local pawnbrokers. One object found in the new markets at Carlisle was a figure of a bronze sea-horse ; I heard of its discovery, but it had already got into the hands of a dealer. Recently, after a lapse of five years, I found it in the Anglo-Roman room at the British Museum.

APPENDIX No. I.

The bones from the Romano-British strata under Carlisle, obtained at a depth of from eight to eighteen feet beneath the present surface, and submitted to me by Mr. R. S. Ferguson, belong to the following animals:—Domestic dog, short-horned ox (*Bos longifrons*), red deer (*Cervus elaphus*), domestic pig. The dog is represented by fragments of a young skull; the ox by two cannon-bones, lower jaws, portions of skull and other bones; the red deer by an entire hind cannon-bone (*metatarsus*) the lower end of a tibia, and some other remains; and the pig by the lower jaw. The only specimens which are of especial interest are the cannon-bones (*metacarpus* and *metatarsus*) of the ox, which are smaller than any that have ever come under my notice, and indicate an extremely diminutive domestic race. The front cannon-bone (*metacarpus*) is represented in the accompanying illustration on a scale of one-half the actual size. Its extreme length is only 6 inches, and its width at the upper end 2·8 inches.

R. LYDEKKER.



FRONT SURFACE OF THE LEFT FORE CANNON-BONE (METACARPUS)
OF THE SHORT-HORNED OX (HALF-NATURAL SIZE).

APPENDIX No. II.—POTTERS' MARKS.
SAMIAN WARE FROM TULLIE HOUSE.

Names marked thus are in Wright's Catalogue.*

Names marked thus in Roach Smith's list.†

On Wright's List of Marks on *Mortaria*.‡

A //	*†NIGRINI
OF . A //	†PATERC
*AMABIVS	*†PATRICIVS
BAVNCIMI OF	*†OF . PO //
*OF . B /// ENI	*†OF . PONTI
(OF . BRITAENII ?)	PRIAM . FE
†CRICIR . OF	OF . RV
*OF . COELI	*OF . RVF (twice)
*†OF . CALVI (twice)	*†OF . RVFINI
*†OF . C / ESI	OF . ROM /
(twice, OF . CRESI ?)	SECVNDI (three times)
*OF . CENI	*OF . SILVINI (twice)
*OF . CVI	SNOBN /
DIN /	*†TAVRICI . O
ERVRV / FEC	VOGENE
OF . ECE	*†OF . VITA
*†GERMANI . OF	OF . VRTV
IVLLH	// CH
LITTERA . F	// . F
LOC //	// . FE
MINAITAS	// II . F
*MON /	OF . // LENI
NIC // (twice)	A sexfoil in shaped margin, deeply stamped. ¹
NICEPHOR . F	

¹ This mark is on fragments of Samian in the Museum at York.

FROM THE COLLECTION OF MR. R. FERGUSON, F.S.A.,
OF MORTON.

*†ADVOCISI
 *†ALBVCI
 *†BRICCI . M
 *†BVRDO
 *DOIC or DOLIC
 DORCEVS . F .
 *OF . FAB /
 MASCNIOS
 MAMMI
 MINAISINNI
 MOGODII . M
 *†MOXIVS

OMOIMO
 *†OF . PATRIC
 *OF . RICIMI
 *†RVFFI
 *†SATVRNNI . OF
 *SENILA
 SCOTNI
 VAKEDVKATI
 VATICONIS M (scratched)
 *†VILRI
 XIIXII

SAMIAN WARE FROM THE CARLISLE MUSEUM.

*†ANVNI . M or AVVNI . M.
 AINI . M.
 *†§ADVOCISI (in caps, on side of a
 vessel)
 *†AETERNII
 *†§BIGA FEC
 BAECOSHEF ?
 *CALAVA . F (Botchergate)
 §CAMVII (twice)
 CAMPANI M
 *†§CRVCVRO
 CAVON . M (now missing)
 §CLOSABINIA or GLOSABINIA
 *†OF . FAGE (from Stanwix).
 §GLANCIV M
 IO // M
 §IO / CIVS or IOCI . MS
 LITTER
 M // M
 MAGI OF

*†MAIOR . F
 *†OF . MANNI
 *†§MARCELLIVS
 *†MARTIALIS
 PVGNI N
 SAXIMI . M (twice)
 *†§SECVNDVS F
 §SILVIIRI OF
 ECVIAR . F or ECKIAR . F
 / MOR . M
 §/ ILANIM
 // / E / CTO SF
 §/ / INI M
 // IVINI
 // II . M
 // BIMAI
 // IIMA
 §XIIIXIII
 (scratched on bottom).

§ Pieces so marked were found in the New Markets, Carlisle.

SAMIAN WARE IN MR. FISHER'S COLLECTION.

*†CELTAS . FC
 *†CRACVNA F
 *†MACCALI M
 OSINONAVI

*PAVI . L . P
 *†TITVRONIS O
 // RITINIMI
 LATOH

SAMIAN WARE IN CATALOGUE OF THE ARCHÆOLOGICAL
MUSEUM (formed at Carlisle during a visit of the Royal Archæo-
logical Institute, 1859).

GAVRICUS p. 7, Catalogue.
 VAREDVCATVS p. 7, "
 SENIIA F p. 7, "
 TAVRICI . F p. 7, "
 BRICCI . M p. 7, "
 BRICCIVS p. 7, "

SECVNDVS . F . p. 7, Catalogue
 OF . VIR . p. 7, "
 REGALIS F . p. 7, "
 . . ATIOF . p. 7, "
 PATERCLOS FE . p. 7, "
 SEVERVS p. 7, "

ON LAMPS.

ATIPIVS
*IECIDI
FORTIS
FVS

Catalogue List, p. 8.
(Museum)
(Morton Collection)

ON AMPHORÆ.

VIPAV
IA^{ROPI}
DOM F
A R A .

Tullie House

"
Morton
Mr. Fisher

P . I . R

or

P . L . R

Museum.

C . TYG

or

C . TYC

"

VIN1 or VIAT
LEC.VV LEC.VV

"

ON MORTARIA

DOCIE

Morton.

M I Z h E
M I Z h E

or

M R I · E
M R I · E

Museum.

A V . ST
Λ A A

or

A V · ST
M A

N N I V S

MARTIALIS (twice)

Catalogue, pp. 10-11.

ON WHITE WARE.

PIRV.