

ART. X.—*Romano-British Carlisle: its Structural Remains.*
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CARLISLE is situated in the broad plain of the Eden valley, where it is approaching its tidal estuary. It would bear a central relationship to the meeting place of several channels of communication. Northwards the convergence of several river valleys (the Liddel, Esk and Annan) provided passes into Scotland; eastwards lay an easy route across the lower isthmus of Britain following the valleys of the Irthing and Tyne, and over the central uplands which here do not exceed an altitude of 500 feet; whilst for miles to the south stretch the "kindly round-backed hills of the Pennine Chain," and to the north-east are still to this day vast stretches of bogland separated by rolling ridges of moor rising ever higher until they culminate in a range of hills overlooking the North Tyne. Thus Roman Carlisle would bear the same relative position to a cross-country route as the forts at Manchester and Ribchester; that is at the western end of the route where it reaches a river plain.

Westwards of the site lay the Solway Firth, which would be navigable at high tide for a considerable distance towards Carlisle,* an important asset to movements of the fleet or for trading vessels at a later period. South-westwards lay the coastal route to the south, and over Shap Fells, though the most difficult of the natural approaches, lay the direct route down western England to the legionary fortress at Chester. Having thus reviewed the geographical features, the tactical position demands attention.

* Ships of 80 tons burden were able to reach Rockcliff in the year 1794 at spring tides (Hutchinson, *Hist. of Cumberland*, vol. ii, pp. 526, 554).

The site of Carlisle* is on a low hill of red sandstone, rising gently from the south and attaining two summits which are now occupied by the Cathedral and the Castle. On the north side the hill presents a precipitous escarpment facing the Eden Valley; to the west is a steep declivity to the river Caldew, while eastwards it descends with a gentle slope to the valley of the Petterill. Picture this bluff attaining a height of 83 feet with steep sides facing north and west, with more gradual ascents from the south and east, almost insulated by the approximation of the Caldew and Petterill to the south, and beyond it the great forested valley of the Eden; then one can easily comprehend the intrinsic military value of the situation and its admirable position for the availability of the natural communications.

With this general conception of the site we may turn to a consideration of the structural remains. These may be classified into two main groups:—(I) the principal defensive works, (II) minor defences and other structures. The works of the former group present two strikingly different types; firstly those defences which most certainly enclosed an irregular area that has yielded the bulk of the later civil remains, and secondly there is a defensive structure without the previous area which was associated with most of the early Samian ware and appears to belong to some regular system of defence such as is usually associated with a military site. Since the latter chronologically appears to pertain to an occupation earlier than the former it will be discussed first.

The structure, consisting of a great timber platform, was revealed during the excavations for the new buildings at Tullie House in 1893; it was traced for a distance of 220 feet extending from Abbey Street to Castle Street, running somewhat obliquely from N.E. to S.W. It was resting on the ground surface, therefore belonging to the

* These *Trans. O.S.*, xii, p. 344.

earliest occupation of the site, and was covered by 12 to 13 feet of made soil, of which 7 to 8 feet was Roman deposit. The whole structure maintained an average width of 40 feet; two parallel rows of oak and ash posts 12 inches square and six to eight feet apart marked out the boundaries. These were overlaid with beams 12 inches square placed longitudinally. Between these rows was the platform built of oak planks two inches thick and laid in three layers upon sleepers seven inches square, which in turn rested on piles six inches square driven into the virgin soil, the whole structure being fastened with iron nails eight to 12 inches long. On the south side of the platform paving-stones embedded in clay probably indicated a road running parallel and contiguous to it. It will be easily understood from the foregoing description that the platform was of immense strength, and evidently intended to support a heavy superstructure; its situation on the north side of the Cathedral hill overlooking the once deep defile, now considerably filled up and occupied by Annetwell Street, which intervened between this and the Castle summit,* and the extended line, speak with almost vocal clearness of its defensive nature. It is therefore from comparison with such structures as recorded by literature and as revealed by excavation that an explanation must be sought. In the literature of the Roman period there are several references to the use of timber for the purpose of fortification. Caesar describes in detail the walls of the Gallic "Oppida" as having consisted of alternate layers of timber and earth, the former serving as a framework for the entire structure.†

* It is curious that the Castle summit was not selected for the site of the fort, there being no remains recorded from the site to warrant such a supposition. Possibly the Castle area was insufficient to accommodate the size of fort which lay south of the defile.

† "But this is usually the form of all the Gallic walls, straight beams connected lengthwise and two feet distant from each other at equal intervals are placed together on the ground; these are morticed on the inside and covered with plenty of earth. But the intervals which we have mentioned are closed

The results of archæological research during the past years fully corroborate Caesar's description. The walls of the Gallic "Oppida" at Murcens and Impernal were thus constructed (Déchelette, *Manuel d'Archéologie*, ii, 3, *Époque de la Tène*, p. 987 and fig. 411). A similar method of rampart construction was extensively used by the native tribes of Europe for their circular camps (*Ringwall*) notably in the German example on the Gickelsburg near the Roman fort at Saalburg, and again in camps in Bohemia and Thuringia, whilst the Dacian fortifications are thus represented on Trajan's column. In Britain an example is to be found in the native fort at Burgh Head on the Moray Firth. Here the rampart consists of two facing walls with an intervening filling of earth and stone, twenty-four feet in width. The facing walls are bonded together by transverse beams of oak (six to nine inches square) joined by longitudinal planks and secured by iron bolts, this timber framework being repeated at regular intervals from below upwards. The foundation consisted of a layer of oak beams covered with stones and followed by another layer of timber, above which was a series of small beams run transversely into the wall every nine inches (*Proc. Soc. Antiq. Scot.*, 1890-1, 435). In each of the preceding instances the timber would appear to serve more as a bonding than as a foundation.

The foundation described by Hyginus under the term "Cervoli" was of use, under special conditions, more particularly in cases where the soil was excessively loose. However, several of the Roman Auxiliary stations in Britain have yielded evidence of the use of timber in the foundations of their defences. At the little fort at Coelbren (*Arch. Camb.*, 1907, p. 29) dating from about

up in front with large stones. These being thus laid and cemented together, another row is added. . . ." and again speaking of their construction he says "Since it [the timber frame] being morticed on the inside with rows of beams generally 40 feet each in length. . . ." (*De Bello Gallico*, vii, 23).

A.D. 70, the angles and south rampart were founded on a platform of oak logs laid transversely: these averaged 17 feet in length and eight to nine inches in diameter; under the angles the construction was more elaborate, as indicated by additional rows of logs, and the wedging of some of these against posts driven into the ground. The absence of the log foundation on three sides of the fort, and its presence only on the south front where the ground was treacherous, and at the angles, led the excavator to account for its presence at the latter as serving as a specially strong foundation to carry a heavy superstructure such as would be entailed by the presence of a ballista. The fort at Ribchester presents another very interesting example of a timber platform foundation to the rampart. In this case oak spars were utilised "reaching inwards 20 feet and made up in three lengths" At the north angle a more substantial construction existed consisting of layers of oak shingles, a plank floor and oak beams, superimposed and alternating with layers of gravel (*Trans., Lancs. and Cheshire Antiq. Soc.*, xvi, 219). Finally the Agricola fort at Newstead had for its turf rampart a slender foundation of rows of oak branches (Curle, *Newstead*, p. 23).

From the foregoing examples it is evident that there is no structure known which will bear comparison with the massive platform at Carlisle; but it is equally clear from the British sites that timber was utilised for rampart foundation under two conditions:—

1. Where the soil was marshy.
2. Where exceptional weight had to be carried.

Of the two possible reasons for its employment the second alone demands consideration in the Carlisle erection. The great width and strength of the platform, founded on the solid clay of the hill, speak definitely of this special purpose. So elaborate a construction as has been detailed above would not be requisite for the ordinary type of

rampart, whether of earth, turf, or stone, but on the other hand an especially broad rampart designed for the mounting of ballistae might render necessary a foundation approaching in size and strength the present example.

It may be opportune at this juncture to recall the examples of such structures found in Britain. Both the south and west walls of the fort at High Rochester are increased in thickness over certain sections, and an inscription from this site attests the presence of a ballistarium restored in the reign of Elagabalus.* Again in the north-west corner of the Balmuildy fort there was an expansion of the rampart behind which were the remains of an earth and stone base; the latter the excavator judged to have supported a timber platform; of its purpose Miller says:—"It is quite possible that what they supported was simply a platform for heavy engines, not a walled and roofed turret" (Miller, *Roman Fort at Balmuildy*, pp. 15 and 16). It will be readily perceived from these examples that they do not approach the Carlisle foundation in length or width, the longest (88 feet) being at High Rochester, which ill compares with the 200 feet or more in length of the structure under discussion. However, in the present state of our knowledge both from comparative research and of the actual remains, it appears most reasonable to attribute the purpose of a foundation for a rampart mounting ballistae to this remarkable platform, a conclusion which is slightly substantiated by the finds of ballista balls in this vicinity.

Having thus reviewed the construction and possible function of this work, there remains for consideration the evidence as to date and certain deductions with regard to

* C.I.L. vii, 1046. At High Rochester the west wall was increased in thickness from 10 feet to 28 feet for a distance of 80 feet to the south of the west gate, and for about 40 feet to the north of it. The south wall also was increased in thickness to 20 feet for a distance of 50 feet. At Housesteads a thickening of the north wall over a distance of 58 feet may be similarly interpreted (*Arch. Ael.* ser. II, vol. xxv, 247).

associated remains. The whole structure, it will be recalled, was covered by seven to eight feet of Roman deposit embedded in which was a drain, constructed with hollowed trunks of Scotch fir. This crossed over the platform one to two feet above its surface and five feet below the medieval level. Evidently the original use of the platform was soon abandoned and the superstructure removed by violence or design, whilst a drain came to cross its site. In the Roman *débris* covering the same, many fragments of terra sigillata, form DR. 29, were found, dateable to the Agricolan period; clear evidence as to the early date of the timber remains. On referring to the plan of the city it will be seen that a prolongation eastwards of the platform would cross the lower part of Fisher Street. Now it is in this neighbourhood, on the site of the Presbyterian Manse, that a IXth legion tile (*Eph. Epig.*, ix, 1270) was found, and some early examples of coarse red wares were discovered further up the street. These pots and tile are of local manufacture; similar examples, including two IXth legion tiles, having been found at Scalescough, five miles south of Carlisle, evidently the site of a pottery worked by a detachment of that legion. It is in this region of Carlisle that the first-century remains are found, a fact which when taken in conjunction with the line of the platform and the evidence of a road on its south side, strongly suggests the site of a first-century fort with the timber foundation on the line of its northern defence.

This is a theory which it should be possible to put to the test, since the Abbey Street end of the foundation is approaching the western scarp of the hill, and would consequently have to make a turn south, approximately along the west side of Abbey Street, and should be accessible in the Cathedral precincts near the Deanery. Again it might be possible to cut across the eastern line in the gardens at the back of the houses on the east side of

Castle Street. Here it may be mentioned that a fort of the size of the first Agricolan example at Newstead would extend from Abbey Street to the vicinity of the Manse in Fisher Street on the east, and from Abbey Street to the S.W. corner of the Cathedral precincts on the south, whilst the south-eastern corner would be about the site of the Town Hall.

The platform considered, the other principal type of defence may be discussed, namely the stockades.

These defensive remains consist of a stockade of oak posts; fragments of such stockades have been found in at least four places in the city. The earliest discoveries of this stockading mentioned by Chancellor Ferguson, as having been related to him by old inhabitants, were in Citadel Row and under 53 Castle Street, when Messrs. Carr's shops were being built (now occupied by Messrs. Johnson, opticians). Ferguson reports these two sections of the stockade as being of a precisely similar type to the two lengths he personally saw exhumed. It is therefore possible that they were all parts of the same defensive system; on the other hand such a view must be accepted with caution, bearing in mind the frequency of timber work in Carlisle. The portions of the stockade which he carefully records are two, the one at the east end of Bank Street, bordering on Lowther Street, the other on the site of the Bush Hotel. The former section was running under two shops on the south side of Bank Street at its east end, and consisted of two parallel series of stakes 30 feet apart, each series composed of three rows and joined by a cross row. These stakes were set in a quincunx formation recalling the arrangement of the "lilia" before the Agricolan fort at Rough Castle. On the Bush Hotel site a similar though single line of stockading was discovered at a depth of 10 feet on the old surface; the oak stakes were set one foot apart and one foot between each of the three rows, and measured four inches by six inches in width. It

was traced for 30 feet diagonally across the site from north-west to south-east and according to Ferguson would, if produced, meet the Bank Street section almost at right angles. Originally this line of the stockade would be situated near the steep western side of the hill, a natural feature which would determine the limit of the enclosure on this side. If the testimony of those who saw the Castle Street section is to be relied upon, that the structure ran transversely across the street, this might furnish us with a possible northern limit to the stockaded area. From the vestiges of this principal stockade it is evident that the medieval city walls followed closely the ancient line of stakes on the east and probably the west sides of the City, whilst the remains in Citadel Row may indicate a junction section between the east and west fronts. It may be advanced as a tentative conclusion that a single, or possibly double, line of stockading surrounded a roughly triangular area (about 74 acres) of which the east and west sides represented by the Bank Street and Bush sections are reasonably determined, and that there is a possibility that the north side may be represented in the Castle Street section, although this latter is quite uncertain.

In Roman military writers* stockading is often mentioned, but in Britain examples are both few and early. The eastern approach to the Agricola fort at Ardoch was defended by a palisading of exceptional strength, judging by the numerous post holes and sleeper tracks (*Proc. Soc. Antiq. Scot.*, 1897-98, 417-18). Although the columns of Trajan and of Marcus Aurelius depict timber stockading around blockhouses, the use of the material in defences appears to have declined about the middle of the 2nd century. At this period wooden towers on the German

* Caesar (B.C. ii, 29), fortifications of Aduatuca and (B.C. iii, 1) fortifications of Galba in Octodorus.

See also Polybius and Vegetius for palisades in defence of temporary and permanent sites.

limes were replaced in stone, whilst in Arrian's report to Hadrian in A.D. 131 on the Phasis fort on the Black Sea we learn that the " towers formerly of wood are now replaced in brick " (*Periplus of the Euxine Sea*).

Both from the above evidence and from the fact that these stakes occur at the lowest level of the Roman stratum it would appear that the irregular area was defended by a palisade at least as early as the first half of the 2nd century.

The remains of other structures are both meagre and disconnected. Roman Carlisle has yielded no imposing range of buildings, and it shows, in common with northern sites, absence of tessellated pavements; through all the centuries the scarcity of structural remains is most striking as compared with the abundance of small objects recorded. This paucity of substantial architectural remains may be due to its geographical position in the extreme north of the military area of the province, but probably more to the centuries of building which followed the Roman occupation.

What remains have been recorded clearly indicate that Luguvalium consisted at the least of some timbered houses with tiled roofs and possibly tiled floors, one or two buildings heated by the usual hypocaust, whilst a solitary column and its base and an isolated capital may bear evidence of a portico or colonnade. From William of Malmesbury we have the only account of a substantial masonry building, an arched structure which he called a " triclinium." As to the extent of the area occupied by buildings we have only the finds of smaller objects to guide us. In this respect the evidence from the distribution of burials round the site is most valuable in view of the Roman law prohibiting interment within an inhabited area; definitely Roman sepulchral remains are most numerous at the south side of Carlisle, terminating at the site of the gaol, but have been found on the west

side near Backhouses Walk and in the Caledonian goods yard; on the north east at the bowling green near the Grammar School; and an ornamental boss from Annet Square possibly indicates a burial on this northwest side. Within the area thus defined there appear to have been no definite Roman burials, an area which on the other hand has yielded the bulk of the finds other than sepulchral, and which would agree with that bounded by the stockade on the east and west sides.*.

Among the architectural remains the arched structure called by William of Malmesbury a "triclinium" would rank foremost. He said that it bore the inscription *MARII VICTORIAE*. This is in all probability a mistake for *MARTI ET VICTORIAE* such as occurs in inscriptions at Housesteads (*Eph. Epig.* ix, 1179) and at Birrens (*C.I.L.* vii, 1068). Leland makes particular mention of the strong arched stonework which had endured through many ages.† There is no mention made of its dimensions or site, although its structure recalls the arched chambers such as found in the headquarters buildings at Chesters and Aesica.‡

A building furnished with a hypocaust existed on the site of the Carlisle News Room (now Carrick's Café) as evidenced by the discovery of *pilae* when this place was rebuilt in 1880. Another similarly equipped structure was found on the gaol site, possibly without the palisaded area. The masonry remains with more artistic pretensions are few indeed. A capital in red sandstone of a Corin-

* An area roughly computed at 74 acres. The area of Corstopitum was approximately 22 acres.

† The western portion of a stone arch was partly disclosed on the site of the Clydesdale Bank. It appears that its height did not reach five feet, but the span was calculated at 10 to 12 feet, whilst a gutter in the clay underneath is mentioned. It was thought to be a culvert presumably Roman (see these *Trans.* o.s. iv, pp. 91-95).

‡ Leland's *Collectanea*, vol. ii, p. 257. "Ut est in Lugubalia Civitati triclinium lapidis fornicibus concameratum, quod nulla unquam tempestatum contumelia quinetiam nec appositis lignis et succensis valuit labefactari . . ."

thian order from an unknown locality, and a broken shaft of a circular column of freestone (3 ft. 2½ inches in height) and its base found *in situ* on a concrete pavement under the White Horse Inn on the east side of Blackfriars Street. are the sole representatives of their type.

Some of the habitations within the stockaded area appear to have been individually defended by stakes. As an example of this individual defence we have a complicated series of stakes found on the site of the Clydesdale Bank on the south side of Bank Street (these *Trans.* O.S., iv, pp. 91-95). Here there was a double series of stakes, the first consisting of five to seven rows, and the second of three rows. All the stakes were three by six inches in thickness, were driven two to three feet into the clay and projected two to three and a half feet into the Roman stratum, the tops bearing evidence of fire. The second series covered the first and terminated at each end in a circular formation: a little to the rear of these latter were two oak posts eight inches square and seven feet apart, whilst a similar post lay a little behind, and was connected to the first by a row of stakes, the whole resembling the stockaded entrance to a building.

A little further to the west, on the site of the Carlisle and Cumberland Bank, another clump of stakes was disclosed but continued only a short distance, its character being described by Ferguson as distinctly inferior to the principal stockade at the east end of Bank Street. On the north side of Bank Street on the site of the Midland Bank extension I recently noticed a single row of four wooden uprights projecting from the ground in the excavation for the basements; the foreman informed me that several fragments of a terra sigillata bowl, form 37, were found lying by the side of one of the posts and many other fragments of both plain terra sigillata and lattice pattern coarse wares were discovered thereabouts.

Another timber structure was discovered on the site of

the old Crown and Mitre Hotel and adjacent tenements. It consisted of a square of nine oak posts, and several oak beams 10 to 12 inches square "driven in perpendicularly" are also described. These details are meagre, but there is a suggestion of a wooden building surrounded by stock-ading.

With regard to the water supply we have the usual masonry-lined wells so common to Roman sites. Examples have been found on the site of the old Crown and Mitre Hotel near the structure described above; in the yard of the Blue Bell Inn in Scotch Street,* and also in Sewell's Lane a little lower down on the east side of the same street. The latter is especially noteworthy for the discovery here of two beautiful bronze ewers associated with animal remains. The ewers were evidently intended for a religious purpose, sacrificial scenes being depicted on the handles, and their associations with the animal remains justifies the opinion that the place was used for sacred rites.

The oak tanks, a series of structures which form a class peculiar to themselves, may now be mentioned. As an example of their general structure the account of one found on the site of the old gaol described by Hodgson in a letter to John Adamson may be given (*Arch. Ael.* ser. I, vol. ii, p. 313).—"A tank composed of square oak frames covered on the outside with riven oak boards . . . about seven feet deep Behind the planks it was stuffed all round with light blue clay." Several other examples of this kind, varying in depth, have been recorded in different parts of the city; one on the site of the old Victoria Hotel, near the courthouses on the east side of English Street; and another west of the stockade on the Bush site. Three examples were found on the ground

* Mr. Redfern describes the finding of three lengths of oak pump shafting of a 3" bore in this well, the lengths evidently fitted into each other, being pointed for the purpose (these *Trans.* n.s. xxi, p. 255). They may be compared to the "pipe of hollowed pine logs jointed into each other," on the Tullie House site (*Trans.* o.s. xii, p. 356).

covered by the Clydesdale Bank.* One of these intruding on the rows of stakes was therefore of a later date than that structure. A still further instance is supplied by the Crown and Mitre site. The tank at the last mentioned place was four feet square, composed of four oak corner posts, connected with boards puddled on the outside with clay. The presence of this material, as an external lining to several of these structures, clearly indicates that they were intended to hold water. They all contained a black sludge and in some cases Roman objects. There can be little doubt that they belong to a widely distributed class of receptacle, many of which originally served as wells, but later had been used as refuse pits, whilst some appear to have been simply intended as such, numerous examples of which have been found on the Scotch sites, notably at Newstead and Barhill, and on the Continent at the Saalburg.

The presence of drainage is evidenced by the discovery of a stone channel running east and west in St. Cuthbert's Lane, and on the Crown and Mitre site, and the drain consisting of the hollowed trunks of Scotch fir on the Tullie House site already referred to.

There was at least one paved area in Roman Carlisle which extended over all the back of the Crown and Mitre site at the Roman level, but as to the condition of the thoroughfares in general there is no reliable evidence, though Leland mentions the pavements of streets having been found from time to time.

In conclusion it may be summarised that Carlisle presents evidence of two distinct types of enclosures:—

(1) A first-century fortification dating from the campaign of Agricola; as represented by the platform, the early terra sigillata, and the Fisher Street remains of that period.

* These were sunk six feet into the clay.

(2) An irregular area originally enclosed by a palisade, which was the site of a civil settlement, as testified by the many remains of that character dateable from the 2nd century to the last quarter of the 4th century: a settlement which appears to have consisted of many timbered buildings, some of which were individually palisaded, whilst there were at least several more pretentious structures of stone equipped with hypocausts in a few examples, the remainder of this area furnishing evidence of structures characteristic of any settlement such as wells, rubbish pits, and paved areas.

Though these remains are meagre enough they nevertheless form a nucleus conception which may serve as a working basis for future investigation. It is by the spade that our knowledge of Roman Carlisle must be augmented, and as previously urged, excavation might first be directed towards ascertaining the western and eastern limits of the platform, and testing the possibility of a return south towards the Cathedral, ever bearing in mind the strong evidence of first century occupation in this vicinity. Finally it may be pointed out that the remains found on every new site in Carlisle should be carefully recorded and examples of such kept in order to ascertain the general character and date of occupation in various parts of the City.

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