



On a recently discovered section of the Roman Wall at Chester

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Plates I.—VIII.

BEFORE giving a description of the recently discovered remains which formed part of the original fortifications of Deva, permit me to point out, very briefly, some of the physical features of the land upon which the City of Chester is built; and also those portions of its circumvallation which are claimed to be of Roman origin, so that we may the more readily understand the geographical relations of these in the light of the newly-discovered fragment which has laid so long buried beneath the feet of the Cestrians

Judging by the evidence which has been brought to light from time to time, by the spade of the workman, the surface geology of the site upon which the Romans built their camp, in or about the middle of the 1st century, was a small and slightly raised plateau of Bunter-sandstone, overlaid by a thin stratum of boulder-clay and stiff yellowish loam, sloping gently towards the river on both the western and southern boundaries, and with an elevation of about 100 feet above sea-level.

The four main streets which bisect the City within the walls, as we find them at the present day, are laid practically upon the original land surface, so that the ground-

level of these thoroughfares is about two feet higher than it was during the Roman occupation.¹ Away from the main streets, however, we find on all sides that there is an enormous accumulation of made-earth and *debris*, and that this higher and, so to speak, artificial level is clearly indicated on either sides of the four principal streets by the ground-level of the promenade in the respective Rows. In some places there is, however, a marked thinning down of this artificial accumulation, especially towards the periphery of the walls, though in some parts it is continuous beyond, or considerably in advance of them. The maximum depth may be given as 14 feet; the minimum about 4 feet; or an average of about 9 feet. Thus, in the centre of Eastgate Street North, immediately east of Godstall Lane, there is a depth of 13-14 feet; while further northwards, under the Lady Chapel,² there is only 9 feet; and as we approach the Northgate there is but a shallow deposit, though in the Dean's field the accumulation runs to a depth of 12 feet.³

Outside the Walls, on the site of the recent discovery in St. John Street, the depth varied from 14-4 feet; while in Foregate Street, midway between the Eastgate and its eastern end, there is a depth varying from 9-11 feet. Thus, we find that, with the exception of the north wall (east), which rests for the most part on a rocky prominence, there is very little of the Roman work left to us at the present day above the surface of the ground; indeed, a considerable proportion of the older buildings rest with their foundations many feet above the stratum which supported the Walls and other structures of those fortifications which have made Chester so celebrated for its antiquity.

¹ *Watkins* ("Roman Cheshire," p. 112) gives 9 feet in the immediate neighbourhood of the Eastgate; but this is certainly not the case elsewhere in the main streets of Chester.

² *Shrubsole*, "Journal of the Chester and North Wales Archæological and Historic Society," Vol. I. (New Series), p. 215.

³ *Ibid. loc. cit.*

A cursory glance at a map of the City of Chester will give us an exact idea of the plan of the present Walls, and by its aid we shall also be able to gather the relative positions of those portions of them which are claimed by many authorities to be of Roman workmanship, and thereby link together the past with the present discoveries.

If we accept the general census of opinion of those who are qualified to judge as to the origin of the Walls, we may ascribe the major portion of the sub-structure of the north wall, *east of the Northgate*, to be of Roman workmanship. It was in the north wall (east) that so many of the inscribed monuments and architectural fragments were found during the years 1883, 1887-8; and there can, I think, be little doubt that the wall at this point had been reconstructed, though, so far as one can gather, there were no signs of the *outer ashlar-facing having been disturbed*. It must be clearly understood, however, that the whole of the upper portion of the walls on this section of the circumvallation is of comparatively recent date, and is clearly distinguishable from the original work; and as one approaches the Northgate one can also follow the course of the characteristic plinth, and the solid rectangular-faced stones forming the footing beneath it. On the west side of the Northgate there is another section, which is of similar workmanship; and although the plinth is not visible, the soil which now covers it was removed a few years ago, so that the footings might be inspected.

Proceeding to the west wall, we find no trace of Roman work southwards until we reach the Roodee, where, considerably in advance of the present wall, we have preserved to us an extensive section of massive masonry, which is claimed by many authorities to have formed part of the Roman quay. No detailed description of this relic has apparently been given, though *Shrubsole*⁴ refers to it, but considers that it is "forty feet outside the Roman Castra,

⁴ *Ibid.* Vol. I., p. 210. *at Roodee St*

and altogether out of the direction of either line of wall." *Chancellor Ferguson*⁵ also thinks that it may have formed a Roman landing-place before the retiring of the Dee; but whether it ever formed part of the wall of the *Castra* I will not venture to suggest, though there can be little doubt that it was erected there as a protection to the tidal waters of the Dee, which at that period had only just begun to form a barrier to their own encroachments, some twenty feet below the present surface of the Race Course.

At the Kaleyards, on the east side, a little in advance of the modern wall, is a section of masonry measuring in its greatest length 66 feet 9 inches. Four courses of work only are visible above ground,⁶ but these bear a most striking resemblance to those forming the ashlar work of the portion just discovered. It would cost a mere nominal sum to have the foundations of this old fragment re-examined, and the period of its erection definitely fixed; though I have little doubt that it is Roman, and possibly 1st century work. 230 feet south of this there are traces of similar work, projecting as a "set-off" to the remaining portion of the wall; but this section is very difficult of access, and so far I have not been able to make a critical examination of it.

Coming southwards we pass over the Eastgate, and proceed as far as the back of Messrs. Dickson's Seed Warehouse, a few paces north of the Wolf Tower, where, in the basement of this establishment, is preserved, *in situ*, an excellent section of the Roman Wall, with its plinth and a portion of the foundations quite intact. It lies 15 feet 6 inches outside the existing wall, and was discovered in the year 1892. This brings us to within a few yards of the scene of our most recent find, which commences immediately beyond the south retaining-wall of Messrs. Dickson's building.

⁵ *Journal Archæological Institute*, 1888.

⁶ No mortar is visible in the joints of this work.

THE RECENTLY DISCOVERED SECTION OF THE
ROMAN WALL.

So soon as it was known that the National Telephone Company had purchased the property adjoining Messrs. Dickson's Seed Warehouse, for the purpose of erecting a new Exchange Station upon the site, steps were immediately taken by the Council of the Chester and North Wales Archæological Society to call the attention of the authorities to the probable existence of a continuation, and the possible termination, of the foundations of the east wall of the Roman Castra. In his reply to the Venerable Archdeacon Barber, Mr. G. H. Robertson (one of the Directors of the Company) very kindly promised to give attention to the matter, and at the same time expressed a wish to give every facility to the Society for the inspection of the ground during the excavations. As Honorary Curator of the Society I was instructed to visit the place, and report upon anything which might be brought to light of archæological interest.

Early in the month of June 1908, my attention was called to the discovery of some extensive blocks of masonry, a few feet south of the Wolf Tower (fig. 1), and these subsequently proved to be the upper-courses of the most extensive and perfect section of the Roman Wall which one may safely say has yet been discovered in Chester. Shortly after this discovery, Professor Bosanquet visited the site, and subsequently reported the matter to the Council of "The Liverpool Committee for Archæological Research in Wales and the Marches," who very kindly made a grant of £5 towards defraying the cost of any further excavating which might be found necessary.

Having uncovered the greater part of the wall, it was suggested that the Mayor and the Sheriff of Chester, with the Town Clerk and representatives of the Chester and North Wales Archæological Society, be invited to meet

the Architects (Messrs. Bromley & Watkins) and the Director of the National Telephone Company, with the view of arranging* for the preservation of the wall; Professor Bosanquet and Professor Garstang being in attendance as representing the Liverpool Committee.

After a long discussion, it was decided to leave the matter in the hands of the Directors; and at a subsequent meeting of the Board it was unanimously resolved to alter the original plans of the new buildings, so as to preserve the greater portion of the wall.

This has been accomplished at considerable expense, by placing steel-girders over the Roman work at the two points where, in the original plan, it would have been necessary to remove the greater portion of it. In addition to this, a subway has been made in front of the wall, and the floor-line of the room above slightly raised, so that about forty feet of the wall will be preserved, of which a portion will be left exposed in the open yard, but will be protected with an iron grid. The rest will remain under cover in the subway. By this most excellent arrangement, only sixteen feet at the north end have been buried between two retaining-walls and the tower. It is important to note, however, that the two short upper-courses of seven squared stones had to be removed, as they came above the floor-line of the building; but they have been replaced at the south end, in order to make good that portion of the wall.

The site of the exploration was, until the beginning of the year, covered with dilapidated cottages and narrow courts. After the ground had been cleared of these, the excavations for the basement rooms were commenced, and carried down to the surface of the sandstone rock; and it was while this work was in progress that the discovery was made. At first, it was possible only to expose the northern half of the wall; but a few weeks later, when

the ground had been cleared of building material, we were able to resume operations, and to follow the foundations as far as the southern boundary of the National Telephone Company's property. It is quite evident, however, that the wall extends beyond the limits of the present excavations; and we hope to be able shortly to get the necessary permission to sink a trench in a small open space in the adjoining property, so that its further course may be traced as far as possible.

Details of the Wall.—The total length of the wall (fig. 2, and Plan Plate VI.) as at present recovered, is exactly 56 feet 10 inches. Its northern extremity abuts on the retaining-wall of Messrs. Dickson's warehouse, which is 24 feet 3 inches *north* from the *southern face* of the Wolf Tower; and it has been exposed southwards of this point for a distance of 33 feet. It takes a practically straight course until it reaches a point about 22 feet south of the *centre* of the tower, where it commences to curve distinctly westwards, or towards the present Pepper Gate. The face of the ashlar work, near the commencement of the curve, is about 21 feet 6 inches in advance of the present wall;⁷ but the north-east face of the Wolf Tower rests with its footings upon the rubble of the Roman Wall.

The greatest height of the ashlar work was, approximately, 6 feet 6 inches above the original land-surface, and consisted at this point of seven courses of masonry, inclusive of the weathering-plinth and sub-plinth; but the courses on either side of the higher sub-central portion gradually tapered away, so that at the southern end the plinth and sub-plinth only remained, and these in a not altogether perfect state of preservation.

The whole of the ashlar work had been most carefully constructed, the blocks of stone being laid in very regular

⁷ The section preserved in Messrs. Dickson's warehouse is 15 feet 6 inches distant from the present wall.

and, for the most part, closely jointed courses. The dressing on the outer-faces was so fine as to leave little trace of the workman's chisel; and many of the blocks show distinct signs of weathering. The face-joints (bed and vertical) were in many places so close that it was impossible to insert the blade of a pocket-knife between them; but the same care had not been taken in the interior of the wall, where the joints varied from touching point to as much as 2 inches in width. In one instance only was there found any attempt at the bonding of a second course of squared stones with those forming the ashlar work. It is just possible, however, that a similar form of bonding may have been employed elsewhere,⁸ though it was quite evident that this was exceptional, as the masonry was exposed in several places between the Wolf Tower and the southern terminus.

*No trace of mortar was discoverable in either the bedding or the joints of the masonry; and it was quite evident that none had been used. This was abundantly proved when the masonry forming the two upper-courses was removed, and a most careful inspection made at other available points. The materials used both for bedding and jointing of these large stones consisted of sand (evidently taken from the soft upper stratum of the local sandstone) and a dark-coloured arenaceous earth. Among this material, chiefly in the large cavities and spaces between the rubble-work and the masonry, were found, almost throughout the whole length of the wall, many examples of the garden snail (*Helix aspersa*). The shells of these animals were in many instances so completely imprisoned in the masonry, that it was quite evident that the animals had crawled into the cavities during the construction of the wall, and there perished.*

The height of the plinth and sub-plinth, respectively, was 9 inches; and the height of the superimposed courses

⁸ Bonded stones are seen in the section in Messrs. Dickson's warehouse.

uniformly 12 inches throughout the whole length of the ashlar work. The dimensions of the squared stones employed in the wall are :—

Largest stone in the sub-plinth	...	3ft. 7½in. × 3ft. 7in. × 9in.
Smallest	„ „	... Of similar dimensions
Largest in the weather-plinth	...	2ft. 3½in. × 3ft. × 9in.
Smallest	„ „	... 1ft. 6in. × 2ft. × 9in.
Largest in the ashlar courses	...	4ft. × 2ft. × 12in.
Smallest	„ „	... 2ft. × 2ft. 6in. × 12in.

The first measurements given are those of the length of the stone ; the second of the width from front to back ; the third of the height. Immediately behind the masonry was a backing of rubble-work, more or less coursed to correspond with the masonry (figs. 4, 5, 6) ; though this was not in all cases strictly followed. The facing of this rubble was perfectly vertical, though it presented a distinctly jagged edge (figs. 4, 5, and Section Plate VII.) It naturally varied in thickness owing to the irregular lengths of the masonry which projected into it ; but the latter and the rubble-work together, gave an average thickness from front to back of 4 feet 6 inches ; the maximum being 4 feet 7 inches. The rubble was formed of roughly-hewn fragments of rock, varying in size from a few inches square to examples 8in. × 6in. × 4in. ; 12in. × 8in. × 4in. ; 27in. × 5in. × 4in., &c. None of the fragments showed signs of having been dressed, but in a few instances they had been roughly squared on one or two sides ; the joints were, therefore, generally wide and irregular, and these had been somewhat carelessly filled in with mortar, which varied in degrees of hardness ; but in very few instances was it found of that intense rocklike nature which has so frequently been met with in the concrete foundations found in other parts of the City. Large quantities of *soil* and sand had also been used to fill in some of the cavities, more especially so between the masonry and the rubble ; it is possible, of course, that some of the mortar may have been reduced to this condition through the removal of the

lime by the action of water ; but the soil and sand occurred in so many instances in pockets and crevices which were surrounded by mortar, that I do not think that water could have brought about the conditions which were found to exist.

The foundations, as will be seen from the section (Plate VII.), were solid and deep, and built entirely of rubble of precisely the same character as that which formed the inner-lining to the masonry ; in fact, it was a continuation of this form of work, and it was also seen to be placed in more or less regular courses. The lowest course of all was, however, formed of a single layer of boulder-stones bedded in mortar, and these rested upon a stratum of soft undisturbed red sandstone. Coarse river gravel and silt were freely used with the mortar in these foundations.

Artificial backing of earth behind the wall (figs. 4, 5, and Section Plate VII.)—Behind the rubble-facing of the wall was found a solid bank of fine stiff clayey-loam, somewhat mottled, and veined with yellow and white, having many fine fragments of charcoal in its composition. In some places it was decidedly more arenaceous than in others, more especially the inner half ; but the whole formed a tough stiff loam which may have been produced by placing layers of closely packed turf together. This backing of earth showed, in one section, a thickness of 2 feet 9 inches, and for a height of 5 feet had a perfectly vertical outer-face corresponding to the height of the masonry from the base of the weather-plinth on the opposite side of the wall. Its thickness at other points cannot, at present, be ascertained, but it is seen to be continuous for about 15 feet north of the section which was fully exposed ; so that one may infer that it formed part of the rampart, though, unfortunately, we cannot at present find any trace of its having been protected by a pitching of stones or masonry. The line of

demarcation between this artificial backing and the made-earth and debris behind it, was so clearly defined that there can, I think, be no doubt it formed part of the original structure of the wall of the camp. Considering it as such, this additional structure gives us, together with the masonry and the rubble, a total thickness, over all, of 7 feet 3 inches; but whether this represents the total width of the rampart is doubtful, as the made-earth behind it, which is undoubtedly of a much more recent period, cannot at present be excavated. It is tolerably certain, however, that the vertical wall of clay could not have retained its present form without some substantial support in the form of masonry or stonework; and if such a structure existed, it may in all probability have been removed at a later date, and have been used for some other purpose.

The stone used in the masonry and rubble work consisted entirely of the local red sandstone of the Bunter pebble-beds, and is of the same formation as that upon which the foundations rest; there was no trace of any of the material having been brought from the Upper Keuper sandstone at Manley or elsewhere. The pebbles used at the bottom of the foundations were all such as could have been obtained in abundance from the boulder-clay everywhere in the immediate neighbourhood of the camp.

The builders' *modus operandi* was, so far as one could ascertain from the excavations, to cut a trench a little wider than the total width of the foundations, and from 4 feet to 4 feet 6 inches deep, passing through the following strata, each averaging about one foot thick: made earth, yellowish boulder-clay, red arenaceous clay, soft rock (locally known as "roach"), to the surface of the more solid shaly sandstone (Section Plate VII.) No trace of a "set-off" was discoverable on either side of the foundations; indeed, the course of boulders was, if anything, slightly shelved under, and they were placed

somewhat similar to ordinary pitching, though very little care had apparently been taken in placing them.

Objects found in the wall.—Reference has already been made to the number of shells of *Helix aspersa* which were found in the cavities and among the loose earth and sand which had been used to fill in between the masonry and rubble. The bones of a frog were found in a cavity between the joints of the masonry; and a portion of the pelvis of a sheep between the masonry and the rubble. On the bedding surface of the large worked-stones were found, in several places, little collections of fine charcoal and coal, but more especially so on the inner projecting stones. A sharp look-out for pottery was kept, but none was found. The only object recovered being a small fragment of amber-green glass, which is, so far as one can judge, of a totally different colour from any Roman glass hitherto recovered from excavations in Chester.

Objects found immediately in front of the wall.—In cutting a trench 4 feet wide in front of the entire length of the wall, many fragments of worked stones, as well as a few more or less perfect ones, were found. These had undoubtedly formed part of the superstructure of the wall, as they were of the same thickness as those which were used throughout its structure. In addition to these, three broken moulded-stones, and a small fragment of the drum of a small column, were found at various places, chiefly, however, in the space between the level of the plinth and the first ashlar course of masonry. Scattered very sparingly between these, throughout the whole length of the trench, were fragments of large amphoræ, flat-flanged roofing-tiles, and half-round imbrices of the characteristic Roman type; a portion of a mill-stone; one piece of Roman glass; a bone pin; fragments of cinerary urns in Upchurch ware; and one small piece of red-glazed Samian ware; but no other remains of the fictile art were discovered immediately in front of the wall. Here also were found the horn cores of the ox and

goat ; of the former there were two distinct types : the smaller horn cores are probably those of *Bos longifrons* ; and one, which is unfortunately imperfect, is from a much larger animal, and may prove to have belonged to an immature example of *Bos primigenius*. The base of this bone has a circumference of $9\frac{3}{4}$ inches ; while those of the *longifrons* type measure only $5\frac{1}{4}$ inches. At a point exactly 7 feet south of the Wolf Tower, and 21 inches from the base of the masonry (sub-plinth) was a narrow pebbled foot-way (?), formed of small boulders, extending eastwards and at right-angles to the wall. The stones were laid in two irregular rows, extended for a distance of 4 feet 3 inches, and were firmly embedded in the upper stratum of the boulder-clay. I can assign no use for this little paved way, excepting that it may have been used as a temporary foot-way during the construction of the wall.

The fosse (Plate VII.)—This was excavated in two places, and a portion of it was exposed in a third. The first trench was cut in a line immediately south of Messrs. Dickson's retaining wall ; but it was so faintly indicated at this place, owing to land having been intersected by a cesspool, that it was impossible to follow its original form with any degree of exactness. Later, a second trench was cut some 20 feet south of the Wolf Tower, and here the form and dimensions could be distinctly traced, especially so in the lower portion which had been cut through the upper stratum of rock. It was not of the usual V-shaped form owing to the construction of the bottom which was broad and flat, measuring about 4 feet 4 inches in width. Its greatest width from lip to lip was not so easily ascertained, but it measured, approximately, 22 feet ; and its greatest depth, taken from the level of the lowest course of masonry or sub-plinth, 9 feet 3 inches. A well-defined channel had been cut in the rock at the foot of the outer-wall of the ditch, on the east side, which was subsequently traced northwards for a

distance of 12 feet. In one of the sections the rock at the bottom of the trench sloped gradually towards the channel, so that it may have been used to carry off the surface water. In sinking a shaft for the foundations of a column the ditch was again intersected, though, in this instance, the inner-wall only was exposed; here, the rock had been hewn out to a depth of 4 feet 6 inches, and the face of it gave an angle of 45 degrees, approximately.

The filling of the ditch, between the level of the lowest course of masonry and the bottom, consisted of the following materials: the first three feet of arenaceous clay (? rain-wash), with pockets and irregular layers of black soil, containing small fragments of charcoal and a few plant remains; five pieces of waste bronze; two fragments of Roman roofing-tiles; and one of an imbrex, were found in this stratum. In following the course of the channel at the bottom of the ditch, a quantity of the earth removed from it was found to contain a large percentage of bright blue colouring matter, slightly crystalline in form, but appearing to the unaided eye as a fine powder. It was so mixed with the soil as to render it impossible to collect any appreciable quantity for analysis; but examples have been preserved with the soil. Above this layer was a stratum, averaging 4 feet 6 inches thick, of black cheesy soil, composed largely of vegetable matter, including an enormous amount of very small bits of bark and wood; many hazel nuts; a few bones of the goat, sheep, ox, horse, and the domestic fowl; portions of pitchers, jugs, and tegs, of the 14th to 17th centuries; leather, bricks, fragments of rock, &c., &c. The bark and small fragments of wood may have been the waste from a local tannery, as Chester was, at one time, a noted centre of the tanning industry. One small piece of wood taken from this stratum was in a sub-fossilised condition, the central portion having been replaced by hydrated mineral matter.

The upper stratum, averaging 7 feet 6 inches, had been intersected by the foundations of cottage walls, and was made up of all kinds of debris: such as soil, ashes, shells of the cockle and mussel, building materials, potsherds, &c. The inner-lip of the ditch was about 4 feet 6 inches from the face-line of the sub-plinth, or, approximately, 6 feet from the face of the wall proper; but the superincumbent earth above the level of the plinth contained many fragments of *tegulæ*, and other objects of the Roman period. The skull of a horse, in a fairly good state of preservation, was found on the outer-surface of the outer-lip of the ditch.

Description of the objects recovered from various parts of the excavations.—With the exception of a beautifully preserved flint axe⁹ of the palæolithic type, the objects recovered from these somewhat extensive excavations were very few in number, and of such a fragmentary or imperfect character as to require but a brief description. Apart from the prehistoric implement, only such other finds will be described as can be attributed to the Roman period.

Coins.—Only two were handed over by the labourers, though a third example was recovered from a local tradesman, who had purchased it from one of the workmen employed in making the excavations. One of the coins is probably that of Hadrian (A.D. 117-135); the obverse has the Emperor's head to the right; but the lettering, and also the reverse, are so badly oxidised and scratched that it is impossible to decipher the legends. The second example is a small and imperfectly struck coin, with the legends wanting; the obverse with the Emperor's head to the right; the reverse a figure standing. The third coin is a second bronze of Vespasian, in excellent preservation. Obverse, Emperor's head to the right, with the legend: "IMP. CAES. VESPASIAN AVG. COS" Reverse,

⁹ See Appendix II. of this Report.

an eagle with wings displayed, and the legend "s.c." near the margin.

Objects in bronze.—Two small buckles, almost identical in size and shape, were the only personal ornaments recovered; these measured $1\frac{1}{4}$ in. \times 1 in., and one of them bears about ten deep transverse ridges on each of the lateral rims. Two large nails, one with a thin hemispherically shaped head, the other with a quatrefoil head, were found in an imperfect state of preservation; a small piece of waste sheet bronze; one fragment of bronze slag; and the five pieces of waste bronze from the trench complete the list of objects in this metal.

Pottery.—The eight fragments of figured Samian ware which were found, are all from bowls of the common hemispherical type, many of them having the ovolo border, or egg and dart pattern, below the rim. The styles of ornamentation are shown in the accompanying figures (Plate V.), so that further description is not necessary; all the more so seeing that they do not differ in any marked degree from examples found hitherto in other parts of the City. On the same plate are shown the section and plan of a small cup and a large saucer-like bowl, both in plain Samian ware, but, unfortunately, in a fragmentary condition, about one-fourth of the vessel being represented in both instances. No graffiti or potter's names were found on any of these fragments.

Of the dark-grey ware, known as "Upchurch," there are about eleven fragments, all apparently of the common types of cinerary urn met with so freely in other parts of the City; one of these bears the characteristic diagonal pattern in lines. There are, besides these, several pieces of terra-cotta ware; four large fragments forming part of the lower basal portion of a large wheel-made amphora or similar vessel, having a broadly pyriform base, with a diameter of $11\frac{1}{2}$ inches.

Tiles.—Attention has already been called to the occurrence of fragments of flanged roofing-tiles near the wall and in the fosse. They occurred elsewhere throughout the excavations, but were by no means plentiful; and bits of the ridge-tiles or *imbrices* were even scarcer.

Glass.—Roman glass has always proved to be scarce at Chester, and this site was no exception to the rule. Three fragments of a pale-blue bottle of the usual square pattern were collected. These consisted of a small piece of the rim or lip; a fragment of the base; and a flat-reeded handle a little over 2 inches in breadth at the point of its attachment with body of the vessel.

Stone objects.—A small section of the lower stone of a quern of vesicular lava was taken from the trench immediately in front of the wall. In section it is more or less wedge-shaped, tapering on both sides gradually towards the centre. The outer-edge measures $2\frac{1}{4}$ inches; the inner-fractured end one inch; its original diameter being, approximately, 16 inches. A well-shaped spindle-whorl made from a piece of fine, soft, grey grit, about $1\frac{1}{4}$ inches in diameter, was found just above the boulder-clay, near the foundations of the wall. One may assume, therefore, that it is of Roman workmanship.

Objects in bone.—One roughly-formed bone-pin was found near the foot of the wall. It measures $6\frac{1}{2}$ inches in length; and still retains the sharp edges left by the instrument used in its manufacture. Another bone, evidently also intended for a pin, was left in an unfinished condition, and was found just above the stratum of boulder-clay.

Classical moulding.—The three fragments, of which sections are shown on Plate VIII., were all taken from the trench immediately in front of the wall. The most perfect example shows the typical ogee moulding, with two fillets above and one below. One piece is very much

weather-worn, the others are not so. They are identical with the fragment found near the wall in Messrs. Dickson's warehouse.

Having considered the structural details of this interesting discovery, it remains to be seen how far it agrees with those other portions of the fortifications of Chester, to which I briefly referred at the commencement of this Paper.

North Wall—East of the Gate.—The portions of this wall claimed to be of Roman origin differ from the newly-discovered section in the following details: the courses are of varying heights; the sub-plinth is formed of two courses of masonry; and in the place of a rubble-backing, set in mortar, the interior was found to contain architectural fragments and inscribed monuments of the Roman period, thrown in promiscuously. Broadly speaking, therefore, it agrees in one point only, and that is in the absence of mortar in the masonry and the rubble work. The wall is, however, backed with earth on the inside, but whether this is of a similar character to that found recently I cannot say; as, so far as I can trace, no detailed description of it has been given.

West Wall.—Judging by a superficial examination of the masonry at the Roodee, this is a much more massive piece of work, and the beds of worked stones are laid at least two deep, and they are set, apparently, without mortar. No plinth has been found, though the wall has been excavated to a depth of 15 feet,¹⁰ so that, on the whole, this work bears the least resemblance to the newly-found section of any.

¹⁰ Mr. I. M. Jones, in comparing this work with that in the North Wall, says that he found the large stones, erroneously described as footings, had more than fifteen feet of the same massive masonry underground; the actual footings I have not accurately determined, owing to four or five feet of water being above them, but I have shown them as square on the annexed drawing. (The drawing referred to was not published.—R.N.)

East Wall.—At the Kaleyards one finds the same kind of ashlar work without any trace of mortar in the joints. The plinth of this section is not now visible; but Mr. I. M. Jones¹¹ found it at some depth (no figures given) below the ground, and says that it is of the same character as that in the North Wall; and, further, that he did not find “any trace of concrete backing.” He is silent, however, as to the exact nature of the interior, and, moreover, he makes no reference as to the character of the foundations below the plinth. It is impossible, therefore, to say what the structural details of this section are like without further investigation; but, judging by its external appearance, there can be little doubt that it is of the same kind of workmanship and of the same period as the section under discussion. The fragment preserved in Messrs. Dickson’s warehouse is, structurally, identical in all its details.

CONCLUSIONS

Taking all the facts into consideration, the evidence is fairly conclusive that the newly-found portion of the east wall differs in a somewhat marked degree from the sub-structure both of the north and west walls. While admitting this, I wish it to be clearly understood, however, that I do not dispute the Roman origin of these fragments of the old wall; I am, at the same time, not unmindful of the fact that objections and counter-claims have been advanced by eminent archæologists as to the period of their erection.

As to the age of the present discovery, I have repeatedly referred to it as of Roman origin, and I have based this supposition upon its structural details; the presence of the ditch in advance of the wall, and the finding through-

¹¹ Journal of the Chester and North Wales Archæological and Historic Society, Volume I. (New Series) p. 190.

out the whole length of its exterior many fragments of Roman tiles, pottery, bone-pins, and glass, all of which were not intermixed with similar remains of a later date.

One other point should be emphasised, and that is the distinct curve at the southern portion of the wall. There can, I think, be no doubt that we have, for the first time, discovered the south-east corner of the Roman wall; and although we have not followed the complete length of the curve, sufficient has been uncovered to show that the south wall of the Roman camp extended in a line drawn due west, from a point at or near the Pepper Gate to Blackfriars. That such a line was followed by the south wall of the Roman camp has, I believe, never been disputed; but the only evidence in support of this, was the discovery in Bridge Street, west of St. Michael's Church, of an extensive concrete foundation, thought by many to indicate the presence of the "south gate"; and the presence, some few paces south of this, of a deep wide "drain" (? Roman fosse) cut into the solid rock. The supposed foundations of the south gate have been, in part, recently laid bare; the particulars of which are given in the Appendix I. to this Report.

APPENDIX I.

ON A ROMAN CONCRETE FOUNDATION IN BRIDGE STREET (Plates IX., X.)

On the 30th June, 1908, in the course of excavating for a drain from Lloyd's shop (No. 63, Bridge Street), immediately on the north side of St. Michael's Church, some workmen unearthed and cut through two sections of a Roman concrete foundation. The first section (marked *a* on the Plan) lies immediately under the face-line of the shop in question, and projected about 12 inches under the pavement; but how far it extended beneath the floor

of the shop it is impossible to say, as the excavations were not continued further in an easterly direction.

The second and larger section of the foundation (marked *b* on Plan) measured, in its greatest basal-length, on the south side of the cutting, 6 feet; the greatest depth from the surface to the base-line, approximately, 2 feet, tapering off towards the western extremity to about 12 inches, in some places slightly less. Its eastern extremity lies exactly 10 feet from the face-line of the building; and both sections lie about 2 feet from the surface of the present street-level. A section of about 2 feet 6 inches was removed from the larger block; the north and south portions being left intact. That portion of the concrete which projected into the street under the footway was entirely removed, but, as far as one could gather, a large section was left immediately under the doorway of the shop.

The concrete was formed of relatively small boulder-stones from the glacial drift, and they were irregularly but carefully embedded in mortar, which for hardness almost equalled that of the boulders. The sand employed in the manufacture of the mortar was reddish in colour, and had probably been taken from the soft upper-stratum of the Bunter beds. A much larger proportion of it had been used on the outside (west) of the foundation, and it was here that the concrete was of a decidedly softer nature. Plant remains and small splinters of wood occurred sparingly in the mortar; and, among the former, one recognized some short split stems of the common bracken (*Pteris aquilina*), and wheat straw. One noted also that there was a marked presence of fine dark organic matter surrounding the pebbles at both the eastern and western extremities of the foundation, where the larger proportion of sand had been employed. This matter may have percolated through the superincumbent earth, but it is much more likely to have been present upon the pebbles when they were embedded in the mortar.

It was quite evident that less care had been given in the preparation and laying down of the foundation on the western extremity of the larger section than that of the more central portion, as it was placed less regularly, and, in consequence, was much more easily removed than the thicker portion. The lime employed in the more solid parts was also of a slightly different character to the rest, having, throughout the whole of its composition, large and more or less angular patches of pure lime without the admixture of sand. On referring to the Plan it will be seen that the space between the two sections of concrete is intersected by the gas and water mains, and, sub-centrally, by an older brick-culvert. I am informed that the concrete was removed when the pipes were laid, so that it is quite evident that the foundation was, prior to the laying down of the mains, quite intact and continuous along the line drawn due east and west in the section (*a, b*) shown in the drawing accompanying this Paper.

There can be no doubt, therefore, that these remains are a continuation, *northwards*, of the extensive foundations discovered in or about the year 1886, and referred to by the late Mr. Shrubsole,¹² in his Paper on the "Walls and Streets of Deva," as "covering an area of 14 feet under the steps of St. Michael's Church"; but the only details he gives are that "the concrete was composed of small boulder-stones bedded in the usual mortar"; and further, that "it was so unyielding that it was not possible to procure a specimen of it for the Museum." It is not a little disappointing that he has given us such a meagre description of this find; though it is clear that he attached considerable importance to its discovery, inasmuch as he claimed the foundations to have been those of the southern gate of the Roman wall. In a later Paper he again refers

¹² "Deva: Its Walls and Streets." Journal of the Chester and North Wales Archæological and Historic Society, Volume I. (New Series), p. 213, 1887.

to this concrete foundation, and it is important to note that, in this instance, he describes its position as being “*by* the tower and steps” of the Church;¹³ so that one may safely infer that it extended into the street, and that it was not altogether “*under*” the tower steps leading into the Church. On looking at the Plan (Plate IX.) it will be seen that there are two sets of steps under the tower of the Church: one facing Bridge Street, the other facing Pepper Street; so that, in the light of Mr. Shrubsole’s description, it is impossible to decide whether he intended the one or the other. Fortunately, however, I have been able to gather, from reliable sources, that the foundation in question extended along the Bridge Street frontage of the tower of St. Michael’s Church, and that its position may be *roughly indicated* as lying somewhere within the dotted lines¹⁴ shown in the Plan (Plate IX.) at *c*.

APPENDIX II.

PRÆHISTORIC (Plate XI.)

A flint or cherty-flint implement (fig. 8), of distinctly palæolithic form, was found lying among some fallen debris, which had slipped from the sides of the excavations on the site of the National Telephone Company’s new offices. The earth in which it was found was blackish, and from above the stratum of boulder-clay. It was lying 18 feet in advance of the Roman fosse (east), or, roughly, about midway between the outer-lip of this structure and the footway in St. John Street. The exact depth from the surface could not be accurately ascertained, as the fall of debris was considerable. That it had been lying

¹³ *Ibid.*, Vol. III. (New Series), p. 78, 1890.

¹⁴ In excavating for the water main to the new underground lavatory in April 1909, an additional 5ft. 9in. of this concrete was exposed, extending due south along the upper dotted line in continuation of the section shown at B in plan.—R.N.

amongst building material was quite evident, as a few small patches of lime were firmly attached to it; but it was otherwise covered with soft black soil, when handed to me fresh from the excavations.

It has been formed, apparently, from an outer "flake" or chipping, taken from a large water-worn boulder, as it still retains two patches, one at the broad end, and the other towards the tip, of the original grey-brown surface; it is on this side that the implement has been chipped into shape. The opposite side bears a large concoidal fracture, with little or no trace of subsequent chipping, and presents a smooth, though uneven and unworked, appearance. The colour of the worked face, which originally formed the outside of the stone, is smoky-brown, with greyish and yellow vermiculations, and, to the left, conspicuous spots and blotches of yellow; on the opposite or cleanly-fractured side the yellow preponderates, and the vermiculated and mottled appearance is due to this colour. The surface on the worked side is distinctly "worn" in appearance, and the edges are blunt and finely chipped, possibly from frequent and constant use. It measures in its greatest length $4\frac{4}{10}$ inches; and in width $3\frac{4}{10}$ inches; and the greatest thickness a little less than 1 inch. It weighs $6\frac{3}{4}$ ounces.

Mr. Reginald A. Smith, of the Department of British and Mediæval Antiquities and Ethnography, British Museum, has recently examined this implement; and in his letter dated 17th April, 1909, has kindly furnished the following particulars:—

"You were certainly right in describing it of palæolithic form. But one may go further, and call it frankly a palæolithic worked flake. Its presence in the soil at Chester is explained by your remark that it was embedded in building material, and not in situ. Unless it is altogether exceptional, and found in the area not

generally regarded as habitable during the palæolithic period (roughly north of a line from the Severn to the Wash), it must have been brought into Chester from some river-gravel south of that line. We have here on deposit a somewhat better implement, said to have been found in Lincoln, but can get no confirmation of its occurrence in situ there." "The specimen has a typical palæolithic patination, and seems to have been used at more than one period, with a pronounced bulb of percussion. I would suggest that the circumstances of its discovery should be fully stated on a label, and some prominence given to it in your Museum as an exceptional piece."





Fig. 1.—Wolf Tower, with upper portion of Roman Wall
looking N. N. W.

a Ashlar work ; *b* Rubble ; *d* Footings of Wolf Tower ; *f* Wall of modern cottage

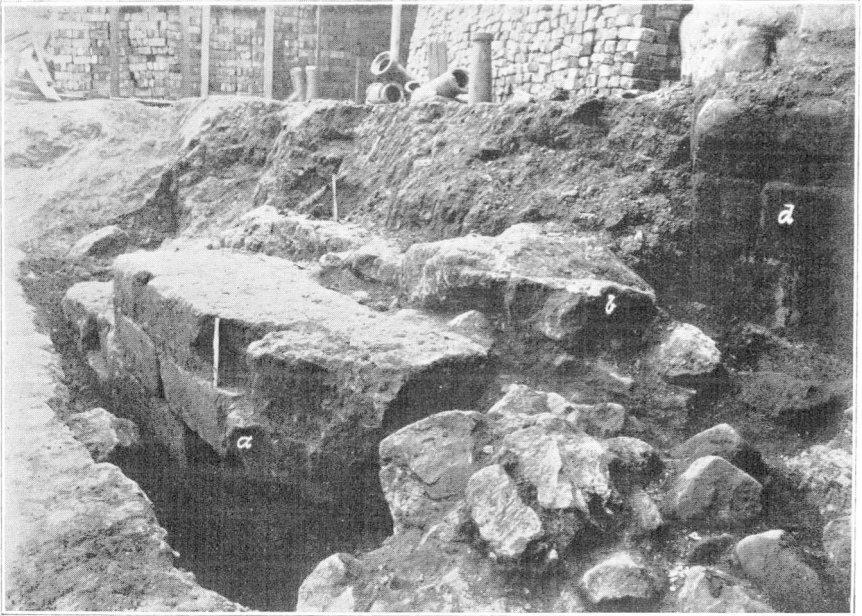


Fig. 3.—Upper portion of Roman Wall, looking south.
a Ashlar work; **b** Rubble; **d** Footings of Wolf Tower

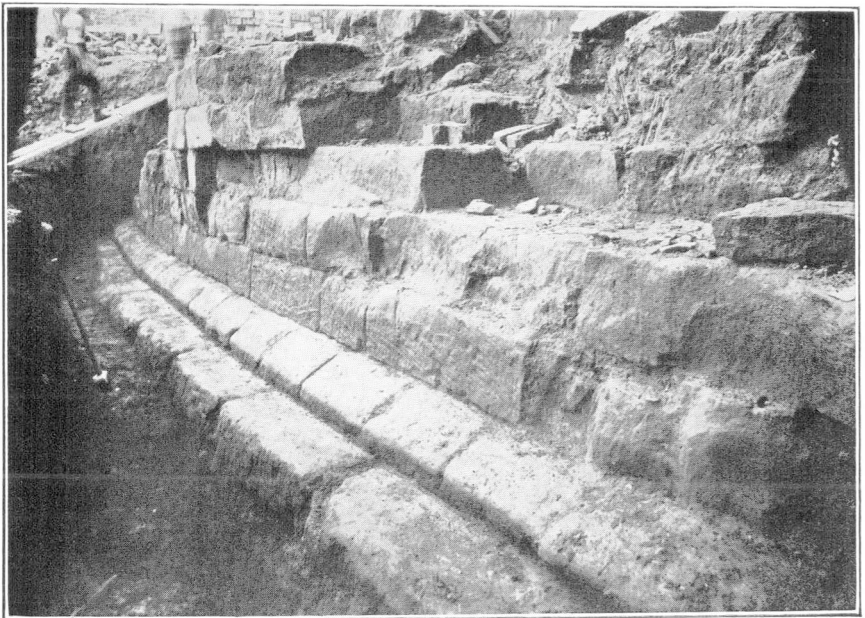


Fig. 2.—Roman Wall, looking south.
Foundations below footings not exposed

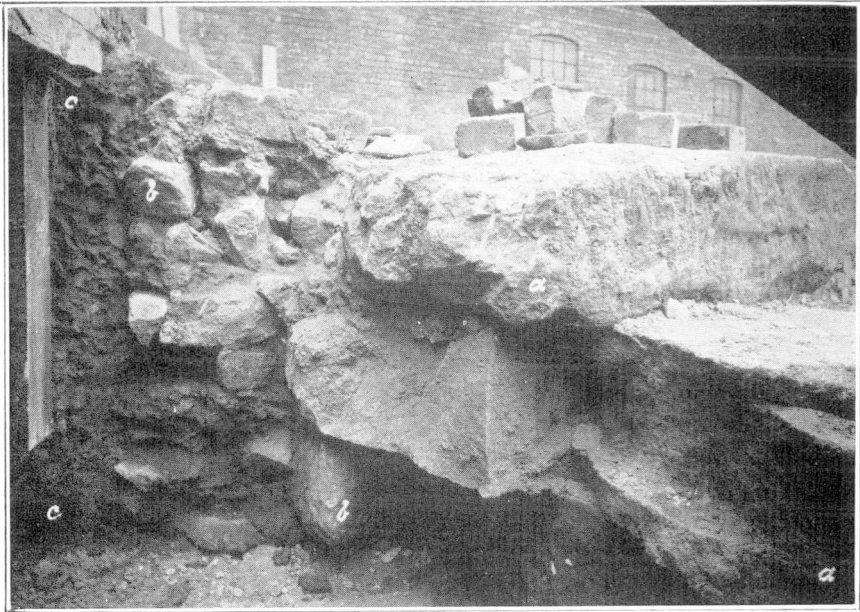


Fig. 4.—Roman Wall (interior, looking north).

a Inner face of ashlar work ; **b** Rubble ; **c** Clay-loam backing

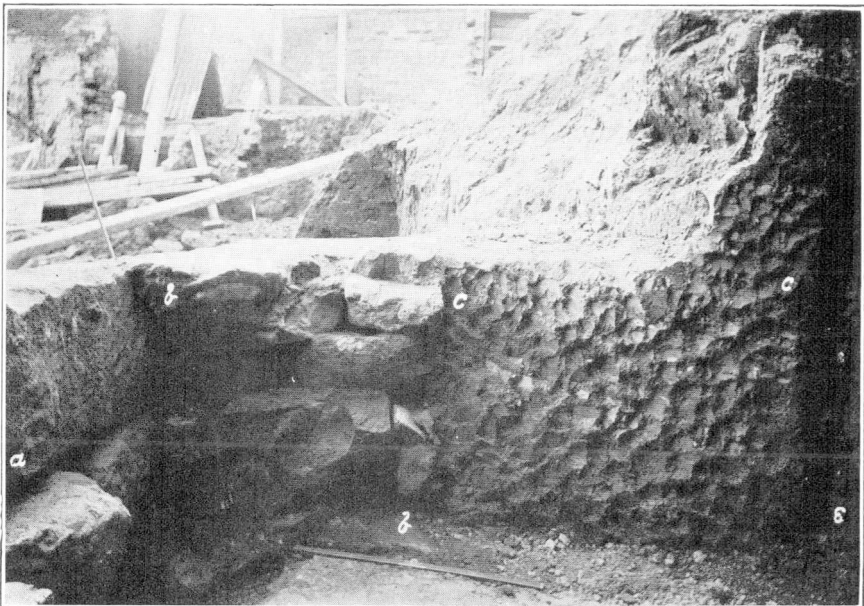


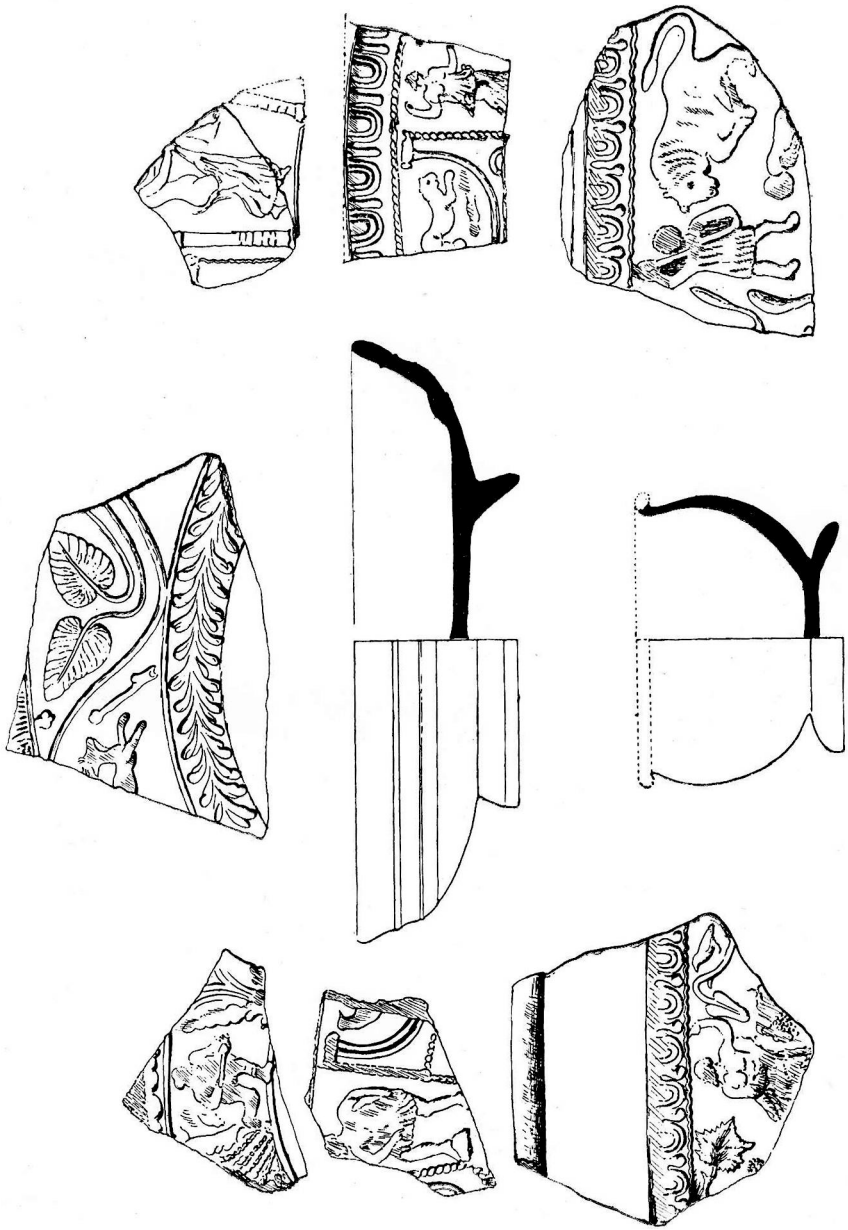
Fig. 5.—Roman Wall (interior, looking south).

a Inner face of ashlar work ; **b** Rubble ; **c** Clay-loam backing ; **e** Made earth



Fig. 6.—Roman Wall (portion at north end)
showing at *b* the coursing of the rubble work

PLATE V.

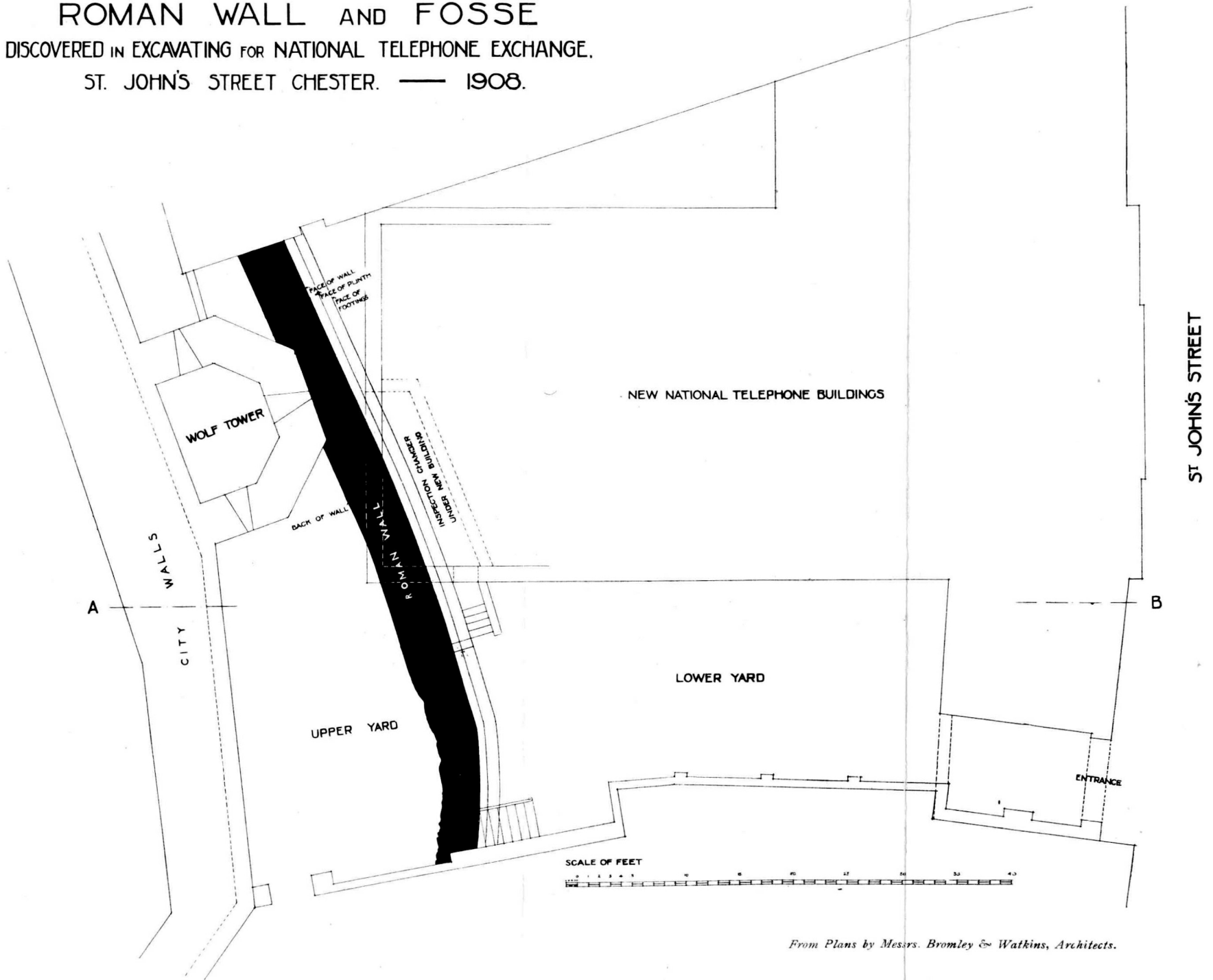


Roman Red-glazed or Samian Ware
(Scale to one half)

R. Nørstedt, del.

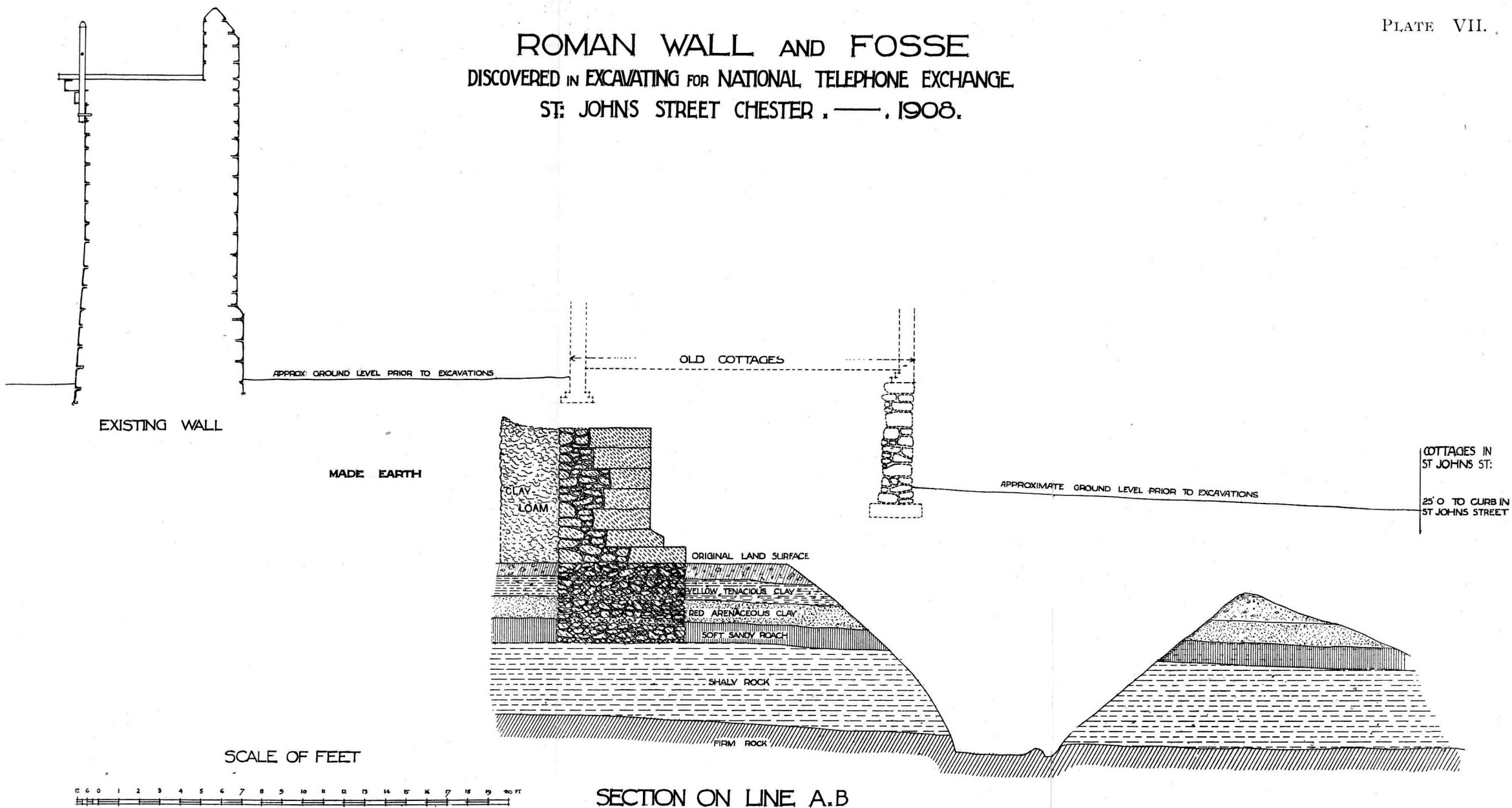
ROMAN WALL AND FOSSE

DISCOVERED IN EXCAVATING FOR NATIONAL TELEPHONE EXCHANGE.
ST. JOHN'S STREET CHESTER. — 1908.



From Plans by Messrs. Bromley & Watkins, Architects.

ROMAN WALL AND FOSSE DISCOVERED IN EXCAVATING FOR NATIONAL TELEPHONE EXCHANGE ST. JOHNS STREET CHESTER. —. 1908.



From Plans by Messrs. Bromley & Watkins, Architects.

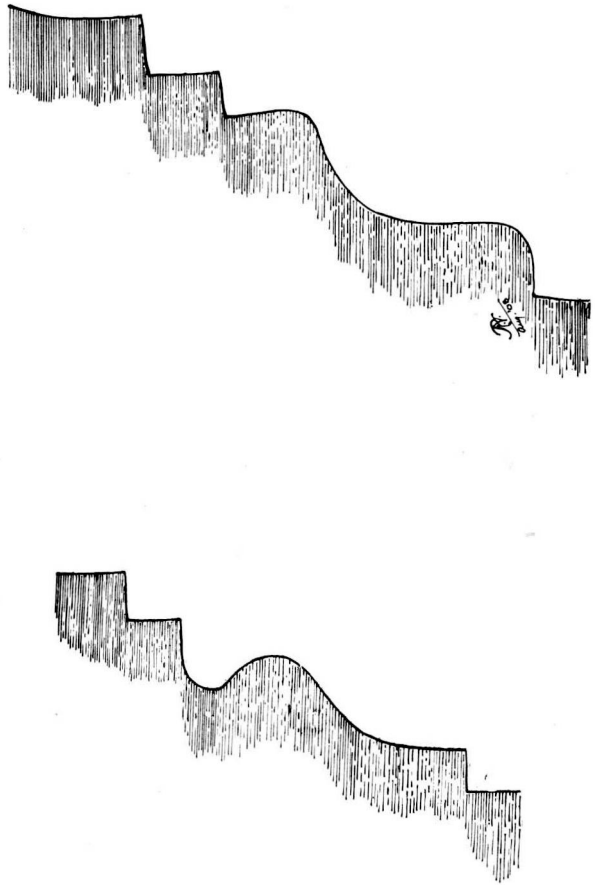
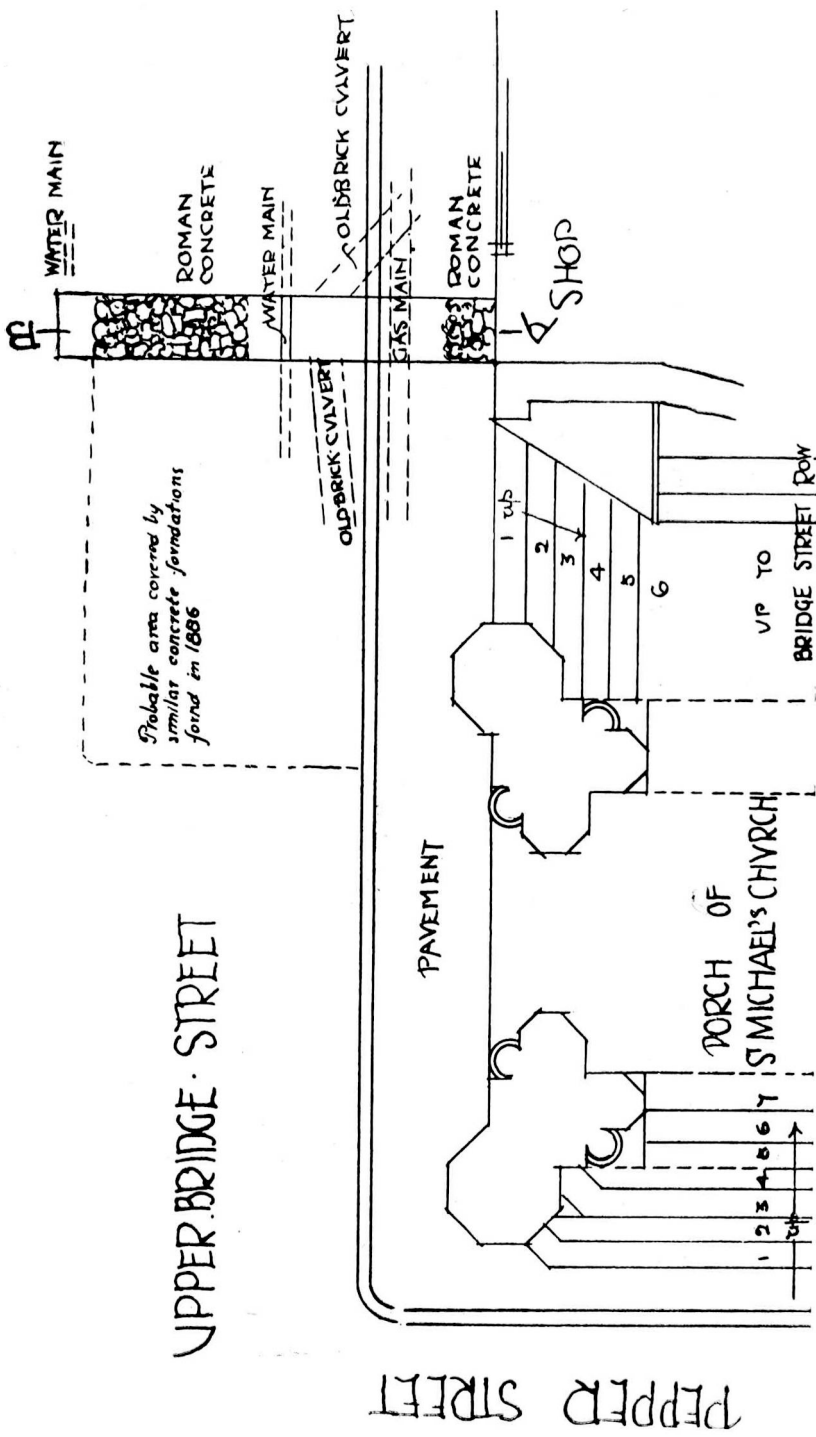


Fig. 7.—Mouldings found in front of the Roman Wall
(Scale to one-third)

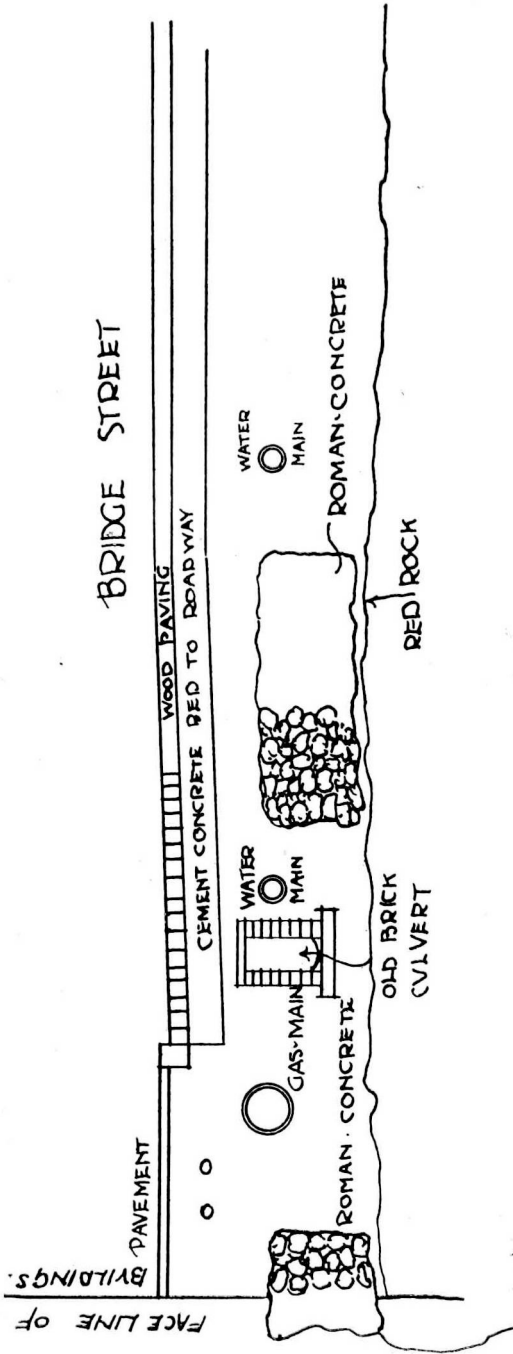
R. Newstead, del.



PLAN TO 1/8" SCALE



P. H. Lockwood, Architect.



A B SECTION TO 1/4" SCALE

P. H. Lockwood, Architect.



Fig. 8.—Palaeolithic Stone Axe—Excavations St. John Street, Chester,
11th August, 1908

(actual size)

