

REMAINS OF LONDON WALL; BUILDINGS OF BEDLAM IN THE BACKGROUND.

From an etching by J. T. Smith, 1812.

PILE STRUCTURES IN THE WALBROOK NEAR
LONDON WALL.

By F. W. READER.

The discovery of remains of ancient pile-dwellings anywhere in this country might, at the present state of our knowledge in such matters, be expected to arouse great public interest, but when such a discovery is made in the very heart of London, at a depth of 20 feet below the present surface, it might reasonably be supposed that such an event would be regarded as one of national importance.

Remains of this nature have, however, recently been disclosed and ruthlessly swept away almost without attracting notice or causing comment of any kind.

It was moreover well known that such remains were to be expected on the site in question, which forms a part of the old bed of the Walbrook near the point where it passed under the city wall. The greater part of the bed of the stream, all along its course through the city, has from time to time been excavated during the last fifty or sixty years, and the peaty deposit with which the channel was filled has everywhere been noticed to contain numerous wooden piles. The true nature and significance of these piles were first recognised by Colonel Lane Fox, afterwards General Pitt-Rivers, who drew attention to them in an important communication to the Anthropological Society as far back as 1866,¹ which has since received greater publicity by Dr. Munro's copious allusions to it in his *Lake Dwellings of Europe*² and *Ancient Scottish Lake Dwellings*.³

The portion of the stream under notice is the northern continuation of that described by General Pitt-Rivers, and occupies the ground between the south-east side of Finsbury Circus and the north side of the street known as London Wall; in the angle which it forms with

¹ *Anthropological Review*, V (1867),
lxxi.

² pp. 460-464.

³ pp. 291-296.

Blomfield Street [with the exception of the corner where East Street joins Blomfield Street, which is occupied by Finsbury House], the whole of this space has recently been cleared for the erection of new buildings, the excavations for the foundations of which were carried down to a depth of about 30 feet.¹ In the summer of 1901 I learned that many objects and a great number of piles had been found there. Some of these latter were said to have been placed with such regularity as to indicate that they had formed a support for buildings.

Although numerous "curiosity collectors" were purchasing the more attractive relics from the workmen, no effort was being made, so far as I could learn, to secure any plan of the position of the piles, or to make any record of the objects associated with them. My attempts to obtain permission to inspect the operations were unsuccessful, and I was informed that all the ancient level had been cleared away. It was therefore with much pleasure that I learned later in the year from my friend Mr. Kennard that a large portion of the deposit still remained unexcavated, and that he had succeeded in obtaining access there at times when no work was in progress. At his kind invitation I gladly joined him and we visited the spot very frequently during last winter. As we only saw the site when no work was proceeding our opportunities were restricted for observing any continuous extent of the filling of the stream, and that which we have been able to record is naturally very imperfect and consists of little more than a series of sections, extended, as far as was possible, by our own exertions with the pick and shovel. During the earlier part of our observations the deposit was rapidly cut back, disclosing a complete section from 18 to 22 feet deep, from the surface of the ground to below the bed of the stream. Each week this presented a different appearance, with, here and there, piles exposed to view. Under these circumstances, the task of recording any arrangement of the piles in plan was of course impossible; our first efforts therefore consisted in observing the nature of the various deposits presented in the sections and digging more or less at haphazard in the face of the mass, confining our

¹ See fig. 4.

attention chiefly to the level occupied by the piles and keeping all relics found in association with them distinct.

At the commencement of the present year sufficient of the deposit had been removed for the requirements of the builders, and a large portion occupying the middle of the stream was reserved for purposes of "filling in." This was removed as required and gradually cut down from the top until the level of the piles was reached. In this way the same portion was sometimes exposed for two or three weeks, and at times gave us a considerable extent of the lower level unencumbered with the huge mass of accumulation above. We were thus enabled to examine some portions of these pile-structures in more detail than has probably been done hitherto. The conditions under which we worked at this later stage, although greatly improved, were far from favourable for acquiring anything approaching a complete record, the work commenced one week being often swept away before our return the next.

Apart from the interest attaching to this locality as a pile-dwelling site, the position of the stream itself and its relation to the city wall, under which it must have run in Roman times at a depth of about 20 feet below the present surface, claim special notice, and these considerations open up many important questions.

Before proceeding to describe the portion of the bed we have examined and the relics it contained, it will be well, perhaps, to explain the position this site occupies with regard to the general course of the stream, to recall some of the references to it by early writers and to enumerate the records of discoveries that have been made in its bed at various times.

THE WALBROOK, MOOR FIELDS, AND CITY DITCH.

The Walbrook was formed by a number of small streams flowing from the north-east of London and meeting in the neighbourhood of Finsbury. The main stream rose in the district now represented by Hoxton, and flowed to the east of Finsbury southwards into the Thames. In earlier times it was a stream of con-

siderable dimensions and probably tidal, but its channel gradually filled with the growth and accumulation of London, its bed became raised and the volume of water reduced, until it eventually dwindled to a mere rivulet, which was covered over and used as a sewer. The general course which it followed seems to have been fairly constant, though in later times it shifted a little to the east of the position of the earlier stream. Nothing now remains of it above ground but its name, which it has bequeathed to the street known as Walbrook, "because," says Stow,¹ "it standeth on the east side of the same brook, by the bank thereof, and the whole ward taketh the name of that street."

It has also left its mark in forming the divisions of the properties of the different city companies which were situated within the city, on its banks. Without the wall the parish boundaries have been largely determined by the line of the streams forming the Walbrook.

A description of the stream and of its later course is given by Stow,² although in his time its course through the city was no longer above ground.

He tells us that it was known as

"The Running Water, so called by William the Conqueror in his said charter,³ which entereth the city, etc. (before there was any ditch), between Bishopgate and the late made postern called Moorgate, entered the wall, and was truly of the wall called Walbrooke, not of Gualo, as some have far fetched; it ran through the city with divers windings from the north towards the south into the river of Thames, and had over the same divers bridges along the streets and lanes through which it passed."

"This water-course, having divers bridges, was afterwards vaulted over with brick, and paved level with the streets and lanes where through it passed; and since that, also houses have been built thereon, so that the course of Walbrooke is now hidden under ground, and thereby hardly known."

"Now from the north to the south this city was of old time divided, not by a large highway or street, as from east to west, but by a fair brook of sweet water, which came from out the north fields through the wall and midst of the city into the river of Thames, and which division is till this day constantly and without charge maintained."

"This water was called, as I have said, Walbrooke not Gallus brook, of a Roman captain slain by Asclepiodatus and thrown therein, as some have fabled, but of running through and from the wall of this

¹ Styrpe's ed. 1720, I, 23.

² *Ib.* I, 23.

³ The Charter to the College of St. Martin-le-Grand.

⁴ Stow's *Survey*, II, 2.

city. The course whereof to prosecute it particularly, was and is from the said wall to St. Margaret's in Lothbury, from thence beneath the lower part of the Grocers' Hall, about the east part of their kitchen, under St. Mildred's Church somewhat west from the said Stocks Market. From thence through Bucklersbury, by one great house built of stone and timber called the Old Barge, because barges out of the River of Thames were rowed up as far into this brook, on the back side of the houses of Walbrook Street, which street taketh name of the said brook, by the west end of St. John's Church upon Walbrooke, under Horseshoe Bridge by the west side of Tallow-chandler's Hall, and of the Skinner's Hall, and so far behind the other houses to Elbow Lane and by a part thereof down Greenwich Lane, into the River of Thames.

"This is the course of the Walbrook, which was of old time bridged over in divers places for passage of horses and men as need required; but since by means of incroachments on the bank thereof, the channel being greatly straightened, and other annoyances done thereunto at length the same by common consent, was arched over with brick and paved with stone, equal with the ground where through it passed, and is now in most places built upon, that no man may by the eye discern it. And therefore the trace thereof is hardly known to the common people."

Maitland says :

"The rivulet or running water denominated Wallbrook, ran through the middle of the city above ground, till about the middle of the fourteenth century, when it was arched over, since which time it has served as a common sewer, wherein, at a depth of sixteen feet, under St. Mildred's Church steeple, runs a great and rapid stream."

This covering over of the stream according to Hughson¹ took place in 1440, when the church of St. Margaret Lothbury was rebuilt.

"At which time Robert Lange, lord mayor, contributed to the vaulting over of the water of Walbrook, running close to the said church."

"The loss of this rivulet was owing to the many bridges covered with houses built over it, which increased to such a degree as to be formed into streets, so that the channel having been used as a common sewer was arched over and totally obscured by those streets."

It seems, however, that only a portion of the stream was covered in 1440, for Stow says :

"For order was taken in the 2 of Edward IV. (1462), that such as had ground on either side of Walbrooke, should vault and pave it over, so far as his ground extended."

From the top of Dowgate, where stood a conduit, an

¹ *History of London*, 1806, III, 51.

open channel existed to the Thames even as late as 1574, as it is recorded by Stow :—¹

“Downgate so called (as may be supposed) of the sudden descending or downgoing of that way from St. John’s Church upon Walbrook unto the River of Thames. Whereby the water in the channel there hath such a swift course that in the year 1574 on the fourth of September, after a strong shower of rain, a lad of the age of eighteen years, minding to have lept over the channel, was taken by the feet and born down with the violence of that narrow stream and carried towards the Thames with such a violent swiftness as no man could rescue or stay him, till he came against a cart-wheel that stood in the watergate, before which time he was drowned and stark dead.”

North of the Wall, the district known as Moorfields and Finsbury remained an open waste land until a comparatively recent period. It is thus described by Stow :—²

“This field of old time was called the More as appeareth by the charter of William the Conqueror to the college of S. Martin, declaring a running water to pass into the said city from the same More.”

“This fen or moor-field, stretching from the wall of the city betwixt Bishopsgate and the postern called Cripplesgate, to Finsbury and to Holy-well continued a waste and unprofitable ground a long time, so that the same was all letten for four marks the year, in the reign of Edward II. ; but in the year 1415, the 3 of Henry V., Thomas Falconer, maior (as I have shewed), caused the wall of the city to be broken toward the said More, and builded the postern called Moregate, for the ease of the citizens to walk that way upon cawseys into the fields, towards Iseldon and Hoxton ; moreover he caused the ditch of the city and other ditches thereabouts, from Sores-ditch to Deepe-ditch by Bethelhem, into the More-ditch to be new cast and cleansed. By means whereof the said fenne or more was greatly drained and dried ; but shortly after, to wit, in 1477, Ralph Joceline maior, for repairing of the wall of the city, caused the said More to be searched for clay and brick to be burnt there, etc., by which means this Field was made worse for a long time.”

The portion of the Walbrook which traversed this part continued its course above ground long after that within the city had been covered in, as is shown on the maps of Braun (1572) and Aggas (1591), where it is to be seen emptying itself into the City Ditch close to the church of All Hallows-on-the-Wall. (Plate II.)

There were several smaller streams which ran into the main stream north of the wall, “five of which are still in existence as sewers,”³ as Sir William Tite tells us.

¹ *Survey*, I, 21.

² *Ib.*, IV, 54.

³ *Cat. of Antiquities*, New Royal Exchange, xxvi.

These were probably made in order to drain this district, which in earlier times was a swamp.

From the earliest historical account, that of Fitz-Stephen in the reign of Henry II., we learn¹ :

“When that vast lake which waters the walls of the city towards the north is hard frozen, the youth in great numbers go and divert themselves on the ice; some taking a small run for an increment of velocity, place their feet at a proper distance and are carried sliding sideways a great way. Others will make a large cake of ice and seating one of their companions upon it, they take hold of his hands and draw him along, when it happens that moving swiftly on so slippery a plain, they all fall headlong. Others there are who are still more expert in their amusement on the ice; they place certain bones, the leg bones of animals, under the soles of their feet, by tying them round their ankles and then taking a pole shod with iron into their hands, they push themselves forward by sticking it against the ice, and are carried on with a velocity equal to the flight of a bird or a bolt discharged from the cross-bow.”

This swamp subsequently became a moor, which was no doubt to a large extent brought about by the defensive works carried out during the years 1211–1213, when the construction of the city ditch, as it was called in later times, took place. In order to provide this with a good supply of fresh water, several of the streams north of the wall appear to have been turned into it. The ditch is said to have been 200 feet wide and in parts deeply dug. In Moorfields, however, no traces of such a ditch have been observable, and it seems probable that when the construction or re-construction of the ditch was undertaken in 1211–1213, the nature of the ground at Moorfields rendered its formation, at that part, difficult and as a defence unnecessary. In later times there is no doubt from the evidence of the maps and from records, that the ditch existed in this neighbourhood, but its boundaries were probably the result of the successive raising of the ground to the north of it rather than of digging.

This would account for the difference remarked by Sir William Tite,² who from observation of the excavations made in his time, says:—

“Eastward of Aldersgate, the ditch was in part an artificial trench, so far as to Little Moorgate, a postern formerly standing near the

¹ *Description of London*, translated by Rev. Pegge, 1772, 50.

² *Catalogue of Antiquities*, New Royal Exchange, xxx.

south end of the present Blomfield Street, and from thence to the Tower it was entirely an excavated channel."

Stow, moreover, in the passage quoted above (p. 140) speaks of the Walbrook entering the city "before there was any ditch," but locates its absence "between Bishopgate and the late made postern called Moorgate." This differs somewhat from the observations of Sir William Tite, who found the ditch "in part an artificial trench" from Aldersgate as far as Little Moorgate, which position marks the extent of the swamp.

As Stow's record rests on tradition, it is easy to understand how by his time the precise locality may have been lost without detracting from the truth of the tradition that formerly no ditch existed in this part.

There is evidence, however, that this ditch was not the first that surrounded the city, but that in Roman times also a ditch formed a feature in the defence of Londinium. Remains of this ditch were discovered in excavating near the site of Aldersgate in 1887, a full account of which is given by Mr. G. E. Fox.¹ It was found cut in the gravel to a depth of 14 feet from the level of the base of the wall, or about 21 feet from the present surface. From the foot of the wall to the edge of the ditch was a space of flat ground 10 feet in width. The total width of the ditch across the top was 74 feet 6 inches and 35 feet at the bottom. Both sides and bottom had a clay puddling 6 inches thick. In one portion of the bottom was a raised mound which, by comparison with a similar find at Silchester, appears to have formed a support for a bridge which crossed the ditch from the gate.

It is most probable that remains of this ditch would have been discovered at Moorfields during the recent excavations, had proper observation been made, as doubtless the accumulation of the marsh above it would have been favourable to its preservation in this part.

Although it seems probable that a great deal of the water flowing from the north was thrown into the City Ditch (1211-1213), it would not appear to have greatly

¹ *Archaeologia*, LII, 615.

reduced the volume of the stream forming the Walbrook which ran through the city. It must have remained a considerable stream until long after the construction of the ditch, and was largely utilized by tanneries and other industries. Extensive remains of tan-pits have been discovered in the neighbourhood of Tokenhouse Yard, while the skimmers have left the name of Budge Row to a street occupied by them on the bank of the Walbrook.

Mr. W. H. Black¹ tells us :—

“The workers and dealers in Leather seem from ancient times to have occupied the northern edge of the city, within the wall; where the Curriers established themselves in the Ward of Cripplegate: and the Tanners, Tawyers and Leathersellers were grouped near the upper part of the Wall-brook.”

The Corporation Records contain many interesting documents relating to these industries. In² *The Ordinances of the Pelterers (Skinners) of London* (1365),

“It is ordained that no one of the said trade shall work together old and new materials of his own, also, that no one working at new werk shall sell or buy old furs, or any manner of old budge,³ as those who do so, are held suspected of mixing old and new together, etc., etc.

“Also it is ordained that all the freemen of the said trade shall dwell in Walbrook, Cornhulle and Bogerowe (Budge Row), and not in foreign streets in the city; that so, the overseers of the trade may be able to oversee them. For if they do not dwell together in the said streets, the overseers cannot duly do their duty or visit them; and then those dwelling elsewhere in foreign streets may make deceits in the said trade, against the Ordinances aforesaid and without any punishment for the same.”

The name Poultry also may be a corruption of “Peltery,” or place of the Pelterers. Stow derives this name from a market for poultry and says⁴ :—

“the poulterers are but lately departed from thence into other streets, as into Grasse Street and the ends of St. Nicholas flesh shambles.”

The poulterers in the time of Edward III. were restricted to Leadenhall and along the wall towards the west of the

¹ *History of the Leathersellers Company*, 71.

² *Memorials of London Life, Thirteenth, Fourteenth, and Fifteenth Centuries*, H. T. Riley, 328.

³ Fur of prepared lambskin or goat-skin.

⁴ *Survey*, III, 30.

church of St. Michael on Cornhill, as appears by the Corporation Records,¹ where it is expressly laid down, "let them be found nowhere else, either going or standing with their poultry for sale, on pain of forfeiture of all such poultry."

As Stow admits that the Poulterers had disappeared from the Poultry at the time he wrote, it seems probable that he assumed their existence here from the resemblance of the name which probably is no more reliable than his derivation of Dowgate, which he renders "Down-gate, so called of the sudden descending or down going of that way." The earlier form of this word was Dougate, which appears to have led to Stow's confusion of Down-gate, but which more probably relates to its position as a water gate, and according to some is derived from the Celtic "*Dwr* (water or river) gate."²

Strict regulations were at first made for keeping the ditch and the course of the Walbrook clear, but these provisions were repeatedly neglected and caused fresh accumulations of water on the moor, and eventually choked up and greatly reduced the stream. The following records selected from Mr. H. T. Riley's³ translations will show how at different times measures had to be taken to secure the cleansing of these channels:—

- p. 23. THE WATERCOURSE OF WALEBROOK. 16 Edward I., A.D. 1288. Letter-Book A, fol. cxxx. (Latin).

It was determined by Ralph de Sandwich, Warden of the City of London, Thomas Cros and Walter Hauteyn, Sheriffs, Gregory de Rokesle, John Fitz-Peter, and other aldermen, that the water-course of Walebrook should be made free from dung and other nuisances, and that the rakes should be put back again upon every tenement extending from the Moor to the Thames.

On Wednesday next after the Feast of St. Peter's Chair (18th January), in the sixteenth year of the reign of King Edward, John de Banquelle, Ralph le Blund, Joice le Akatur, Robert de Basinge (others of the Aldermen), assented to the said enactment.

- p. 25. INQUISITION AS TO THE BRIDGE OF WALBROKE, NEAR BOKERELESBERI. 19 Edward I., A.D. 1291. Letter-Book A, fol. lxxxiv. (Latin).

On Friday the Feast of St. Margaret the Virgin (20th July) in the nineteenth year of the reign of King Edward, in presence of Ralph

¹ *Memorials of London Life*, 300, 359.

² *Archaeologia*, XXXIII, 106.
³ *Memorials of London Life*.

de Sandwich, Warden of the City of London, Thomas Romeyn and William de Leyre, Sheriffs of the same city, and William de Betoyn and Walter Hauteyn, Aldermen, inquisition was made by certain men of the Wards of Walbroke and Cornhulle, what person or persons were bound of right to repair the bridge of Walbroke near Bokerelesberi, and what person or persons have been wont to make the same, how, and in what manner, etc.

Who say upon oath that a certain tenement, formerly belonging to Richard de Walebroke and which Thomas Box now holds; a tenement formerly belonging to John de Tulesan the elder, and which John de Tulesan the younger now holds in the same street; a tenement formerly belonging to Laurence Fitz-Michael, which the Society of Lucca and John le Mazerer now hold; and the tenement of Bokerelesberi, which the heirs of Roger Beynyn now hold, in the same street, are bound to repair the said bridge, and of right ought to make the same, and have been wont in common so to do. And they say that in ancient times, as a mark who ought to make the said bridge, four stones were fixed before the tenements aforesaid, that is to say, before each tenement one stone; which were afterwards removed by Walter Hervy, the then improver of the city; and at that time he caused the said bridge to be repaired at the cost of the tenants of the tenements aforesaid. Therefore, precept was given to the Sheriffs, that they should compel the tenants of the said tenements to repair the bridge aforesaid.

p. 43. INQUISITION AS TO THE LIABILITY TO MAINTAIN TWO BRIDGES IN THE WARD OF BROAD STREET, AND TO FIND THE HINGES OF BISHOPSGATE. 28 Edward I., A.D. 1300. Letter-Book C, fol. xlvi. (Latin).

Inquisition taken before Elias Russel, the then Mayor of London and the aldermen there present, on Friday the morrow of the Translation of St. Thomas the Martyr (7th July) in the twenty-eighth year of the reign of King Edward, son of King Henry, as to the making of a certain bridge now broken, near London Wall, in the Ward of Bradestrade (Broad Street), by Henry Hauteyn of the Ward of Bassieshaw, Adam Manyman of the Ward of Colemanstrete, John Verin of the Ward of Bisshoppisgate, and John de Hertford of the Ward of Bradestrade, and other persons empanelled of the said Wards.

Who say upon their oath, that so often as it may happen that the said bridge shall be broken, the Prior of the Holy Trinity is bound to make it at his own cost; and he has so done time out of mind, because by his charters he has common way there. They say also that the Prior of the New Hospital without Bisshoppisgate ought to make one-half of another bridge, near to the former bridge, and the men who are nearest neighbours to that bridge, the other half. And precept was given to the Sheriffs, that they should distrain the aforesaid Priors and the neighbouring persons to rebuild the said bridges, and to keep them in good repair.

They say also, that the Bishop of London is bound to make the hinges of Bysoppesgate, seeing that from every cart laden with wood,

he has one stick, as it enters the said gate. Therefore directions were given to the Sheriffs, etc.

- p. 43. INQUISITION AS TO THE LIABILITY TO REPAIR THE COVERING OVER THE WATERCOURSE OF WALEBROC. 28 Edward I., A.D. 1300. Letter-Book C, fol. xlvi. (Latin).

Inquisition taken before the Mayor of London, on Wednesday the morrow of the Translation of Saint Benedict (11th July), in the twenty-eighth year, as to what persons are bound to repair the covering over the water-course of Walebroc, over against the wall of the chancel of the church of St. Stephen, Walebroc.

Whereon the jurors empanelled say upon their oath, that the parishoners of the church of Saint Stephen are bound of right to repair the said covering over the water-course of Walebroc. Therefore directions were given to the Sheriffs to distrain the said parishoners to do the building aforesaid.

- p. 477. ORDINANCES AS TO THE REPAIR OF CREPULGATE: THE CITY BARGE: AND THE WATERCOURSE OF WALBROK. 6 Richard II., A.D. 1383. Letter-Book H, fol. clxiv. (French).

Also whereas the watercourse of Wallbrook is stopped up by divers filth and dung thrown therein by persons who have houses along the said course, to the great nuisance and damage of all the city; it is assented to that the aldermen of the Wards of Colemanstret, Bradstret, Chepe, Walbrok, Vintry, and Douegate, through whose wards the said watercourse runs, shall diligently enquire if any person dwelling along the said course has a stable, or other house, whereby dung or other filth may fall into the same; or otherwise throws therein, or causes to be thrown therein, such manner of filth or rubbish, by which the said watercourse is stopped up; and let the mayor and chamberlain know the names of such persons and the number and extent of such offences, the most truthfully that they may: that so, by advice of the mayor and aldermen, and commonalty, punishment may be inflicted upon the offenders who act against this Ordinance, and this nuisance be abated thereby.

But it shall be fully lawful for those persons who have houses on the said watercourse, to have latrines over the course, provided that they do not throw rubbish or other refuse through the same, whereby the passage of the said water may be stopped. And every one who has such latrine or latrines over the same, shall pay yearly to the chamberlain for the easement thereof, and towards cleansing the said course 2s. for each of the same. And the said aldermen are to make enquiry how many latrines there are upon the said course, and to whom they belong, and to certify the said mayor and chamberlain as to the same.

- p. 379. LEASE OF THE MOOR FOR SEVEN YEARS, WITH PROVISION FOR CLEANSING THE WATERCOURSE OF WALLEBROK. 48 Edward III., A.D. 1374. Letter-Book G, fol. cccxviii. (Latin).

This indenture witnesseth, that a lease of the moor, together with charge of the watercourse of Wallebrok, was made by Adam de Bury, mayor, the aldermen, and John de Cantebrigge, chamberlain of the Guildhall of London, unto Thomas atte Ram, brewer, on Wednesday the morrow of St. James the Apostle (25th July), in the forty-eighth year, etc., ; to hold the same from the said Wednesday for seven years then next ensuing, without paying any rent therefor : upon the understanding that the said Thomas shall keep the said moor well and properly and shall have the watercourse of Walbrok cleansed for the whole of the term aforesaid : and shall have the same cleared of dung and other filth thrown or deposited therein, or that may be there placed, during the term aforesaid : he taking for every latrine built upon the said watercourse 12*d.* yearly, during such term, for his trouble, as from of old has been wont to be paid. And if in so cleansing it as aforesaid he shall find ought therein, he shall have for his own all he shall so find in the dung and filth thereof. And the said mayor, aldermen, chamberlain and their successors, do agree that by these presents they will warrant the tenement aforesaid unto the said Thomas, in form aforesaid. In witness whereof, to one part of this indenture the Seal has been set of the Mayoralty of the City, and to the other part the said Thomas has set his seal. Given in the Chamber of the Guildhall of London, the day and year above written.

How the stream passed from the moor through the wall in mediaeval times is not at all clear, but some light is thrown on this matter by the following record of the formation of a sluice in 1415 :—

- p. 614. ORDER MADE FOR THE REBUILDING OF THE LITTLE POSTERN IN THE CITY WALL ; THE LAYING OUT OF THE CITY MOOR ; THE PILING OF THE BANKS OF THE FOSS OF WALBROOKE ; AND THE IMPROVEMENT OF THE WATERCOURSE AT OYSTER-GATE. 3 Henry V., A.D. 1415. Letter-Book I, fol. clii. (Latin).

Because that from default of provision for the proper safety and due management and charge of a certain watery and vacant piece of land, called "the Moor," situate beneath the walls of the city and lying to the north thereof, as also, of a certain common latrine there situate, on the Moor aforesaid : by reason thereof, as well very many cellars and dwelling-houses were overflowed, in divers streets and lanes to the said moor near and adjoining, and many sicknesses and other intolerable maladies arising from the horrible, corrupt and infected atmosphere proceeding from the latrine aforesaid, from time to time were often prevalent : therefore Thos. Fauconer, the mayor, etc.

. . . And as it was there stated that at divers periods, and in the

times of divers mayors, for the public good of the said city, as it was said, the moor aforesaid had been at one time changed into a garden, and at another time into a vacant piece of land, and so repeatedly altered and changed : the said mayor and aldermen, with the sanction of the Common Council aforesaid, being now of opinion that if only the said moor should be allotted and divided into different gardens, as well the common advantage, in the way of rental paid to the Chamber of the said city, would be ensured thereby as easement to the cellars and dwelling-houses aforesaid by reason of the immunity which they so greatly stood in need of from the overflow of the water course before mentioned, did therefore order and determine, as a thing for ever to endure, that the Little Postern, built of old in the wall of the said city, should be pulled down, and made larger on the south side thereof, so soon as it could conveniently be done, for increasing the common advantage, and also the especial honour of the said city, by adding a gate thereto, the same to be shut at night and at all other fitting times. And that upon the moor aforesaid there should be laid out divers gardens, to be let at a proper rent to such persons as should wish to take them, alleys being made therein lengthwise and across ; as more plainly depicted and set forth on a certain sheet of parchment, made by way of pattern for the plans aforesaid and shown to the Common Council and exhibited.

And to the end that the horrible, infected and corrupt atmosphere arising from the latrine aforesaid, for the saving of the human body, as people go return and pass along that way, might be wholly got rid of and excluded therefrom, it was ordered by the said Mayor Aldermen and Common Council that such latrine, together with the entrance to the same, should be removed and that another latrine should be built or made anew, on the other side, within the walls of the said city, and upon the Fosse of Walbrook : it being understood that all laystalls and other kinds of filth whatsoever, usually discharged into the said Foss, so often as it should be necessary to be done, should, by means of the interception of a watergate, called a "schuys," or a "speye," and the flow of the water from the Fosses without the walls of the city, which discharge into the Foss of Walbrooke aforesaid, be carried off and got rid of. And further, by the said mayor, aldermen and Common Council it was ordered and agreed that all inhabitants upon the margin of the Foss of Walbrooke, near to the water of Thames, should pile the banks of the same, and cause it to be piled, or else walled with walls ; taking due care that by the breaking or sinking of such walls, there should be no impediment to the water, so running into the Foss as aforesaid, having its free course and protection until it reaches the Thames.

Mr. Riley suggests that the postern referred to in the foregoing document is the little postern in Cripplegate Ward. "Its site is still remembered under the name of Aldermanbury Postern leading towards Moor Lane." There seems little doubt, I think, that this is an error and that this "Little Postern" on the "Foss of Walbrook" is Little Moorgate, which stood at what is now

the end of Blomfield Street.¹ This, it has now been ascertained, was directly in the line of the original stream, and from the nature of the deposits above the old bed, seems to have been the course maintained by the stream in later times. Should a water-gate or sluice have been formed in the earlier "Little Postern," it would by reason of the raising of the river bed have become much reduced, making it necessary that the postern "should be pulled down and made larger" with the sluice on the higher level. J. E. Price, in the map which accompanies his excellent account of the Walbrook,² has shown the stream passing along the line of Blomfield Street, and falling into the city ditch, along which it is taken towards Moorgate, just before reaching which it again turns and enters the city wall, at which point a mediaeval sluice is placed. What warrant Price had for fixing the sluice here I am unable to discover, it seems possible that he has assumed this, because the sewers have been formed in this manner, the line of which he takes to be the same as that of the stream. Although this in a general way is true, it is quite conceivable that special reasons might have occurred for slightly diverting the line of the sewers at certain parts, from that which the stream had followed. If, however, a sluice did exist here, it is certainly not the one referred to above, for its position is midway between the Little Postern at Cripplegate and Little Moorgate, at which point there is no record of a postern having existed. It seems, therefore, reasonable to suppose that the course of the later stream through the wall was still in the bed of the older river.

The measures taken to cleanse the ditch, and their final neglect, causing it to become filled up, and the further attempts made to improve the moor are thus related by Stow:—

³ "The ditch which partly now remaineth, and compassed the wall of the city, was begun to be made by the Londoners in the year 1211, and finished 1213, the 15th of King John. This ditch being then made of 200 feet broad, caused no small hindrance to the canons of the

¹ *Catalogue of Antiquities*, Royal Exchange, Sir Wm. Tite, p. xxxi.

² *Roman Pavement at Bucklersbury*.

³ *Survey of London*, I, 11.

Holy Trinity, whose church stood near Ealdgate; for that the said ditch passed through their ground from the Tower unto Bishopsgate.

¹“This ditch, being originally made for the defence of the city, was also a long time together carefully cleansed and maintained, as need required: but now of late neglected and forced either to a very narrow, and the same a filthy channel, or altogether stopped up for gardens planted and houses built thereon: even to the very wall, and in many places upon both ditch and wall, houses are built; to what danger of the city, I leave to wiser consideration, and can but wish that reformation might be had.

“In the year of Christ 1354, the 28th of Edward III., the ditch of this city flowing over the bank into the Tower ditch, the king commanded the said ditch of the city to be cleansed, and so ordered, that the overflowing thereof should not force any filth into the Tower ditch.

“Anno 1379, John Philpot, maior of London, caused this ditch to be cleansed, and every householder to pay five pence, which was for a day's work towards the charges thereof. Richard II. in the 10th of his reign granted a toll to be taken of wares sold by water or by land, for ten years, towards repairing of the wall and cleansing of the ditch.

“Thomas Falconer, maior, 1414, caused the ditch to be cleansed.

“Ralph Joceline, maior, 1477, caused the whole ditch to be cast and cleansed, and so from time to time it was cleansed and otherwise reformed. Namely, in 1519, the 10th of Henry VIII., for cleansing and scowering the common ditch between Ealdgate and the postern next the Tower ditch. The chief ditcher had by the day seven pence, the second ditcher six pence, the other ditchers five pence, and every vagabond (for so were they then termed) one penny the day, meat and drink, at the charges of the city. Sum £95 3s. 4d.

“In my remembrance also the same was cleansed, namely the Moore ditch, when Sir William Hollies was maior, in the year 1540, and not long before, from the Tower of London to Ealgate.

“It was again cleansed in the year 1549, Henry Amcotes being maior, at the charges of the companies. And again, 1569, the 11th of Queen Elizabeth, for cleansing the same ditch between Ealdgate and the Postern, and making a new sewer, and wharf of timber, from the head of the postern into the town ditch £814 15s. 8d. Before the which time the said ditch lay open, without either wall or pall, having therein great store of very good fish, of divers sorts, as many men yet living, who have taken and tasted them can well witness. But now no such matter, the charge of cleansing is spared, and great profit made by letting out the banks, with the spoil of the whole ditch.

“I am not ignorant of two fifteens granted by a Common Council in the year 1595, for the reformation of this ditch, and that a small portion thereof, to wit between Bishopsgate and the Postern called Mooregate was cleansed and made somewhat broader than it was before; but filling again very fast, by reason of over-raising the ground near adjoining, therefore never the better: and I will so leave it for I cannot help it.

²“In the year also 1511 the third of Henry VIII., Roger Achely,

¹ *Survey of London*, I, 12.

² *Ibid.*, I, 17.

maior, caused dikes and bridges to be made, and the ground to be levelled and made more commodious for passage. Since which time the same hath been heightened so much, that the dikes and bridges are covered: and it seemeth to me that if it be made level with the battlements of the City Wall, yet will it be little the drier, such is the moorish nature of that ground."

To which Strype adds :

"Thus it was in Mr. Stow's time: but we see what an alteration time, pains and expense have made for the better. For these fields before an unhealthful place, in Sir Leonard Halliday's maioralty, were turned into pleasant walks, set with trees for shade and ornament, compassed with brick walls, made convenient with vaults under ground for conveyance of the water, which stood the city in £5,000 or thereabouts.

¹"For the walks themselves, and the continual care of the city to have them in that comley and worthy manner maintained, I am certainly persuaded that our thankfulness to God being first truly performed, they are no mean cause of preserving health and wholesome air to the city: and such an eternal honour thereto as time shall not be able to deface."

Moorfields was drained in 1527, but remained a barren waste, traversed with open sewers, and was a depository for the rubbish of the city long after the town ditch had become filled up. It was not until the time of James I. (1607) that any great improvement seems to have been effected, when it was laid out in pleasant walks and planted with trees.

Howes, writing in 1631, says,²

"And lastly whereof there is a more generall and particular notice taken by all persons, resorting and residing in London, the new and pleasant walkes on the north side of the city, anciently called Morefield, which field (untill the third yeere of King James) was a most noysome and offensive place, being a generall laystall, a rotten morish ground, whereof it first tooke the name. This field for many yeares was environed and crossed with deep stinking ditches and noysome common shewers, and was of former times held impossible to be reformed, especially to bee reduced to any part of that fayre, sweet and pleasant condition, as now it is. And likewise the two other fieldes adjoining, which untill the late time aforesayed, were infectious and very grievous unto the City and all passengers, who by all means endeavoured to shun those fieldes, being loathsome both to sight and sent; yet nevertheless upon the good opportunitie of sweete peace, whereof these three fields will ever remaine a perfect testimony, the first of which viz., that fayre square, next the City wall, was greatly furthered by Sir Leonard Holliday, in the time of his Maioralty, and through the great paynes and industry of Master

¹ *Surrey of London*, III, 70.

² *Annales or a Generall Chronicle of England*, 1621.

Nicholas Seare, reduced from the former vile condition, unto most faire and royall walkes as now they are, which worke whilst it was in doing, being very difficult, the people spake very bitterly and rudelie against these two worthy men, and their good endeavours therein, and in derision sayed it is a holiday worke. All which they patiently endured, and persisted, but when the multitude saw this worke brought unto desired effect, then their unconstant mindes changed, and applauded the effect."

These fields continued to serve London as a recreation ground. Many interesting references and literary extracts relating to the later history of Moorfields have been collected by Peter Cunningham¹ showing how it was used as a drying ground by laundresses and bleachers, was a resort of cudgel-players and wrestlers, and a muster ground for the trained bands of the city.

In 1666, after the great fire, temporary buildings and tents were erected on Moorfields, to shelter the homeless inhabitants of London until their houses were rebuilt.

From this time this site commenced to be built upon, as is recorded by Pepys :

"1st April 1667. Into Moorfields, and I did find houses built two stories high, and like to stand ; and must become a place of great trade till the city be built ; and the street is already paved as London streets used to be."

In 1657 Bethlehem Hospital was removed from Bishopsgate and built on the southern side of Moorfields, adjoining the city wall, while the ground now occupied by Finsbury Square, and the lower portion immediately in front of Bethlehem remained as a pleasure ground, planted with trees and laid out in walks, as can be seen by the map of Ogilby and Morgan (1677). Two open ditches are also shown on this map, which become covered on reaching the Quarters. These are directly over the course of the Walbrook and probably represent the last remains of that stream above ground.

As an instance of the extensive measures that had to be taken to level the Moor, even as late as the eighteenth century, Maitland² tells us :

"The Quarters, or lower Moorfields, was raised anew in the years 1730-31-32 with rubbish and street dirt about the height of 3 feet, and being almost brought to a level with the middle field, was beautifully inrailed and planted with elm trees."

¹ *Handbook of London*, 1850, 344.

² *History of London*, 1739, 506.

Finsbury Square was built in 1789, and in 1814 Bethlehem Hospital was pulled down and removed to its present position in South London. The London Institution and Finsbury Circus were built in 1815.

A row of shops was erected in London Wall about this time, and Finsbury Chambers were built on the angle formed by Blomfield Street. These last developments can be best seen by reference to Horwood's map (1799) (Pl. III) and the various maps of more recent date.

THE ROMAN WALBROOK AND FORMER DISCOVERIES IN ITS BED.

All that we know of the stream in Roman times is from the observations that have been made of the deep excavations that have occurred at various times in its bed. These records are detached, scattered and imperfect, but by bringing them together they serve to throw considerable light on the nature of the stream during its earlier existence. As probably no portion of its bed remains unexcavated south of Broad Street Railway Station (unless it be, perhaps, some small portions under the old houses in the lower part of Copthall Avenue, which are the remains of what was formerly Little Bell Alley) no excuse may be needed for endeavouring to collect the evidence at this time.

The course of the Roman "Walbrook" seems to have been generally the same as that it followed in mediæval times and which has already been described; the later stream, much reduced in volume, keeping in the older bed though at a higher level, and having worked for the most part to its east or south-east bank. It is interesting to note that the present river Lea, which runs in an almost parallel direction into the Thames, occupies a similar position with regard to its older bed. Mr. T. V. Holmes¹ says:

"As regards the Lea, we find that from its junction with the Stort downwards it once flowed one, two, or even three miles west of its present channel, while it never ran, on the whole, in its earlier days much further eastward than it now does."

In early Roman times the Walbrook was a stream of considerable width, at least in that portion of it which

¹ *Essex Naturalist*, Geology of the Lea Valley, VIII, 200.

ran through the City and Moorfields. The records of its measurement and extent that have been made, although not plentiful, are sufficient to enable us to map out its course approximately and show its channel to have been nearly 300 feet broad at its mouth, where it joined the Thames, narrowing to about 120 feet at Moorfields. Beyond this point no observations appear to have been recorded. It appears to have been a shallow stream running over the gravel which caps the London clay, without any well defined banks, these, where they have been noticed, being only 3 or 4 feet high. Its bed has been found at a depth of about 20 feet in the neighbourhood of Moorfields, and running to more than 30 feet nearer its outfall. Its great width may probably have been owing to its being affected by the tides, though the evidence of this does not seem to be conclusive. Concerning this point, General Pitt-Rivers remarks¹ :

“With regard to the probability of this part of London having been a marsh at that time, it appears, by reference to the city sewers office, that the centre of the London Wall Street is 31.69 feet above the mean high water mark at London Bridge ; taking the average level of the gravel in the excavation at 19½ feet below this, the bottom of the peat would be at 12 feet above high water mark. The extreme rise of the spring tide above mean high water mark during the year is 7 feet, thus leaving a margin of 5 feet between the bottom of the peat and the highest spring tide water mark, as at present existing. Considering, however, the great probability of the river having run at a higher level in Roman times, it appears not unlikely that this spot may then either have been under water or exposed to inundations.”

As, however, the lowest point in the portion alluded to by the General was 22 feet, this margin of 5 feet would be still more reduced, and from this part to the Bank there was a further fall of 8 or 10 feet, so that even under conditions similar to those at present existing, there seems little reason to doubt that the tides would have at least washed the lower portion of its course.

In the river mud, covering its base, and even resting on the gravel, Roman objects have been found ; there is, moreover, an entire absence of objects of an earlier period. It seems, therefore, certain that it was a river of considerable activity, still cutting down its base, or at least

¹ *Anthropological Review*, V (1867).

For further notice regarding the tides of the Thames in early Roman times see :—*Arch. Jour.* XLII, 269, and *Proc. Geol. Assoc.* II, 224.

had not commenced to deposit its bed until the period of the Roman occupation. In the valley of the Thames above London, as at Hammersmith and Kew,¹ and in the bed of the Lea at Tottenham,² relics of pre-Roman date have occurred associated with remains of pile structures, so that if any earlier settlement existed on the Walbrook, the evidence of this must have been swept away before the deposition had commenced.

In that portion of the stream on either side of the London Wall Street, where the entire filling is about 20 feet in depth, Roman objects occur from the bottom to a height of about 9 feet, which shows that the deposition which commenced in Roman times proceeded much more rapidly than during subsequent periods. It also appears that a large reduction in the volume of the stream took place during Roman times and that the inhabitants of London, who were thickly clustered on both its banks, embanked the sides, narrowing its bed, over which they built houses. Several tessellated pavements have been found resting on piles driven into the sides of the stream at several points along its course.

There is evidence that the rainfall in Britain was greater than it afterwards became during the domination of the Romans. The great work we know to have been carried out by them of clearing the forests, draining, and opening up the land no doubt largely contributed to bring about this result. In the Romano-British villages examined by General Pitt-Rivers in Wiltshire³ it was found that when first constructed they were surrounded by and intersected with ditches, forming an elaborate system of drainage as if to carry off torrential flood rains. At a later time these ditches became filled up, and in some cases banks were raised over them, showing that such precautions were no longer necessary. The ancient wells also of the same locality stood at a much higher level than do those at the present time.

One of the earliest records of the older stream being reached is by Maitland⁴:

¹ *International Congress of Pre-historic Archaeology*. Trans. of the Third Session, 1868, 271.

² *Trans. of the Essex Field Club*, III, 6.

³ *Excavations in Cranborne Chase*, I, 27; II, 56; III, 3.

⁴ *History of London*, 1739, 507.

“Digging a foundation for the present Bank of England in Threadneedle Street, 1732, they brought up by an augre, oyster shells and made earth at the depth of 30 feet, but wanting an additional length of borer could go no deeper.”

This, he argues, corroborates the tradition that barges anciently came from the river Thames up Walbrook as far as Bucklersbury. Timbs¹ goes further and says :

“The brook was navigable not merely to Bucklersbury but as far as Coleman Street, where a Roman boat hook was found.”

Without wishing to deny the probability of the stream being navigable thus far in early times, the hook referred to can hardly be considered as evidence of this, as it was found at the bottom of a well on the side of the stream, and with it was a bucket handle.² A similar find was made at Preston,³ and the reason of the association of these objects with a well is obvious.

Sir William Tite⁴ says :

“That the river was navigable up to the city wall on the north is said to have been confirmed by the finding of a keel and some other parts of a boat, afterwards carried away with the rubbish, in digging the foundations of a house at the south-east corner of Moorgate Street. But whether such a discovery were really made or not, the excavations referred to appear at least to remove all the improbability of the tradition that ‘when the Wallbrook did lie open barges were rowed out of the Thames or towed up to Barge yard.’”

Gough records⁵ :

“In 1774 was laid in Walbrook a new sewer, a perfect cylinder of three feet diameter, comprised of bricks set in terrace. In digging between Thames St. and Elbow Lane 20 ft. below the surface and 6 feet below the site of the pavement at the Fire of London, they found the trunk of an oak 25 feet long, the bark perished, the sides unhewn and no root: it was firm and black, without appearance of fire. In the part of the sewer near Budge Row they found many piles 3 or 4 feet long pointed and fixed in the ground 20 feet below the present surface and a piece of oak timber 15 by 19 inches in diameter laid on the piles.”

Much of our knowledge of the bed of the Walbrook of Roman times has been gathered for us by Roach-Smith, whose records of the various portions excavated in his time, though they fail in many ways to satisfy our present requirements in observations of such remains, are never-

¹ *Curiosities of London*, 1855, 650.

² *Archæologia*, XXVII, 143.

³ *Ibid.*

⁴ *Catalogue of Antiquities*, New Royal Exchange, xxvii.

⁵ Camden's *Britannia*, 1806, II, 92.



1. By Robert Norden and Philip Lea, 1690.

TWO MAPS OF



theless of great value, and the more to be esteemed when one remembers that he lived before the days of scientific archaeology. Roach-Smith saw the opening up of a large extent of the Roman level of London, and but for his untiring efforts, our knowledge of what was then revealed would have been small indeed, the authorities and the public being then as equally indifferent to the value of such discoveries as they are at the present time. In his *Illustrations of Roman London* and various papers in *Archæologia* many references to the Walbrook occur. Evidences of Roman buildings are recorded on both banks of the portion of the stream within the city, and of the bed itself he says :

¹ "As the excavations approached Princes Street (which bounds the Bank of England on the west) the soil, denominated by those familiar with the London strata, Roman, descended to a much greater depth than either at East Cheap, at Newgate Street or at the London Wall near Finsbury. From the level of the present street I should say that 30 feet would scarcely limit its depth, and the extent may be pronounced equal to the length of the west side of the Bank. Here it assumed also a different appearance, being much more moist, highly impregnated with animal and vegetable matter, and almost of an inky blackness in colour. It is worthy of note, that the same character is applicable to the soil throughout the line of excavation from Princes Street to the London Wall at Finsbury, though nowhere did I observe it extend to such a depth as at the former place. Throughout the same line also were at intervals noticed a vast and almost continuous number of wooden piles, which in Princes Street were particularly frequent, and where also they descended much deeper. The nature of the ground and the quantity of these piles tend to strengthen the probability of a channel having existed in this direction, draining off the water from the adjoining marshes, and that too (from the numerous Roman remains accompanying these indications) at a very remote period.

"The Roman remains found by the labourers near the course of the above stream in Princes Street, and in the vicinity of the Bank of England, are of a more interesting nature and of a more varied description than hitherto have been met with.²

Some of these objects are described in detail in the paper referred to.

"The excavations having advanced to Lothbury, the first object that struck my attention was the remnant of a tessellated pavement opposite Founder's Court. Nearer the Church of St. Margaret, at about ten or twelve feet deep, the workmen met with a vast number of iron instruments, such as chisels, crow-bars, hammers, etc., all in a very corroded state. Descending still deeper beyond the church, and

¹ *Archæologia*, XXVII, 142.

² *Ibid.*, XXVII, 143.

at the east corner of the Bank, the usual vestiges denoting Roman occupancy were found in abundance, and include a leathern sandal well preserved and thickly studded with nails on the sole, specimens of red and black pottery, numerous middle-brass coins of Domitian and one of Antoninus Pius, reverse 'BRITANNIA.' Wooden piles similar to those before-mentioned in Prince's Street were again encountered and combined to indicate the existence of embankments of a water course at a very remote period."¹

"As the works proceeded from Lothbury to London Wall, various objects of interest were from time to time procured, such as brass coins of Agrippa, Antonia, Claudius and Vespasian, Trajan in large brass."²

"But the most important discovery in the line of excavation from Lothbury to the Wall, was made on the Coleman Street side, near the public house called the *Swan's Nest*, where was laid open a pit or well containing a store of earthen vessels of various patterns and capacities."³

A detailed description of this well is given, and among the objects mentioned are "two iron implements resembling a boat hook and a bucket handle," and a small brass coin of Allectus.

"In London Wall opposite Finsbury Chambers, at a depth of 19 feet, what appeared to have been a subterranean aqueduct was laid open. It was found to run towards Finsbury, under the houses of the Circus, about 20 feet. At the termination were five iron bars fastened perpendicularly into the masonry, apparently to prevent the weeds from choking the watercourse. At the opening of this work towards the city was an arch, 3 feet 6 inches high, from the crown to the springing wall, and 3 feet 3 inches wide, composed of fifty tiles. The spandrels were filled in with ragstone to afford strength to the work. The arch was not worked on a centre but corbelled over by hand, the keystone being half a tile and cement. This aqueduct took a southern course for about 60 yards, where it terminated. The entrance was evidently above ground and open to the air, as it was moss-grown. It contained many urns of black ware, a gold ring set with a garnet on which is an engraving of a horse running at full speed, in the best style of workmanship. The neighbourhood was rich in Roman remains, among which were knives, scissors, drinking cups, brass rings, Samian pottery and coins of Vespasian, Trajan, Pius, Aurelius, and the Faustinae.

"The course of the sewerage up Bloomfield Street was marked by the well known features of the locality, being boggy and marshy. It may be mentioned that an immense number of human skulls were found throughout this street.

"Along the line of London Wall at Finsbury were a number of urns and an inscription to Grata the daughter of Dagobitus by her husband Solinus."⁵

¹ *Archaeologia*, XXVII, 147.

² *Ibid.*, l.c.

³ *Ibid.*, XXVII, 148.

⁴ *Ibid.*, XXIX, 152, Pl. XVII,

Fig. 7.

⁵ *Ibid.*, XXIX, 147.

The neighbourhood of the lower part of the stream, near its outfall into the Thames, has furnished remarkable remains of buildings which show that this district was thickly inhabited. In Bush Lane,¹ as far as Cannon Street on the east bank, and in Cloak Lane² on the west. Roach Smith records that an abundance of fresco-painting, portions of tessellated pavements, tiles, etc., were found. Many walls were encountered during the excavations; one opposite Scot's Yard is mentioned as being of the extraordinary thickness of 20 feet. This wall Roach Smith suggests may have formed the northern boundary of earlier London.

Sir William Tite, who has also contributed many valuable observations on the remains of Roman London, has given us a most excellent description of the Walbrook.³ He says :

“Recent excavations have shown that, though short, it was really an important channel, fed by several rills, which all met on the north side of the city ditch in Moorfields, five of which are still in existence as sewers.”

These smaller streams referred to have probably no connection with the stream of the Roman period, but were formed in later mediaeval times to drain the marsh. After tracing the course of the stream (mediaeval), by means of the boundaries of the properties of the City Companies, Sir William Tite continues :

“and with respect to the width of it, the sewerage excavations in the streets called Tower Royal and Little St. Thomas Apostle, and also in Cloak Lane, discovered the channel of the river to be 248 feet wide, filled with made earth and mud, placed in horizontal layers, and containing a quantity of black timber of small scantling. The digging varied from 18 feet 9 inches to 15 feet 6 inches in depth, but the bottom of the Wall brook was, of course, never reached in those parts, as even in Princes Street it is upwards of 30 feet below the present surface.

“Eastwards of Carpenters' Hall, a mass of rubble masonry, of about 12 feet in thickness, was cut through; and in the centre was found a culvert, or Roman sewer, in which were discovered three iron bars in perfect preservation, enclosing a human skeleton, the skull of a dog, and the stem of a stag's horn, together with a silver coin of Antoninus and a copper coin of Faustina. Beyond this point the crown of the culvert had been broken in, and a fragment of a rudely wrought column had fallen through the breach. As the ancient sewer passed under houses no further examination could be made in this direction,

¹ *Archaeologia*, XXIX, 156.

² *Collectanea Antiqua*, I, 139.

³ *Catalogue of Antiquities*, New Royal Exchange, 1848, xxvi.

but on the south side it was not only found to be perfect, but even the mouth of it was discovered under a house at the north-east corner of Carpenters' Buildings. The sewer was constructed of small thin tiles, cemented together by very thick joints of red mortar, made of pounded tile, and having a large pebble inserted in the centre of each. From the top of the sewer to the opposite bank of a ditch into which it discharged itself were placed several pieces of timber scantling in a sloping direction, and a considerable quantity of long moss, undecayed and still retaining a greenish colour, was taken from between them. The ditch receiving the contents of the sewer was made on the south side of the remains of a strong work like part of a fortification, about the site of Little Moorgate or the entrance of Bloomfield Street. As the depth from the present surface to the bottom of the sewer was 18 feet 4 inches, and the open ditch of the fortress was still deeper, it is evident that at the time when they were constructed the adjacent ground was dry and substantial, for the later accumulation of soil was so soft that at one part the bricks could scarcely be laid.¹

The next notice of the ancient Walbrook is the very valuable contribution of General Pitt-Rivers in 1866 already referred to.² The great importance attaching to these observations consists in the detail and accuracy with which the filling of the stream has been recorded, and in the fact that General Pitt-Rivers then first pointed out that the piles which occurred there appeared to have formed the foundations of buildings. As the ground recently examined by Mr. Kennard and myself forms the continuation of that described by General Pitt-Rivers, his portion being south of the Wall, ours lying directly to the north of it—and while many of the conditions are identical, there are some features which show a striking difference—it will be necessary to refer somewhat fully to the account given by the General.

Although a sketch plan of the site of these discoveries accompanies the record, the exact spot is not shown by a map, but it appears from the description to be that occupied until recently by the wool-warehouse of Messrs. Gooch and Cousins, on the south side of the street called London Wall, opposite Circus Place, and which has been demolished during the last few weeks. There is also some confusion of feet and yards in the measurements given from the city wall, which renders it difficult to locate the site exactly. He describes the excavation as of an irregular oblong form, 61 yards in length, running north and south, and 23 yards wide.

¹ *Catalogue of Antiquities*, xxxi.

² *Anthropological Review*, V (1867), lxxi.

A section of the soil consists of:—

1. Gravel similar to Thames ballast at a depth of 17 feet towards the north, inclining to 22 feet towards the south end.
2. Above this peat of unequal thickness, varying from 7 to 9 feet.
3. Modern remains of London earth composed of the accumulated rubbish of the city.

The description of the piles and the objects found is as follows :

“When I first saw the place about two cartloads of bones, nearly all broken and black from having laid in the peat, were heaped up in readiness to be carted away, and I was informed that several cartloads had already been taken to the bone-factory.”

A selection of these bones was submitted to Professor Owen, who identified them as: horse, red-deer, wild boar, goat, dog, *Bos longifrons* and the roebuck.

“The horns of the roebuck, I afterwards ascertained, were all found at a higher level. These, and also the horse and goat, entered the superficial earth, in which glazed pottery was also found; but the remainder, including the red deer, wild boar, and *Bos longifrons*, appeared, so far as my observations enabled me to judge, to be confined to the peat. All the bones retain their animal matter. No remains of any kind have, to my knowledge, been found in the sub-adjacent gravel.

“Upon looking over the ground, my attention was at once attracted by a number of piles, the decayed tops of which appeared above the unexcavated portions of the peat, dotted here and there over the whole of the space cleared. I noted down the positions of all that were above ground at the time; and as the excavations continued during the last two months, I have marked from time to time the positions of all the others as they became exposed to view; the result is shown in the accompanying sketch-plan.”

This is reproduced here (fig. 1).

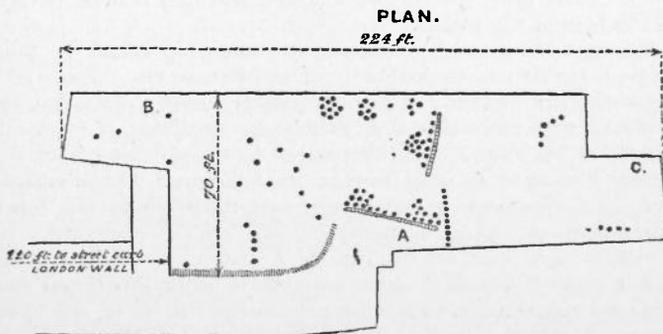


FIG. 1.—PLAN OF PILE STRUCTURES NOTED BY GEN. PITT-RIVERS IN 1866.

“Commencing on the south, a row of them ran north and south; on the west side, to the right of these, a curved row, as if forming part of a ring. Higher up and running obliquely across the ground was a row of piles, having a plank about an inch and a half thick and a foot broad placed along the south face, as if binding the piles together. To the left of these another row of piles ran east and west; to the north-east again were several circular clusters of piles; these were not in rings, but grouped in clusters, and the piles were from 8 to 16 inches apart. To the left of this another row of piles and a plank 2 inches thick ran north and south. There were two other rows north of this and several detached piles, but no doubt several towards the north end had been removed before I arrived.

“The piles averaged 6 to 8 inches square; others of smaller size measured 4 inches by 3, and one or two were as much as a foot square. They appeared to be roughly cut, as if with an axe, and pointed square; there was no trace of iron shoeing on any of them, nor was there any appearance of metal fastenings in the planks; they may have been tied to the piles, but if so the binding material had decayed. *Note.*—This applies chiefly to the south side; towards the north I subsequently found a plank with several Roman nails in it, and the number of loose nails found in the soil above it showed that they must probably have belonged to some wooden superstructure which had perished.

“The planks averaged from 1 to 2 inches thick. The points of the piles were inserted from 1 to 2 feet in the gravel, and were for the most part well preserved; but all the tops had rotted off at about 2 feet above the gravel, which I conclude must have been the surface of the ground, or of the water, at the time those structures were in existence.”

“Owing no doubt to similar causes I was informed by the workmen that no superstructure of any kind was found here. A few Roman tiles from a foot to 16 inches square and 1 inch thick were interspersed amongst the piles, but not in sufficient numbers to lead to the inference that the piles were surmounted by any platform of those materials. Some of them had marks of fire on them. I only found two Roman bricks during the two months that I watched the excavations; and I therefore conclude that the superstructure, if any, must have been of wood or some other perishable material and that it must have rotted with the tops of the piles.”

“Amongst the articles of human workmanship found in the peat, the vast majority are undoubtedly of the Roman era. Amongst them are quantities of broken red Samian pottery, mostly plain, but some of it depicting men and animals in relief; one specimen is stamped with the name of Macrinus. All this pottery, in the opinion of Mr. Franks, to whom I showed it, is of foreign manufacture. Other samples are of the kind supposed to have been manufactured in the Upchurch Marshes in Kent, and upon the site of St. Paul's Churchyard. Bronze and copper pins, iron knives, iron and bronze stylus, tweezers, iron shears, a piece of polished metal mirror, so bright that you may see your face in it (this Dr. Percy has pronounced to be of iron pyrites), white sulphuret of iron without alloy, an iron double-edged hatchet, an iron implement, apparently for dressing leather, a piece of a bronze

vessel, and other bronze and iron implements, which, thanks to the preserving properties of the peat, are all in excellent preservation. Amongst these were also a quantity of leather soles or sandals, some apparently much worn, and others, being thickly studded with hob-nails, may be recognized as the caliga of the Roman legions; also a piece of a tile with the letters P. P. R. B. R. stamped upon it. The coins found are those of Nerva, Vespasian, Trajan, Adrian, and Antoninus Pius.

"It is very remarkable that these Roman remains are interspersed at different levels from top to bottom throughout the peat, which, as I have already said, is from 7 to 9 feet thick, and, in the opinion of all competent judges who have seen it, is no doubt of natural growth. This, as regards the heavier articles of bronze and iron, might be accounted for by supposing that they had sunk to the bottom of the soft peat, but the lighter articles, such as fragments of pottery, shoe soles, and kitchen-middens were obviously deposited upon the surface at separate periods, with intervals of peat between, showing that it must have grown over the lower deposits before it received those lying above, and proving also that the ground must have been occupied during the whole time that the peat was in process of formation."

Three sections are given at the points A, B, and C on the plan, on which the position of the piles and the kitchen-middens are shown, the depth of the soil at these points being 17, 19, and 21 feet respectively.

A full description is given of these sections, in which occurs the following regarding Section A :

"At a foot and a half above the gravel in the peat is a layer of oyster and mussel shells about a foot thick, with a filtration of carbonate of lime permeating through the mass. In this kitchen-midden, Roman pottery and a Roman caliga were found. Close by, the point of a pile was found upright in the peat; it had been driven in in such a manner that the point descends to the level of the kitchen-midden and no further. Now as a pile, in order to obtain a holding, must have been driven at least 2 feet in the ground, it is evident the peat must have grown at least 1 foot above the summit of the kitchen-midden before this pile was driven in."

After giving full details of each section the author continues :

"Lastly, the soles of shoes and Roman pottery of the same kind as that found lower down have been taken out at the very top of the peat, so that the history of its growth may be read by the sections as follows :

1. Oak piles driven into the gravel, the tops of which rotted off at the surface before the peat had grown more than 2 or 3 feet.
2. A kitchen-midden deposited on peat a foot and a half thick during the Roman period. This may or may not have been contemporaneous with the first piles.

3. A growth of peat of 1 or 2 feet above this kitchen-midden, and other piles then driven in.
4. A kitchen-midden with *Bos longifrons* and Roman pottery at $3\frac{1}{2}$ feet.
5. Another growth of peat and another kitchen-midden at 6 feet. And lastly, Roman remains at the very top. Trenches were also dug for the foundation in places where the gravel dipped as low as 22 feet from the surface, and still Roman pottery and other Roman remains were found everywhere in the peat.

“It is certainly difficult, if not impossible, to reconcile this enormous rise of 7 to 9 feet of peat during the four centuries of the Roman occupation with anything that has hitherto been conjectured respecting the growth of peat on the continent. Sir Charles Lyell, quoting Mons. Boucher de Perthes, gives the rate of increase at 3 centimetres in a century—this calculation would give little more than 4 inches for the period in question. It is true that he expressly states his belief that the increase is more rapid than this, and he moreover allows a large margin for the accelerated growth of loose spongy peat upon the surface; it would also appear probable that in the damp climate of England the peat would grow much more rapidly than on the continent.

“By information which I have received from the builder’s foreman and others, it appears that throughout the whole tract of ground between this and the Thames similar remains of peat, piles, bones, and Roman pottery have been found.

“At the new Auction Mart, north of the Bank, piles have been found connected by camp-sheathings, as it is technically called by builders, that is by planks joining them horizontally.

“At the Mansion House, and in the line of the old Wall Brook, piles, peat and Roman pottery were discovered last year.

“Had the piles been found in lines running uniformly east and west, it might very naturally be assumed that they were laid down for the construction of dams across this brook, but they are also found to run north and south. The circular clusters could never have been so arranged for the construction of dams or wharfs, but have all the appearance of having been driven in for the support of buildings, besides which the kitchen-middens prove that habitations of some kind existed here. That they were occupied during the Roman period is also evident, but it does not necessarily follow that they were of Roman origin.”

Subsequent to the reading of the paper, the excavations were continued towards the south end of the site, and the General, being anxious to obtain further evidence as to the thickness of the stratum containing Roman relics, determined to watch the operations for four or five hours continuously for several successive days. The result is as follows:

“Roman red Samian ware is found as high as 13 feet from the

surface, but very rarely, and in small quantities. At 15 feet it is frequently found, and from that depth it increases in quantity till the gravel is reached at 18 to 21 feet.

“The chief region of Roman remains is within 2 or 3 feet of the gravel. We came upon the tops of the piles at 16 feet; they were jagged and rotten, showing that they must have rotted off at that level. This was a point which I desired to have made clear by seeing the earth cut down from the surface until the piles were reached.”

A large quantity of shoe leather bearing marks of use was found. Seventeen human skulls are recorded, all resting on the bottom, the highest being 17 feet from the surface. With these skulls only three human bones were found, although they were looked for.

RECORDS OF J. E. PRICE.

Among the numerous discoveries of Roman remains in London described by J. E. Price are several that occurred on the course of the Walbrook. These accounts are principally to be found in the *Transactions of the London and Middlesex Archaeological Society* and various monographs.

Price has also done good service in collecting a great deal of information relating to the Walbrook, which is accompanied by the map referred to above, on which the course of the stream is traced, largely based on the line taken by the sewers and the parish boundaries. This first appeared in 1869,¹ and was again published on a larger scale in 1870.² On this, the principal finds that have been made at various times along the course of the stream are marked. It is remarkable, however, that no recognition is made of the discoveries of General Pitt-Rivers in 1866, which showed the point at which the stream flowed south of the wall. This would have supplied the missing portion of its natural course and which is left blank on this map, as already pointed out.

The construction of Cannon Street Railway Station necessitated the excavation of the site of the Steelyard, formerly occupied by the merchants of the Hanseatic League. This was found to have been situated on the

¹ *London and Middlesex Archaeological Soc. Trans.*, III.

² *Roman Pavement found at Bucklersbury.*

fling of the eastern side of the ancient stream near where it emptied itself into the Thames.

The important discoveries which were then made on this site are recorded by Price in a paper entitled, "Reminiscences of the Steelyard formerly in Upper Thames Street,"¹ from which the following is extracted :

"From 20 to 25 feet appeared to be the average depth of the Roman level, and here, driven into the clay along the whole extent of the excavations, were numerous piles and transverse beams, extending right across the street and forming a complete network of timber. Many of these beams measured as much as 18 inches square, and all were of great strength and durability.

"They doubtless formed the old water-line and Thames Embankment fronting the southern portion of Roman London. Such beams were observed on both sides of the street, and many had probably been supports for the Roman buildings which so plentifully existed in the neighbourhood of Bush Lane and Scot's Yard. Towards Cannon Street were large masses of Roman masonry such as have been described by Mr. Roach-Smith in the twenty-ninth volume of *Archæologia*. Much of this had to be removed, and it was interesting to observe how completely the old walls defied the appliances of modern engineering, the necessary dislodgments being only effected by the aid of gun-powder ; in some cases, I believe, the veritable Roman walls now form foundations for the support of the railway arches. In some places could be detected the junction of the clay and gravel with the soft black earth and refuse, betokening the course of the Wall-brook, which at Dowgate Dock flowed into the Thames.

"From the Steelyard there is a very elegant bronze in low relief, respecting which various conjectures have been made. Mr. Smith pronounces it a figure of Hope ; and he refers to the coins of Claudius with similar figures inscribed 'Spes Augusta.' It seems to have been affixed to a coffer or to some object as a decoration.

"Of coins may be selected large and middle brass of Claudius, Nero, Vespasian, and Domitian."

A great quantity and variety of pottery is mentioned, Sanian and Upchurch wares being most plentiful.

"In glass, some pieces known as pillar moulding, which are very rare in London, though in some parts of England perfect vessels of this kind have at times been found. Pins, needles, knives, and spoons in large numbers both in bone and bronze. We have also some good Roman keys, a few fibulae, the beam of a pair of scales, and among the minor relics, a little fish-hook ; a plentiful supply, too, of Roman leather. Some of the sandals are beautifully preserved and indicate the moisture of the soil in which they were embedded."

¹ *London and Middlesex Archæological Soc. Trans.*, III, 68.

Further observations on this site are made in a later paper "Notes on Roman Remains."¹

"Prior to the completion of these works" (excavations for the Railway, Cannon Street) "some additional discoveries were made which are worthy of attention, as indicating how densely occupied by buildings must have been this portion of Roman London. The numerous piles and transverse beams which extended across Thames Street were traced for a considerable distance along the river bank and in an upward direction towards Cannon Street. So complete a network of timber did they form, and so massive and durable were the means employed for holding the entire fabric together, that it is evident it was intended to resist a heavy strain or pressure. The Wall-brook here flowed into the Thames, and the drainage of the old city being on a different scale to what it now is, it is probable that the soil of the locality would be damp and yielding, and that some protection for the foundations of the buildings reared along the water-line would be necessary against the inroads of the river. Above this embankment, buildings of great magnitude must have existed, if we may judge from the strength and solidity of these foundations.

"A series of piles adjoining the line of this ancient stream were observed some years since in Princes Street and Lothbury at a depth of 12 feet from the surface, and their position clearly indicated the embankments of a water-course. They penetrated the earth to a depth of 5 or 6 feet, were of oak, and quite black from the boggy character of the soil."

Particulars are given of the remains of the buildings occupying the eastern bank of the stream, and the following relics are mentioned:—Fragments of pottery of "almost every known variety," "large numbers of styli," spoons of various forms in iron and bronze; knives of steel with bone ornamented handles; portions of whetstones, spindles of wood, bone wheels; a portable balance in bronze, and a series of keys. Among personal ornaments several bronze *fibulae*, one bearing a figure of a satyr, another harp-shaped, enamelled with a deep blue, and having a chain for suspension; fragments of bronze armlets, hair and dress pins, in ivory, bone, bronze, wood, and jet, also a variety of coloured and ribbed glass beads. Coins were represented by examples of Agrippa, Claudius, Nero, Vespasian, Titus, Domitian, and Trajan.

"Near Tokenhouse Yard and Lothbury many objects of interest have been found. This is a locality always rich in Roman remains. It was opposite Founder's Court, at a depth of 11 feet and some 20 feet westward of the westernmost gate of the Bank of England opening into

¹ *London and Middlesex Archaeological Soc. Trans.*, III, 212.

² *Ibid.*, III, 219.

Lothbury, that the celebrated pavement now in the British Museum was discovered in the spring of 1805."¹

Excavations in the neighbourhood of Blomfield Street in 1869 led to the discovery of an interesting cremated interment which is recorded by Price.² This consisted of several vessels of pottery and glass containing burnt human bones enclosed within a wooden box or cist. The wooden covering was of oak and of cubical form, measuring 18 inches on each side. It was closed with a domed shaped piece of earthenware, probably formed from the lower portion of an amphora. The vessels it contained were two urns of Upchurch ware, one $8\frac{5}{8}$ inches, the other $8\frac{1}{4}$ inches high, the latter being enclosed in a small wooden keg or tub, a bottle of bright green glass $14\frac{3}{4}$ inches high and 7 to 8 inches square, its mouth covered with a small cup or patera. An amphora 22 inches high was found in the soil adjoining, but no coins accompanied the burial.

The position of this discovery was beneath the site of Old Bethlem, a Priory of Canons founded in 1246, which stood on the east side of Moorfields. In speaking of the boundaries of St. Botolph's parish, Stow says³:

"From Bishopsgate under a part of which is the City Ditch they pass along to Petty France into Moorfields; under the wall and causeway thereof (towards Bethlem), there did run a ditch and from the north part of the said field still doth, so far as Hog Lane."

This spot would mark the east bank of the Roman stream at some little distance west of the road leading northwards from Bishopsgate and near to the ground where sepulchral remains were discovered in 1723. To the east of the highway lay the large burial-ground on Spittle Fields, the discovery of which in 1576 is so quaintly described by Stow.⁴ Both these sites are without the wall, but burials were also discovered at the west end of Camomile Street in 1707, within the wall and close to Bishopsgate. These occurred 4 feet below a tessellated pavement.⁵ All of these interments were associated with Roman coins of the early period.

¹ *Gentleman's Magazine*, 1843, 416, and Roach Smith's *Illustrations of Roman London*, 37.

² *London and Middlesex Arch. Soc. Trans.*, III, 219.

³ *Survey of London*, II, 9.

⁴ *Ibid.*, II, 98.

⁵ Dr. Woodward, *Remarks on the Ancient and Present State of London*, 1723, 12.

An account of discoveries made in the bed of the ancient stream at Bucklersbury is given by Price.¹

The space comprised in this excavation forms a triangle covering an area of 6,600 feet between Queen Victoria Street, Charlotte Row, and Bucklersbury. At this spot the later Walbrook passed, coming from beneath the Church of St. Mildred; it crossed the Poultry and ran by Bucklersbury, at which point it was crossed by a bridge.

A complete section of the bed of the older stream was disclosed,

“indeed the excavations have afforded plentiful illustrations of the wooden pilings placed along the line of the embankment and the gradual slope therefrom to the extreme depth of the river-bed.

“In the conduct of the works, trenches were first excavated for the foundations of the massive external walls. In that parallel with Charlotte Row there appeared at a depth of 25 feet from the surface level a timber flooring supported by huge oak timbers 12 inches square and running parallel with the stream. This was at the south corner and may have indicated a stage or landing place at this portion of the line. Adjoining this were evidences of a macadamised roadway, which extended in a line with Bucklersbury until it reached the apparent course of the brook. Upon the opposite side similar indications appeared and the remains possibly indicate a roadway which here crossed the stream.

“In the trench parallel with Bucklersbury a seam of ballast was disclosed at a depth of 35 feet. In this were quantities of wooden piles, many of which had been driven into the clay prior to the silting up around them of this sand and shingle. The greatest depth from which these piles were drawn was upwards of 40 feet from the street level.”

Fragments of bricks, tiles and other remains of buildings were found, together with numerous coins and miscellaneous objects,

“all bore evidences of fire; portions of metal and glass were collected which by extreme heat had been melted into misshapen forms. At this spot there was also discovered a large quantity of wheat.”

On the front facing Charlotte Row, on the north-east corner at a depth of 30 feet, a wooden framework of oak was come upon; this was 3 feet square with its four sides 8 inches wide, the timbers of which were $1\frac{1}{2}$ inches thick. It contained a quantity of pottery fragments of various descriptions. Above it was a quantity of wooden piling, which at this spot appeared in profusion and

“it had been clearly placed on the natural soil as a lasting monument and with some special intention as to its signification.”

¹ *National Safe Deposit*, 873.

Price supposes it to have been an *Arcus finalis* or boundary monument. No coins were found contained in it, but

“amongst those found in the *débris* above it none that we have seen are later than the time of Antoninus Pius.”

Altogether nearly 70 coins were procured from this site, of which the writer says :

“They all belong to what is known as the best period of Roman history and to some extent they afford an indication of the age to which the recent discoveries belong. Of this series we have nothing later than the reign of Antoninus Pius and to this period, ranging from the time of Claudius, the chronological sequence is unbroken, and this abrupt cessation is sufficient for the assumption that our site formed part of the first Roman settlement and that most of the relics found at the extreme depth of the excavations are as early as the close of the second century of our era.”

A portion of a coarse description of flooring was found in the trench parallel with Queen Victoria Street and this Price supposes from its position to belong to the buildings connected with the tessellated pavement discovered three years previously, and which has formed the subject of another monograph by the same author.¹ This celebrated pavement was found at a depth of 19 feet from the level of the roadway (12 on map, Pl. VIII) at a very short distance from the course of the stream, to which it was parallel.

“In form it is a parallelogram, 13 feet wide and 12 feet 6 inches in length, exclusive of a semi-circular portion at its northern end of 7 feet 3 inches diameter, making its total length about 20 feet. It was enclosed by walls of brick and tile with blocks of chalk and ragstone about 18 inches thick. This rested on a chalk foundation laid on square wooden piles, pointed at the end, and from 3 to 4 feet long ; these were firmly driven into the clay.”

Flues of tile were found beneath it which had no doubt been connected with a hypocaust.

This beautiful pavement was carefully taken up and is now preserved in the Guildhall Museum.

THE EARLY CONDITION OF THE MOOR AND THE WALL.

It remains now to consider the conditions of the surface existing in early Roman times, on the ground which was occupied by the Moor, and the building of the City Wall in this part.

Sections in the locality show the London clay capped

¹ Roman Pavement at Bucklersbury, 1870.

with Old Thames gravels, which in places have patches of sand and clay; overlying these we find a layer of dark mud in which vegetable remains and fresh-water shells are found. This deposit is the result of the marsh and consists largely of peat. It is of much greater thickness in the lower parts nearer the wall, and is less evident to the north and west of Finsbury. On the north side of Finsbury Square it is wholly absent, and here a patch of clay 8 to 9 feet thick overlies the gravel (see Section No. 1, fig. 2). This spot formed a hillock on which in later times five windmills existed, as represented on Hollar's plan. J. T. Smith says,¹ "a part of which ground was within my memory called Mill Hill."

Until quite recently the lower part of Tabernacle Walk which adjoins this spot was called Windmill Street. Unfortunately this name has now been discontinued, the whole being called Tabernacle Street, thereby removing another landmark of historic interest, so many of which have lately disappeared owing to the unintelligent renaming of London streets that has taken place.

The fact that Roman remains have been found in this deposit formed by the "Moor," has led many observers to regard the marsh conditions as having existed at least from the time of the coming of the Romans, and to overlook the significance of the fact that not only did these relics extend to the bottom of this marsh-mud or peat, but that cremated interments had been found in the sub-adjacent gravel. Roach-Smith, who discovered urns in Eldon Street which he describes as "probably deposited for funeral purposes," says in endeavouring to account for their presence in the marsh, "portions however seem to have been drained or filled in by the Romans."²

Price evidently followed Roach-Smith, whose opinion he quotes, in holding this view, but the difficulty of accounting for the discovery of the interment in Blomfield Street led him to make the following observations regarding the marsh³ :—

"That this was not always its condition is tolerably certain. We can imagine it in primitive times as literally 'moor' and 'fields,' an open site bounded by woods and forests, and intersected by brooks and streams which had perhaps pursued their course for centuries; and as

¹ *Topographical Antiquities*, 36.
- *Archæologia*, XXIX, 153.

³ *London and Middlesex Arch. Soc. Trans.*, III, 495.

altogether a spot offering advantages to the Roman settlers, though it is a noteworthy circumstance that the growth of the city was slower in this than in other quarters. A locality, however, mostly under water would not have been selected by the Romans either as a place for sepulture or for any other purpose. The boggy, fenny character of the district is rather the result of excavation in later days for the purpose of procuring clay for brick-making."

The true conditions originally prevailing were seen, however, by Sir William Tite, who says¹ :

"The marshy nature of the soil on the north of London was for many centuries so notorious as seemingly to have led to the conclusion that the land had been the same at all periods of the history of the metropolis."

"That much of the ground on the north side of the city wall was anciently dry, and that not any marsh originally existed there was further proved during the construction of a sewer in London Wall, to which the cutting ran parallel and below its basis."

After describing the culvert already referred to, he continues :

"As the depth from the present surface to the bottom of the sewer was 18 feet 4 inches, and the open ditch of the fortress was still deeper, it is evident that, at the time when they were constructed, the adjacent ground was dry and substantial, for the later accumulation of soil was so soft that at one part the bricks could scarcely be laid. The ground gradually improved in consistency up to the north end of Bloomfield Street and at Wilson Street strong gravel was reached, containing a very fine flow of water."

Sir William Tite concludes from the evidence of Fitz Stephen that

"on the north of London were corn-fields, pastures, and delightful meadows intersected by pleasant streams, on which stood many a mill."

In another place Fitz Stephen says :

"when that vast fen (or lake) which waters the walls of the city towards the north, is hard frozen,"

and Sir W. Tite suggests that this place was really a piece of water in which the city possessed the right of fishery, and supposes

"that the marsh was gradually and artificially increased, especially about the year 1213, when the citizens completed a series of ditches to surround and strengthen the walls of London."

However true this last conclusion may be as to the extension of the marsh in later times, it is also evident from the occurrence of Roman relics in the lower portion of the marsh deposit that these conditions had prevailed for a considerable portion of the Roman occupation. The

¹ *Catalogue Royal Exchange*, xxix.

examination of the deposit recently disclosed, however, quite bears out Sir William Tite's opinion that this part was in an earlier stage a sheet of water.

The portion of moor on the site recently excavated (see Section 5 in fig. 2) though it is at the side of the bed of the stream, is sufficiently far from it to have been out of its reach under normal conditions, being about 80 feet from the west bank. Here the soil overlying the gravel to a height of about 4 feet contained evidences of the Roman age and none other. Above this level the objects of later times appeared, the whole being regularly laid, and nowhere was there any evidence of disturbance or mixture of relics of different periods such as would have occurred had this ground been dug for clay in later times, as suggested by Price, to account for the boggy and fenny character of the district. When the extent of the moor is considered, it will readily be seen that the brick-making operations, while not tending to improve the conditions of the marsh, could not possibly have produced them. We must look for other reasons to account for a surface of gravel which in early Roman times was dry and substantial, becoming converted into a marsh which had accumulated 4 feet of mud by the end of the Roman occupation. This, I venture to think, came about through the building of the City Wall, the line of which, it will be seen by the plan, ran directly across the ancient stream, and cuts through a mass of habitations situated on piles driven into the river-bed, the remains of which within the wall were discovered by General Pitt-Rivers, while those without have been recently disclosed and will be hereafter described.

The wall was practically intact between Moorgate and Bishopsgate in 1723, as mentioned by Dr. Woodward¹ in his letter to Thomas Hearne:—

“You'll find a pretty full and particular description of that part of London Wall that joined to Bishopsgate. It consisted of three different sorts of work, rais'd in three several ranges, one over an other. Any one who has the curiosity to see a sample of the uppermost yet standing, may do it on each side Moor-gate, for a considerable extent; as also of the middlemost; especially on the west side of that gate, at a distance of about 20 or 30 paces, where 'tis yet firm and has suffered very little dilapidation.”

¹ *Remarks on the Ancient and Present State of London, 1723, 48.*

Two fragments of this wall yet remain, one by the church of All Hallows, the other, preserved by the Corporation, to the west of Moorgate Street. J. T. Smith gives two excellent views in his *Topographical Antiquities* of the portion of the wall, between these two points, while it served to divide Bedlam from the street. These were taken shortly before Bedlam was pulled down; one of these views is here reproduced (Pl. I) and it shows some of the windows of the cells of that institution, from which hang toys belonging to the unfortunate inmates. Smith, in his description, says¹:—

“The opposite plate presents short specimens of that great portion of London Wall which extends 714 feet westward from the ground which faces the north end of Winchester Street nearly to the spot where Moorgate stood. The chief part of that great length of wall consists of three distinct characters. First an inside one of chalk and flint, cased on either side with a rubble one of rag-stone strongly cemented together. This wall is in some places about 8 feet thick, and 8 feet high from the present pavement where the mud raker is (see the print), but it must have originally been commenced at a depth considerably below him, as may be seen whenever the ground is opened. The third character is a tessellated or partly-glazed brick wall, surmounted with battlements coped with stone. It is erected upon 2 feet 3 inches of the cased wall, on that side next to the City Ditch, and is in height from the top of the cased wall to the top of the stone coping 8 feet; the space between the battlements is 2 feet 6 inches.”

Little record seems to have been made of its subsequent history, but Tite says it remained almost complete until 1817, and that its foundation was under a layer of Roman bricks, and refers to J. T. Smith's statement

‘and a so-called Roman arch, just at the end of Winchester Street, shown by an imperfect sketch in Mr. Roach-Smith's book, gives indication of Roman work existing there or thereabouts.’²

Timbs³ mentions that

“in 1818 a large portion of the wall on both sides of Moorgate was demolished.”

This destruction no doubt applies only to the upper portion, as until lately the site it occupied was represented by the pavement on the north side of the present street and its destruction to any great depth would possibly not have been necessary. As the street has been

¹ *Topographical Antiquities*, 28.

² *Archæologia*, XL, 299.

³ *Curiosities of London*, 1855, 650.

recently widened, portions of the foundations may at present lie under the roadway.

Hughson¹ mentions the demolition of the wall :—

“Directing our attention again to the city, we observe the old north wall of London running behind the site of Old Bethlem Hospital, entirely taken down, which has thrown open to public view the area of the new square, enclosed with handsome iron railings. The wall was found uncommonly thick, and the bricks double the size of those now used. The centre had been filled in with large loose stones, etc.; the line of wall now removed is partly the last vestige of that which remained of a circumference of 3 miles and 205 yards.”

Beyond the allusions to the foundations of the wall in connection with the culverts, I have been unable to find any precise record concerning them in this district.

Roach-Smith² describes the culvert as

“running beneath the foundations of the London Wall in London Wall, opposite Finsbury Chambers.”

There seems little doubt that the culverts mark the base of the wall, this level being the top of the gravel, which was the original surface, on which the foundations have been found in other places where they have been recorded.

In many parts of this surface patches of clay occur, sometimes as at Moorgate Street (Section 2, fig. 2) several seams of clay are alternated with layers of gravel, while in other places the London clay comes up to what was the surface in Roman times. Two methods of building the foundations of the wall were adopted by the Roman builders. In those parts where the clay formed the surface, a trench was dug in it which was filled with flints and puddled clay; on this the wall was built, as is described by Mr. G. E. Fox, in his account of the portion examined by him at Aldersgate,³ and in the case of the fragment found near the Tower which is described by Roach-Smith.⁴

Where however gravel occurred it was considered a sufficiently good base to build directly upon, without resorting to the trench and puddled clay.

Two fragments of this description have recently been carefully examined by Mr. John Terry,⁵ one at the Old

¹ *Walks in London*, 1817, 355.

⁴ *Illustrations of Roman London*, 15.

² *Illustrations of Roman London*, 170.

⁵ *London and Middlesex Arch. Soc. Trans.*, N.S., I, 351 and 356.

³ *Archaeologia*, LII, 609.

Bailey, the other at Cripplegate, of both of which he notes that the foundations were found "on the ballast." That the wall was built when the gravel formed the existing surface at Moorfields and before the marsh-mud had accumulated over it, I hope to be able to show later.

Perhaps on no point relating to early London have archaeologists been more universally in agreement than the late date of the building of the City Wall,¹ and this on the strength of the most slender evidence.

The various reasons urged in favour of this are:—the large extent of the area enclosed, and the gradual growth shown by interments of the earlier period within the wall; the absence of reference to Londinium by the ancient writers, as a city of importance until late time; the method of building and the materials employed in its construction, which differ from the work of the best period at Rome.

The fact that London was ravaged by the bands of Allectus, and easily captured by the troops of Asclepiodatus in A.D. 297, has been considered by some as sufficient reason for concluding that the town was not defended by a wall in the time of Constantius.

Tradition has ascribed its erection to the Empress Helena about A.D. 306, as related by Simeon of Durham, an historian of the twelfth century. The belief that Helena was a British princess appears to be the foundation of this tradition, but the period assigned has been thought by many to be probable.

The still later date of Theodosius perhaps finds most favour. Theodosius in A.D. 367 delivered London from an attack of the Picts and Scots, and he is recorded to have repaired walls and restored strongholds. It was during the reign of this emperor that Londinium assumed the title of Augusta, which has been thought to signify its extension and circumvallation. Others have considered the wall as one of the last acts of the Romans before abandoning the island.

Of all the reasons given for its late construction perhaps that of the style in which it is built carries the most weight, but against this it has been pointed out that

¹ Roach-Smith, *Archæologia*, XXIX, 295. J. E. Price, *A Bastion of London Wall*, 7, etc.
160. Sir Wm. Tite, *Archæologia*, XL,

in distant colonies the Romans did not always follow the practices usual at home and invariably made use of the best materials to hand.

At whatever period of the Roman occupation the wall may have been built, the means taken to carry the stream through it, so as not to weaken the defence, must have been a question of some importance. It is one however to which investigators do not appear to have given their attention, owing probably to their having failed to recognize that the stream was so large and important when the wall was erected, regarding the formation of the marsh and the attenuation of the stream at this time as already accomplished. This of course would be a natural inference if the construction of the wall took place at the late date which has usually been ascribed to it.

On reference to the map (fig. 8) it will be seen that the positions of the culverts described by Roach-Smith and Sir William Tite come directly in the course of the stream, the line of which has now been determined by the recent excavations, and I venture to suggest that these were two of a series of culverts by means of which the stream was carried through the wall. The depth at which they occur is quite in agreement with their having served this purpose, the lower one being at the precise depth at which the river bed is found at this spot, and the reason that the other is on a higher level may be that it served to carry off the flood water, as it eventually fell into a ditch on the south side, which is said to have been "still deeper," and this would bring the level of both to about the same on the south side. As the thickness of the wall does not exceed 10 or 12 feet, the greater length of these culverts may perhaps be explained by their having to pass not only through the wall but under the bank and street within. As the position they occupy only affects a portion of the eastern side of the stream, we may suppose that several others originally existed to the west of them.

THE RECENT DISCOVERIES.

We will now pass to that portion of the stream recently examined by Mr. Kennard and myself. This forms, as I have already said, the part of the main branch at the point

where it was crossed by the wall, extending to the north as far as Finsbury House and running parallel with Blomfield Street. The centre of the stream, in Roman times, would be a little to the west of the western side of Blomfield Street.

The bank of the stream was clearly showing at one point in the earlier part of the excavation, before my

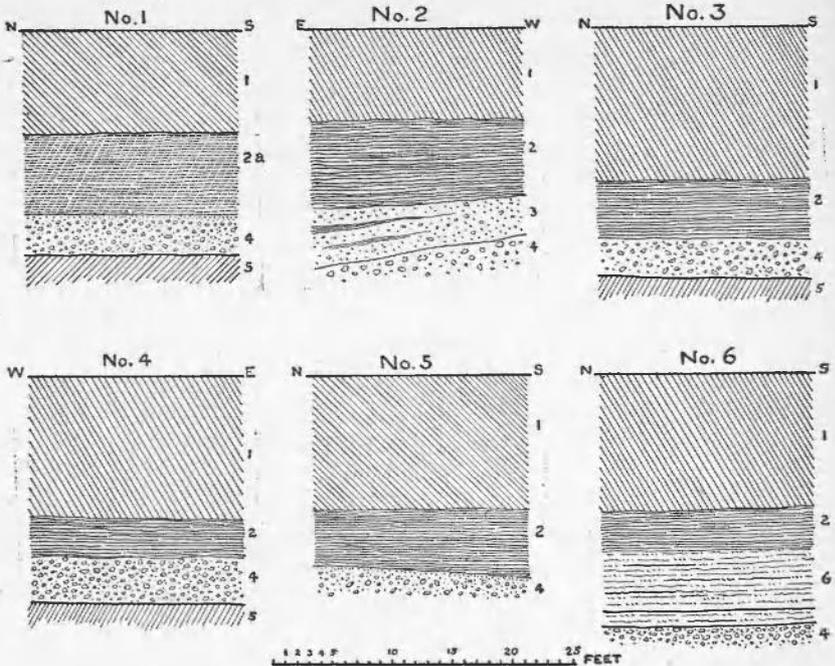


FIG. 2.—SECTIONS TAKEN IN THE NEIGHBOURHOOD OF MOORFIELDS.

- No. 1. North-west corner of Finsbury Square.
- No. 2. Moorgate Street, near Chiswell Street.
- No. 3. Site of New Moorfields Chapel, Eldon Street.
- No. 4. Moorgate Street, Electra House.
- No. 5. South-east portion of Finsbury Circus.
- No. 6. Site of Old Moorfields Chapel. The bed of the stream.

arrival on the scene, but this was noted by Mr. Kennard and was about 70 feet westward from the street. So far as we could see, it did not appear to be very well marked throughout its course, probably from its being a shallow stream, and having, in this part, no very defined banks. This appears to be borne out by a number of sections which I have been able to obtain in the locality and which show the surrounding surface to have been in most

places only a few feet higher than the bed of the stream (see fig. 2). The discoveries of interments in Blomfield Street mark the eastern banks, and show the valley of the stream therefore to have been about 100 to 120 feet wide in this part.

Generally speaking, the result of our examination of the deposit agrees with the descriptions of General Pitt-Rivers, of which our record forms another chapter, but it differs in some important details. The base of the stream was found by us at a depth of 22 feet at the deepest part. Above this, the filling, while being more or less of a peaty nature, differed considerably in its composition at the various levels. (See section, fig. 3.)

Commencing from the lowest, the bottom of the stream overlying the river ballast was composed of a fine sandy deposit about 1 foot in thickness. Above this was about 4 feet 6 inches to 5 feet of sand and carbonaceous silt; this passes gradually into the peat, which is at first of a light colour, but becomes very black at about 11 feet from the base; this again passes into light peat. At those places where it was not cut into by the foundations of the houses that stood above, it rises to within 6 feet of the surface, after which the soil is largely composed of modern rubbish.

All these deposits had been regularly formed, and it was evident that no disturbance had taken place in them, such as might occur in a swift flowing stream liable to sudden floods, neither did we see any evidence that previous excavations had been made.

With regard to the relics in these layers, nothing was found that could possibly be referred to an earlier period than the Romano-British. Not a scrap of pottery or any object of earlier date was found anywhere in the digging. At the lowest level in the sand overlying the river-ballast very little occurred, beyond several fragments of the well known Romano-British black ware ornamented with diagonal lines and also some of the grey ware. Several of these were resting quite on the bottom of this layer. Roman objects were found uninterruptedly to a height of about 9 feet, but by far the greater quantity was at a level of from 3 feet 6 inches to 6 feet from the base. This forms the level of the upper part of the piles

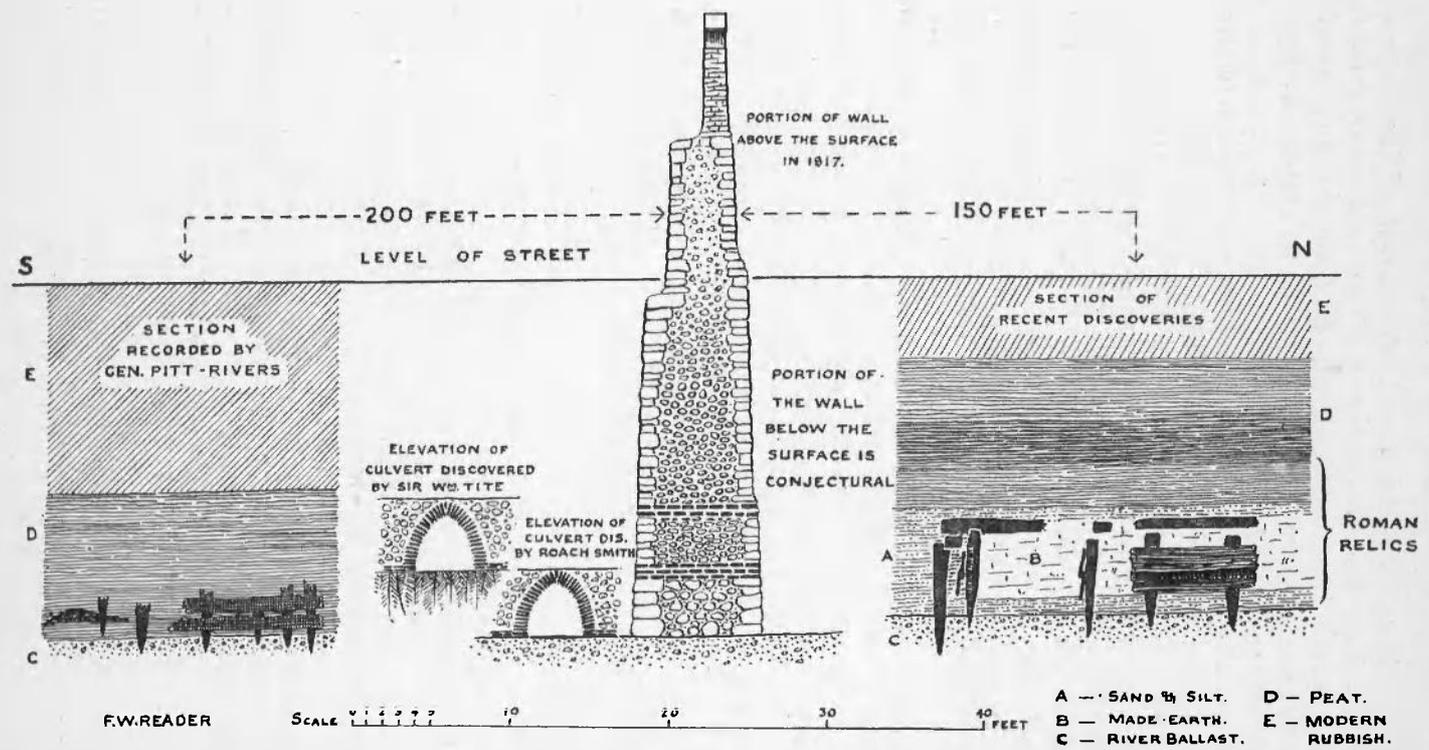


FIG. 3.—SECTIONS SHOWING COMPARATIVE LEVELS N. AND S. OF LONDON WALL AT MOORFIELDS.

which occur here. Above this, in the light lower peat, objects became scarcer and ultimately blended with those of later date; nothing Roman was found higher than 9 feet 6 inches, from which level the black peat and the upper light peat contained plentiful evidence of the mediaeval period. It will be seen by a comparison of our section with that of General Pitt-Rivers, that the period of the formation of the peat differs. From General Pitt-Rivers's description, the peat in his portion clearly belongs to the Roman period. In the part examined by us, the lower deposit constituting the Roman level is for the larger part composed of sand and silt, which gradually passes into peat, only 3 feet of which contained Roman relics, the greater portion of the peat growth north of the wall clearly belonging to a later age. The difference will, perhaps, be better seen on reference to the general section (fig. 3), on which the principal characters of both sites have been projected relatively as to depth, together with the wall and the two culverts which have been referred to above, in elevation.

Now the two sites being contiguous, separated only by the wall, would by this difference in their character present a problem very difficult to solve if we are to suppose that the marsh was formed before the construction of the wall. If, however, we allow that the wall was built on the surface represented by the gravel, previously to the appearance of the marsh, we have then, I venture to think, not only no difficulty, but are actually provided with corroborative evidence.

The wall passing across the bed of the stream, with only small low openings by which it could pass, would have partially dammed the water, checking its flow within the city from the north, while the wall on the south or Thames side, the remains of which were discovered by Roach-Smith,¹ and the line of which is represented by Thames Street, would have checked its outfall into the Thames and prevented the action of the tides, while the numerous pile structures constructed in its course served to accumulate *débris* and form further obstruction. In this way it is less difficult to understand how a river which had not commenced to deposit its bed

¹ *Archaeologia*, XXIX, 148.

up to Roman times, should during those times have become filled with peat growth to a height of 9 feet, which General Pitt-Rivers finds so unaccountable. The building of these two walls might well have converted what was probably a tidal stream into a sluggish, almost placid water, which would have been favourable to the growth of peat, while the refuse from a numerous population living on the banks within the city would soon accumulate to fill the bed.

Northwards the stream would remain unchecked until reaching the wall, bringing down the sand washed from the higher land, which would be deposited before the water found its way under the wall.

In the course of time, as the entrance of the culverts became buried, the water would accumulate to form the swamp which is known to have formerly existed north of the wall from Cripplegate to Bishopsgate, only that water reaching the other side which could work its way at a low level along the top of the London clay.

In this manner the stream still flows, for in addition to the water at a higher level which now runs in the sewers, a strong flow of water is also found whenever the gravel beneath is dug into in this locality.

In later times the water which spread itself along the north of the wall would have soaked under it, causing a broad swamp to exist also to the south of the wall for some distance, until the water was again able to find its way into the original river-bed, causing by reason of its choked passage a stretch of morass right through the city, broader where it adjoined the wall and narrowing in the lower portion, probably to the limits of the old stream.

That this condition of things existed is amply verified by the nature of the soil that has been met with in these parts, and also by the observations of Roach-Smith, who, apparently without recognizing the cause, states the fact that

“so far as we are authorized to judge from discoveries made at various times in almost all parts, we may safely conclude that the streets and buildings of the Roman city, if not quite so dense and continuous as those of the modern city, left but little space throughout the entire area unoccupied, except a portion of the district between Lothbury and Princes Street and London Wall, and the ground adjoining the wall

from Moorgate towards Bishopsgate. We find also, as might have been expected, that generally towards the northern wall the vestiges of buildings are by no means so numerous nor so densely packed as towards the south and in the centre."¹

Not only was this true of Roman times, but it seems to have continued to be unsuitable for habitation down to a very late period even after the level of the surface had become considerably heightened by continual occupation above the level of the moor, and the later Walbrook had settled into its more restricted course.

The maps of Aggas and Braun show that even so late as the sixteenth century the ground adjoining the wall from Moorgate to Bishopsgate consisted of gardens, to a far greater extent than any other part of the city. This ground is bounded by a roadway made up of Broad Street, Lothbury, Gresham Street, and Coleman Street, while in the intervening space no other roads are shown.

At an earlier time this unoccupied ground was probably of greater extent, for on the east the ground between Broad Street and Bishopsgate Street and that on the west between Coleman Street and Aldermanbury has also a large proportion of garden ground. The building of Moorgate, in 1415, doubtless led to the formation of Coleman Street, so that probably no important street traversed the whole of the space lying between Bishopsgate and Cripplegate before this time.

It will be seen that there is not only a great absence of streets running north and south, in this space, but in the parts of the city below this which represent the ancient water-course there are also more gardens than in the ground on either side. The various streets crossing it from east to west were no doubt connected by the numerous bridges which we are told crossed the later stream.

This is further borne out by a statement of Fabyn,² which becomes by this explanation easier to understand. In describing the destruction of London by fire, in the reign of Ethelred, A.D. 981, he says :

"Ye shall understand that at this daye the cytye of London had most housynge and buildinge from Ludgate toward Westmenster & lytell

¹ *Illustrations of Roman London*, 21.

² *Ed.* 1533, cxxi.

or none where the cheefe or herte of the cytye ys now, except that in dyvers places was housynge, but they stode withoute order."

Such conditions as have just been described would preclude us from regarding the position of the streets of later times as having followed to any extent the original plan as laid down when Londinium was first walled to its ultimate limits. Continual raising of the level, and consequent improvement in the condition of the ground, no doubt contributed to alteration in the line of the streets not only during Roman times but in subsequent ages, and helped to bring about the arrangement that has been regarded as so irregular and concerning which there has been so much speculation.

Judging from Sir Christopher Wren's discoveries¹ when digging for the foundations of Bow Church, it seems that the swamp, at one time, must have extended at least as far as Cheapside, for there, at a depth of 18 feet, he found a Roman causeway, which was 4 feet in thickness, formed of stone and Roman brick, and "which ran for the whole length of the town." This he was led to regard as the northern boundary of the earlier Roman city, because to the north of it "was a great fen or morass." This view, in a sense, is perhaps correct.

The roadway found at Bucklersbury,² which ran along the Poultry, is considered by Price to have been the continuation of the causeway of Sir Christopher Wren, crossing the Walbrook by a bridge at this point.

Although Roman pavements have been discovered on the north of Cheapside,³ the level at which they have occurred is 17 feet from the surface, or 5 feet above the bottom of the causeway. It seems probable therefore, that at one time nearly the whole of the northern portion of the city had to be abandoned owing to the morass, and this causeway formed the barrier to its further approach southwards. In the course of time, as the conditions improved, the line of occupied ground was carried further north, the result of this being the two concentric curves of street, the southern one running from Bishopsgate along Cornhill and Cheapside, that to

¹ *Parentalia*, 1750, 265.

² *National Safe Deposit*, 49.

³ *Lond. and Middlesex Trans.*, II.



F. W. R. photo.

EXCAVATIONS SHOWING PART OF STRUCTURE A.

the north being formed by Broad Street and Lothbury and Gresham Street.

Even as late as 1090, Cheapside was unpaved, and the roadway very yielding and unsubstantial, as Stow records that when the steeple of Bow Church fell, portions of it are said to have penetrated the earth as far as 22 feet.¹

The stream spoken of by Maitland² as running along Cheapside may very probably have been a drain following the line of the causeway into the Walbrook.

The Pile Structures.

Before describing the piles which correspond to those pointed out by General Pitt-Rivers as having formed supports for pile-dwellings, it will be well to say that piles occurred in other parts of the filling, which belong to later periods. The majority of these were of recent date and were driven in to form a footing for the foundations of the houses which were built here in the early nineteenth century, and a few appeared to have been placed there in earlier times.

Piles occur in many places in London and have served various purposes at different periods, so that of themselves, without some strong corroboration, they would form but doubtful evidence of pile-dwellings; their age also might be very difficult to determine, as they would easily have been driven from the surface to lower levels in such soft soil.

Many of the Roman pavements have been found to be resting on piles; the wall on the river side was supported on piles, and the piles with planks, described by Roach-Smith, in the lower portions of the Walbrook appear to have been for strengthening the banks. They might also have been used for damming the stream, as pointed out by General Pitt-Rivers, though, as he shows, the position of those discovered by him was not compatible with this explanation.

Those examined by us were clearly distinguishable from those of later date, none of these latter having reached the lower levels. Of the piles in the earlier

¹ Stow's *Survey*, III, 21.

² *History of London*, II, 826.

portion of the digging very little can be said, as the circumstances were unfavourable for investigation, but piles were met with throughout that part of the excavation which marks the bed of the stream. Our observations of the pile structures are therefore confined to the portion A, B, C, D on the plan (fig. 4). They

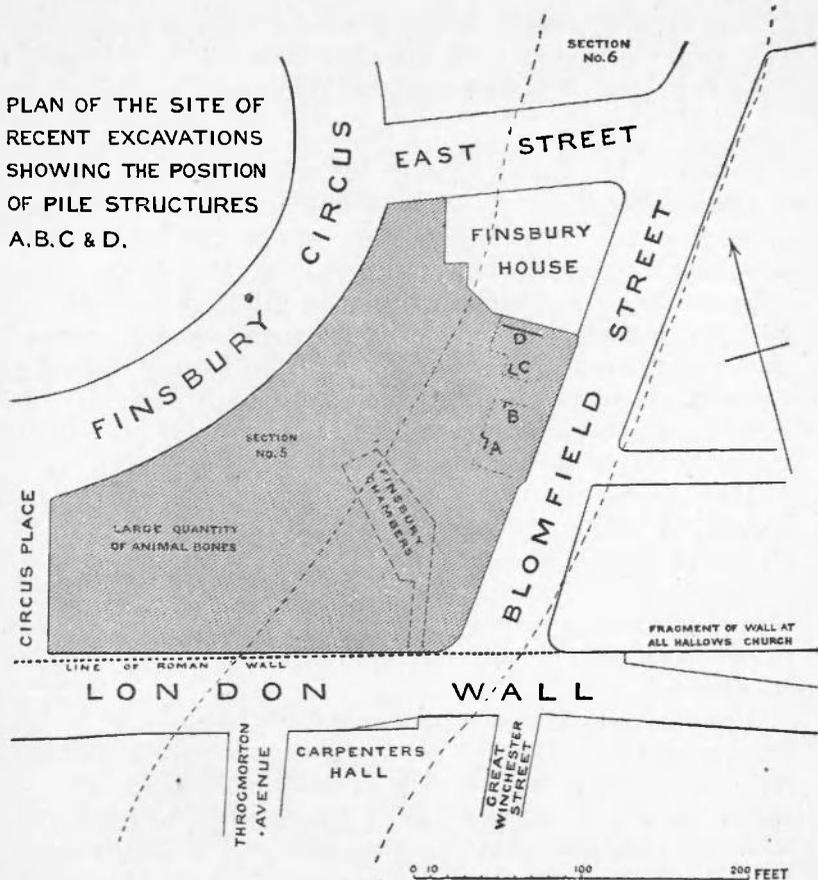


FIG. 4.

consisted for the most part of platforms, formed by short piles against which planks were placed, so as to form compartments which were filled with earth and rubbish. On this platform, the height of which would appear to have been just above the water level at the time of their construction, the dwellings were erected, many of the

horizontal timbers of the ground level remaining, as were also fragments of shaped and mortised wood which are doubtless portions of the superstructures.

The Piles.

The piles were made of split logs averaging from 4 feet to 6 feet in length, and 6 inches to 10 inches thick at the top, tapering to a roughly hewn point, which in most cases was square in section. These were driven into the sand, which apparently formed the bed of the stream at the time, as very few of the piles penetrated the gravel more than a few inches.

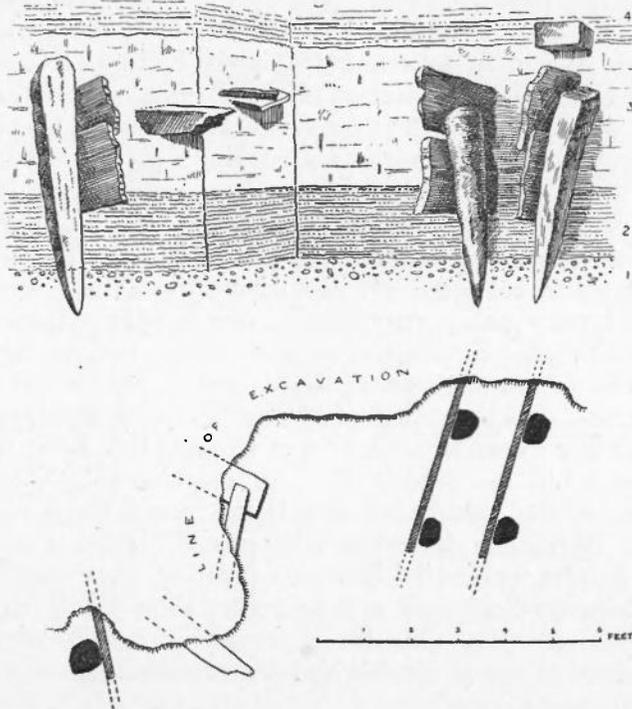


FIG. 5.—STRUCTURE A.

The Planks.

The planks were well formed, about $1\frac{1}{2}$ to 2 inches thick, and averaged from 9 inches to 1 foot 6 inches in width, one was as much as 2 feet 5 inches wide.

In length some of them reached 6 feet, but most of them had been partly destroyed by the workmen when found by us, and others we were unable to clear sufficiently to ascertain their full length, or they would no doubt have proved to be much longer. None of the planks were fastened to the piles by nails, though nails were found in great numbers mixed with the soil around the structures and particularly just overlying them. Several portions of the superstructures were also found containing nails.

In nearly all cases, two planks were used to form the wall or partition of the platform, and these were placed so as to slightly overlap. The lower plank was in most cases just resting on the level of the sand or extended only a few inches into it. We had no opportunity, as I have said, of ascertaining how these piles were arranged in plan, except in detached fragments. In one instance (Structure A), the position of four piles was obtained; these were from 2 to 3 feet apart and connected by planks laid against them, forming two parallel walls 1 foot 6 inches apart. So far as we could see, the greater number of these planks were placed connecting the piles at all angles, and their direction was not regulated by the line of the stream, nor set against it. Sometimes they were in parallel rows as in structure A, but in others they were diagonally placed, the end of one plank resting against the side of another as in structure C, so as to form partitions dividing the platforms into compartments. From their position with regard to the piles, most of the planks could have been held in position simply by the weight of the earth with which the compartments were filled. But some, however, were placed outside the piles, as at A in structure D, in which position they could not have remained without a fastening of some kind. It may be, of course, that piles did exist on the outside of these planks at some point beyond the area which we were able to examine.

The large number of well-formed planks, some of great size, is noteworthy, and it seems evident that their formation was a matter of no difficulty to the people who made these constructions. The method of their manufacture was not apparent from any marks that could be detected on their surface.

Nothing could have been more clear than the artificial nature of the filling between the planks. Not only did it differ entirely from the ordinary deposit at this level and contain great quantities of pottery fragments, bones, *etc.*, but often the earth separated only by the thin plank partition was of a totally different description and such as anyone with experience in excavations would recognize as made earth. As distinct from the water-laid deposit at the same level, this artificial construction was very clearly

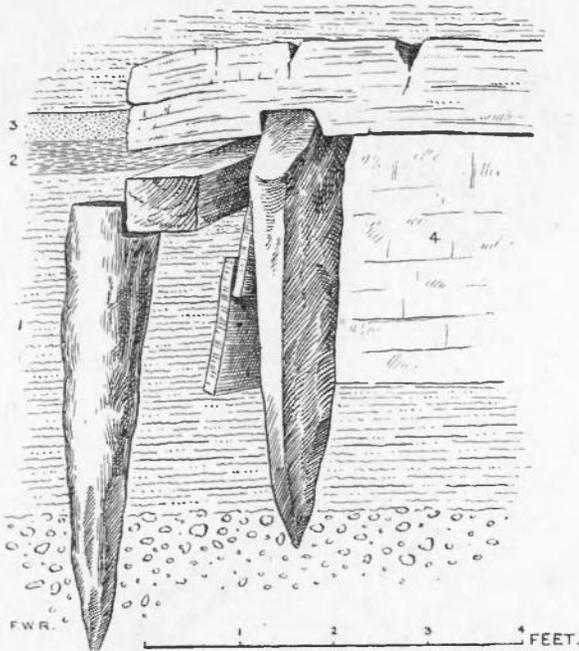


FIG. 6.—STRUCTURE B.

shown in the last few feet of the digging, immediately adjoining Finsbury House. (Fig. 8.)

Here the features revealed in the section were remarkably clear. Between two of the platforms was a space 11 feet 6 inches wide, the sides and bottom of which were boarded with planks. The flooring was laid just on the top of the sand, which then presumably formed the river bottom.

We were unfortunately unable to complete the examination of this curious construction, but we dug in one

corner and found the flooring for about 2 feet. It apparently extended for a considerable distance, both on the side where the workmen had cut it away and onwards towards Finsbury House, but it was destroyed before we could examine it further.

Whether this construction formed a channel in the stream, a dock, or a pit, it was evidently open when the platforms were made, and subsequently became filled with

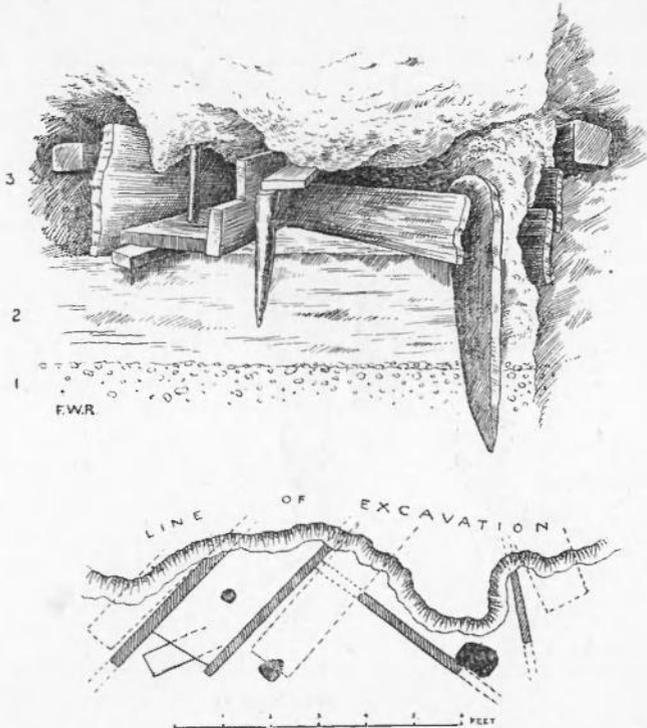


FIG. 7.—STRUCTURE C.

a sandy deposit washed in by the stream. That this filling was water-laid could be beautifully seen on the exposed section by a thin seam of fine white sand, evidently the effect of some flood. It was 2 or 3 inches thick and it sagged into the filling of the pit, with its ends resting on the tops of the platforms on either side, proving that they were constructed before the river bed had filled up to their level. (See 5 on fig. 8.)

Again, the difference was shown by the relics, every shovelful of earth from the platforms containing some fragments of pottery, bones, oyster-shells, nails, *etc.*, while not a scrap of anything denoting human agency was found in the filling of the pit, although a considerable quantity of it was removed. We may therefore reasonably conclude that the silting up took place after this site had ceased to be occupied.

General Pitt-Rivers states that

“all the tops of the piles had rotted off at about 2 feet above the ground,” which he concludes

“must have been the surface of the ground or the water when the structures were in existence.”

We, on the contrary, found that not only were the piles perfectly preserved, but also the horizontal timbers resting just above, which I take to represent the plates on which the dwellings were raised. In some cases the piles were mortised into the horizontal beams (structure B, fig. 6). Not only was this the case, but in the soil just overlying the tops of the piles numerous pieces of shaped wood, some containing nails, were found, which were evidently the remains of the superstructure which had fallen. The majority of these were found on the west side of the pit (fig. 8), but the ends of timbers were showing in most of the sections at this level and would doubtless have proved to be of a similar nature had they been further examined. Those on the west side of the pit we were able to investigate thoroughly, owing to the top layers of soil having been first removed, almost down to the level of the tops of the platforms.

We have therefore a striking difference in the conditions found by us, as compared with those of General Pitt-Rivers, who records that all the tops of the piles were “jagged and rotten,” that they reached only to a height of 2 feet above the gravel, and that no remains of the superstructure were found, only one plank containing nails being recorded.

In the part examined by us the piles were perfect and were on an average 4 feet to 4 feet 6 inches above the gravel; over the well-preserved tops lay horizontal beams, into some of which the piles were mortised, while scattered

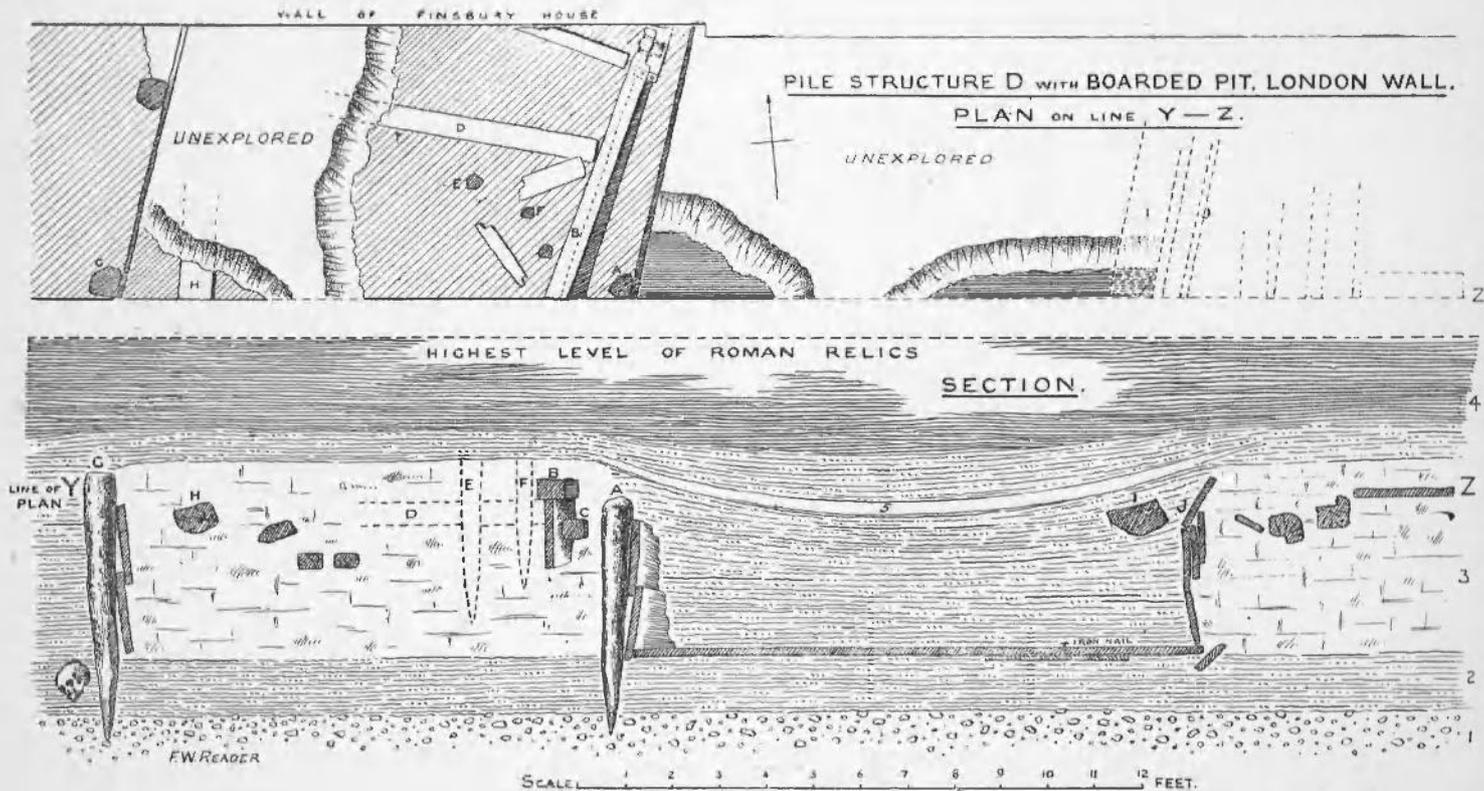


FIG. 8.

in the soil above were plentiful remains of the super-structures, the whole forming a platform or foundation which stood 3 feet 6 inches to 4 feet above the bottom of the river.

Should the reasons which I have put forward to explain the difference in the period of the peat formation of these two adjacent sites be thought satisfactory, then they would equally serve to explain these further discrepancies. The reduction in the volume of water south of the wall would have left the upper portion of the pile-structures exposed to the weather, while on the north they would have become covered up and have been preserved by the accumulation of water in this part.

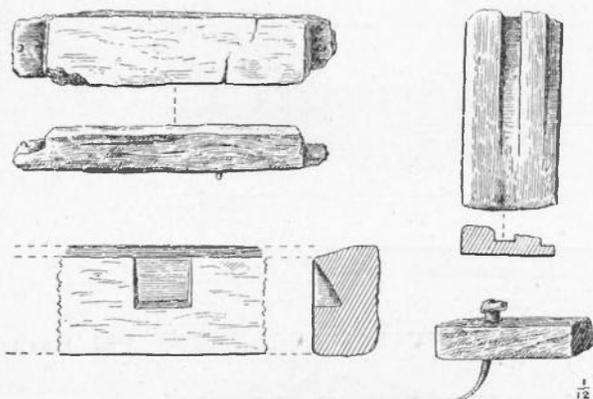


FIG. 9.—WORKED PIECES OF TIMBER.

The kitchen-middens found by General Pitt-Rivers make another point of difference between the two sites. Nothing of this nature was noticed by us, though from General Pitt-Rivers's account we expected them and looked for them. Their absence is consistent with the foregoing conclusions. When the whole settlement was occupied before the erection of the wall, the stream flowed freely between the structures, carrying away the refuse as it was thrown into it. After the wall was built, the structures to the north of it were abandoned, either from their unprotected condition from some threatened attack, or in consequence of their soon becoming inundated owing to the damming of the stream. Those within the wall

appear to have been occupied for a longer period, during which time the refuse remained where it was deposited in the still water, as is shown by the position of the kitchen-middens in the growth of peat.

From the remains of shaped wood and the large quantity of nails found, it seems certain that the superstructures were of timber. No remains of plaster were found. A few fragments of stone occurred, but they were exceptional, and there is no reason to suppose that they had been used for the buildings. From the marks of fire on some of them they had probably formed hearths.

It is also doubtful if the roofs or floorings were of tile,

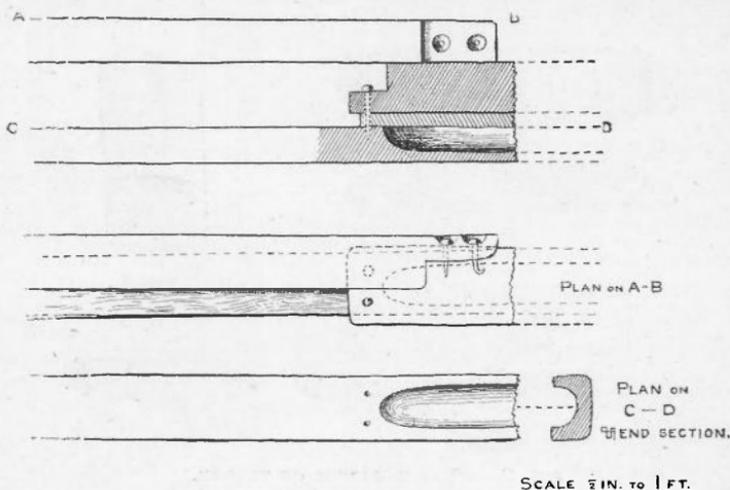
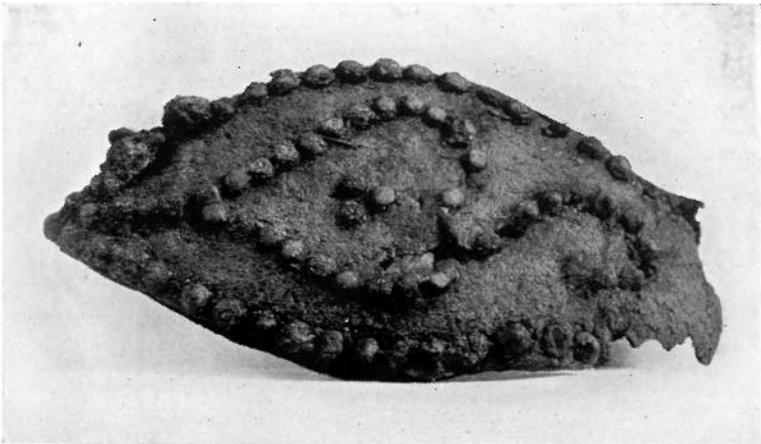


FIG. 10.—WORKED TIMBER FROM STRUCTURE D.

as comparatively few fragments were found and no instance of a perfect specimen occurred. Some of the fragments are of the Roman flanged tile (*tegula*).

Among the shaped wood found on the side of the pit (B in structure D) were some pieces forming the remains of a very curious construction. It was found at the end of some beams which extended through the filling, running laterally with the side of the pit. It consisted of four pieces, one above the other (see fig. 10). The lowest, a beam 8 inches wide, was hollowed with a channel 5 inches wide which ran from the broken end along its length for 10 inches, when it tapered to a rounded end.



1. ENAMELLED FISH-SHAPED FIBULA. 2. PART OF CALIGA.

This was covered with a board $1\frac{1}{2}$ inches thick ; over this came the end of another beam 9 inches wide, in the tenon of which were two large iron nails, which passed through the board and the lower beam, fastening all three together. These had been cut off short in digging the foundations of Finsbury House. The upper beam simply rested on those below ; it had a tenon in which were two countersunk nails, but this probably formed no part of the construction. I am quite unable to offer any explanation of the purpose this may have served.

The relics came mostly from the upper region of the platforms ; they consisted chiefly of fragments of pottery of the recognized Romano-British types, portions of *mortaria*, animal bones mostly broken, oyster shells, *etc.* Red Samian ware was plentiful down to the lowest levels, but generally of the plainer description. This level presented all the usual features of a floor of the ordinary dwelling sites of the Romano-British period. No stone implements and only two flint flakes were found.

There were however, many pieces of vitreous matter and molten glass, also several burnt flints, on some of which were traces of fused material.

These burnt flints are unlike those used for pot-boiling, such as were discovered in the Romano-British villages in Wiltshire.

From these indications it seems probable that some industry was carried on here, but these substances did not occur in sufficient quantities to say this with certainty.

As the earth forming the platforms appeared to be rubbish brought for the purpose, many of the objects may have been gathered up from elsewhere, but on the other hand the fact that the far larger proportion of relics came from the upper portion of the platforms, points to their accumulation owing to the occupation of the site by dwellings. It is, however, difficult to see why such elaborate pains and great labour should have been taken to form a dwelling-place in the centre of a stream when there seems to have been plenty of dry land, at this time, in the locality.

Few of the objects found are remarkable, but they are interesting as affording distinct evidence of the Roman age. The most noteworthy is the fish-shaped enamelled

fibula, which closely resembles one found by General Pitt-Rivers in the Romano-British village at Rotherley.¹ It was found together with an iron *fibula* and a carved bone handle, half-way down the filling of structure C. A lead seal with the letters L V, the lower portion of a bronze seal-case and a bronze ferule were found between the planks of structure A.

Other relics found are an iron flaying knife, a portion of a *caliga*, an iron buckle, portions of a knife, staples

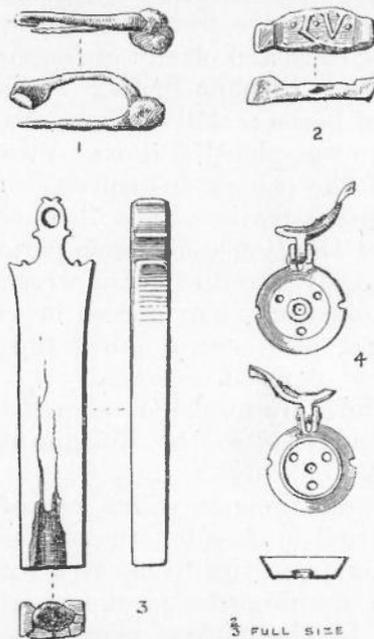


FIG. 11.—OBJECTS FOUND WITH THE PILE STRUCTURES.

and other iron objects. 360 nails were found, one of which is hacked at the sides to prevent its working out of the wood.

There is one object which calls for special remark, and that is the bone implement which is known as “used for pin-making.” Although these implements have been found in great numbers in London, and, so far as I can learn, are not found anywhere else, very little effort seems to

¹ *Cranborne Chase*, II, 118, Pl. XCVII, fig. 8.

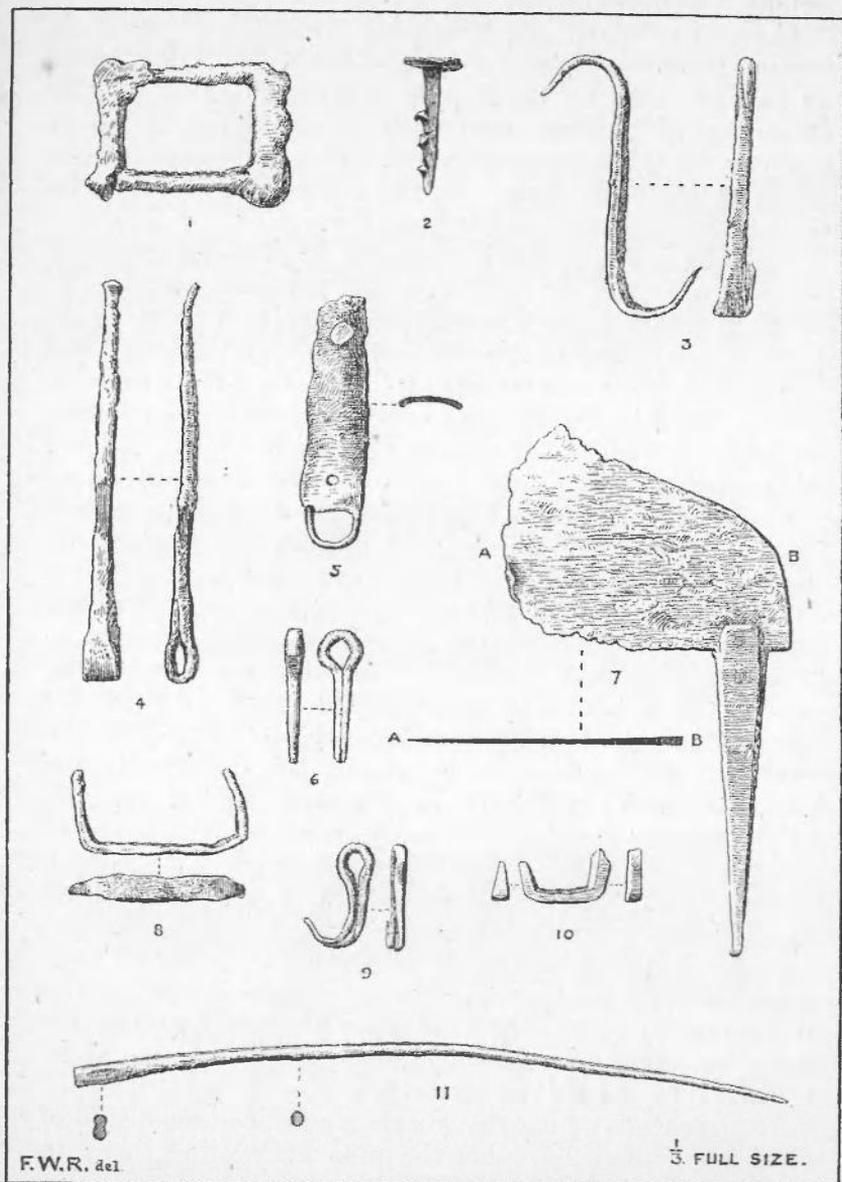


FIG. 12.—IRON OBJECTS FOUND WITH THE PILE STRUCTURES.

have been made to settle the period to which they belong. (Plate III.)

General Pitt-Rivers distinctly refers to them as coming from the Roman level, and rather considers them as earlier owing to their rude construction, but at the same time he classes them with the bone points which are now recognized as mediaeval. Our museums possess large numbers of them, but there does not seem to be one with a properly recorded locality.

The specimen which is here shown (Plate VI, figs. 1, 1*a*) was found by Mr. Kennard in a position which he is confident was well down in the Roman level.

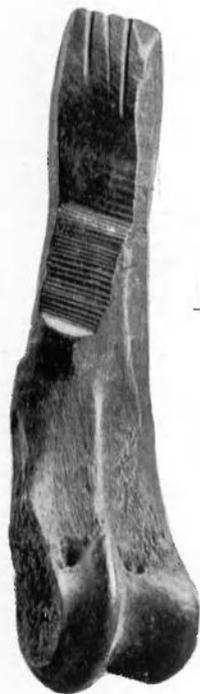
As a good deal of doubt has been expressed on the point, I have endeavoured to get further evidence. During the last few weeks I have obtained three of these implements from Moorfields, the positions of which have been reliably ascertained. Two of these were associated with Tudor objects, the third, from Finsbury Square, was 20 feet deep, and it lay 2 feet down in the gravel, through lying in which it has become iron stained.

As the top of the gravel appears to have been the surface in early Roman times, there seems good reason to believe that this specimen cannot be later than the Roman period, for although it is conceivable that an object of later date might find its way down the soft filling of the river bed or the soil of the swamp, it is difficult to see how this object could have, in this way, got into gravel. As the matter stands it certainly looks as if the use of this implement had survived through a very long period, which is by no means improbable, but it is a point on which further observation is required.

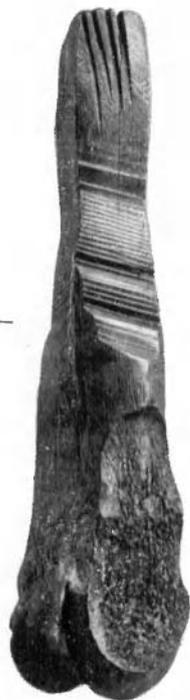
There seems no reason to doubt the use that has been assigned to these objects, as the grooves would serve well to hold a wire, and they all bear file-marks across the facets containing the grooves; some are filed down right into the internal hollow of the bone.

At the present time the working jeweller uses a slab of wood upon which he holds the pins while filing them to a point. The edge of this slab is grooved in a similar manner to the squared portion of these bone objects.

In nearly all instances the projecting processes at the natural end are knocked off, perhaps to allow of their



1



1a



2

$\frac{2}{3}$ FULL SIZE



3

BONE IMPLEMENTS KNOWN AS PIN-POLISHERS.

being fixed in some manner. The specimen found in the gravel at Finsbury Square has retained these processes, but just above are two indentations which have the appearance of having been formed by pressure such as might be caused by a clamp. (Plate VI, fig. 3.)

A bone implement (Plate VI, fig. 2) which also came from the Roman level appears to be a rough example of the same class of objects. The processes at the end have been cut away, but the working portion has been broken, one face only partly remaining. It is interesting on account of the quite unusual manner in which the grooves have been made, these being V-shaped notches cut apparently with a knife. This, if perfect, might prove to be an early stage of the development of this implement.

Another feature of this portion of the stream is the large number of human skulls that have been found. Three were found by us, and their examination is being kindly undertaken by Dr. Garson. They were right on the bottom of the stream; no other human bones were brought to light.

The Guildhall Museum has twelve human skulls from the recent excavations. General Pitt-Rivers found seventeen, and only three bones. On the site of Old Moorfields Chapel, recently excavated, were six, this making in all thirty-eight, to which must be added, "an immense number" as recorded by Roach-Smith.

General Pitt-Rivers has suggested that they might be the heads of enemies with which the inhabitants of the site had decorated their dwelling-place, a custom said to have been practised by the Gauls.

As nearly all these skulls are recorded as coming from the bottom of the stream, it seems that they were deposited when the stream was active and probably tidal. In river deposits skulls of animals are often found in larger quantities than the bones, the reason for which seems to be that owing to the greater weight of the head it becomes detached, sinks in the mud, and is preserved while the body floats away and is destroyed. This reason might account for the large number of human skulls in the Walbrook, only one would then expect to find many animal skulls also, which, so far as I can find, do not seem to have been very plentiful.

Although no coins were found by us, numerous specimens have been found at different times in all parts of the stream. From the instances already cited, it will be seen that Roach-Smith records them on several occasions. Sir William Tite and General Pitt-Rivers both record coins. J. E. Price gives accounts of many finds, some of which are in large numbers. The Guildhall Museum possesses several specimens. There are also several other minor finds recorded,¹ and some that I have seen in private hands are said to have come from sites occupying the bed of the Walbrook. It is interesting and, I think, significant that, from all these sources, the whole of the course of the ancient stream from Broad Street to the Thames has produced no coin later than Marcus Aurelius.

One of Allectus is recorded by Roach-Smith at the Swan's Nest, but this was in a well dug at the side of the stream. When it is remembered that no distinction has been made in relics coming from the upper and lower parts of the Roman level, which at Moorfields is of a depth of 9 feet and in parts of the city still deeper, a deposit representing the accumulation of the entire Roman occupation, this fact becomes the more striking. It seems, therefore, that these coins mark the period down to which the pile-dwellings were occupied, that the subsequent formation of the swamp rendered the ground it occupied uninhabitable, and consequently no later coins have been dropped.

If the evidence which I have put forward is thought sufficient to warrant my conjectures as to the building of the wall having been the cause of the swamp, then we have here some partial *data* at least for placing the wall at a rather earlier period than has generally been supposed.

It may also be well to refer to the discovery of the rubbish pit on the site of the Royal Exchange, concerning which Roach-Smith has written²:—

“The coins alluded to are of importance in this discovery, as affording some notion of the period when the pit was covered in and built upon.

¹ Coin of Aurelius discovered in Liverpool St., *Gentleman's Magazine*, 1843, 520. Coins of Domitian and

Trajan found at Dowgate Hill, 1902, *Antiquary*.

² *Illustrations of Roman London*, 13.



CHARACTERISTIC POTTERY FRAGMENTS FROM THE PILE STRUCTURES.

“They are chiefly of Vespasian and Domitian with one of Severus. As none were noticed subsequent to the reign of the last-named emperor, it may be supposed that the ground upon which the building or buildings were erected was on the outside of the city until at least the early part of the third century.

“The coins prove that the pit was not covered over and made level and fit for houses before the time of Severus; but they convey no such decisive testimony on any posterior occurrence; for this coin of Severus may have been in circulation long after the death of that emperor, although the absence of any coins of later princes may support a conjecture that the extension of Londinium thus far towards the north took place before the middle of the third century.”

Sir William Tite in his account of the same discovery¹ admits the doubtful evidence of a coin of Gratianus “which was lost and subsequently recovered.” He admits that this coin bears “a less particular title” to consideration, but thinks it “probably indicates more exactly the time when the great gravel pit was closed and built upon.” If, however, we reject the testimony of this discredited witness, as Roach-Smith appears to have done, we have in this, taken in conjunction with the coins from the bed of the Roman Walbrook, strong presumptive evidence that the wall was not built later than the early part of the third century, and perhaps by the Emperor Severus.

¹ *Cat. of Antiquities*, New Royal Exchange, xlv and 60.

THE MAP OF THE WALBROOK. PLATE VIII.

The course of the early stream is here represented by the blue streak which approximately shows the width of the channel and the direction taken by the stream as indicated by observations of the filling of its bed that have been recorded at various times.

The positions of tessellated pavements marked 9, 11, 12, and 18 show that the sides of the stream had been embanked and built upon during the earlier portion of the Roman period, probably before the end of the second century A.D.

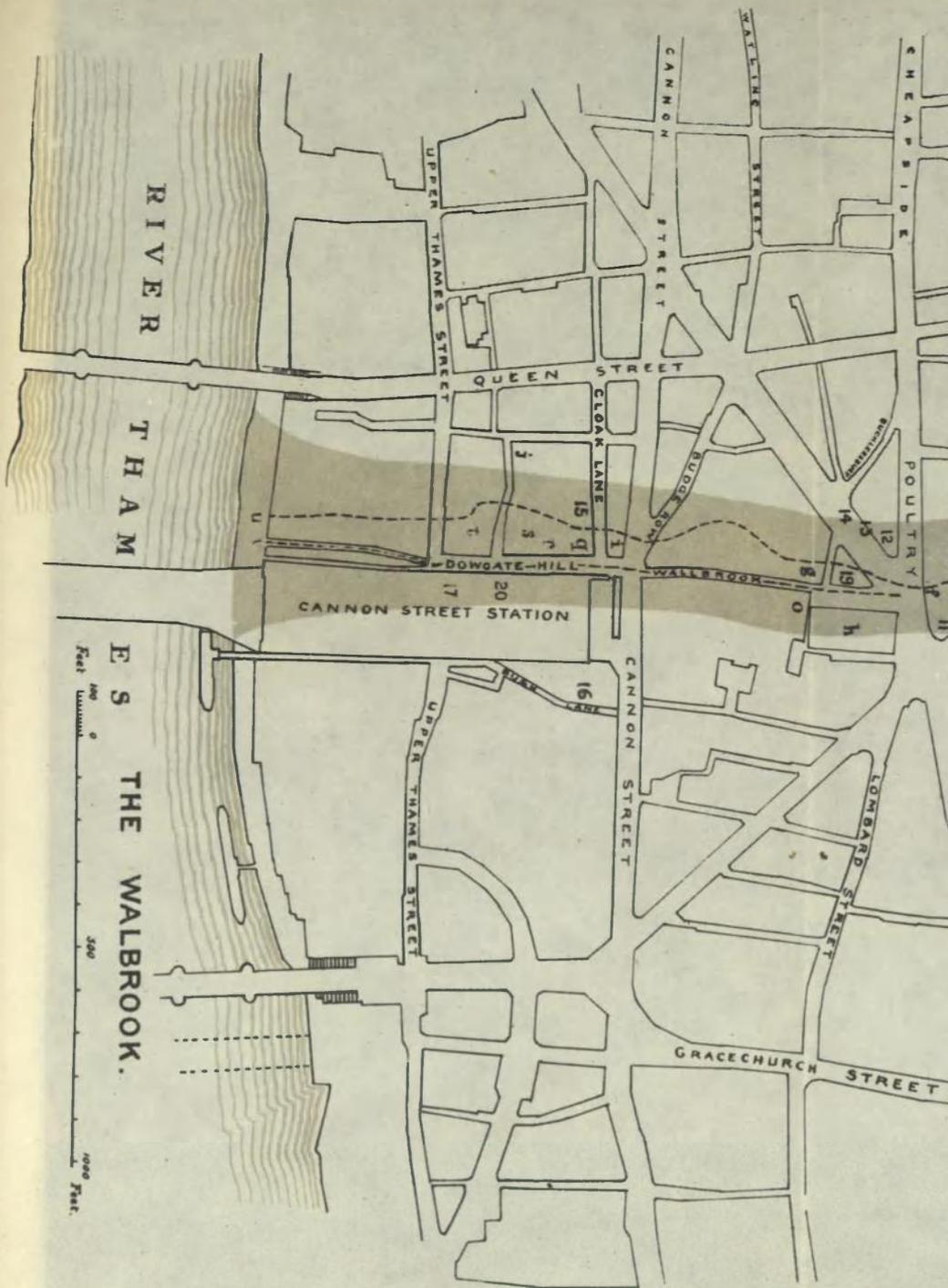
The shaded portion at the south-east of Finsbury Circus (1) marks the site of the recent excavations.

The dotted line running through the length of the blue streak represents the course of the mediaeval stream as described by Stow.

The second dotted line running from the Poultry and terminating at (v) marks the later sewer, which was an open channel as late as 1574, as recorded by Stow (*see* p. 142). It would seem that it was necessary to construct this channel after the covering over of the mediaeval stream, to carry off the flood water, which must have been very excessive on the steep ground south of the Poultry. This later channel extended down Walbrook Street and Dowgate Hill, emptying itself at Dowgate Dock. Finally this also became a covered sewer.

REFERENCES TO MAP.

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|---|---|
| 1. Site of recent discoveries. | a. Site of old Moorfields Chapel. |
| 2. Site of Gen. Pitt-Rivers's discoveries. | b. Finsbury House. |
| 3. Discoveries recorded by Roach-Smith. | c. Church of All Hallows and portion of wall. |
| 4. Urns recorded by Roach-Smith. | d. Church of the Austin Friars. |
| 5. Culvert recorded by Sir W. Tite. | e. Church of St. Margaret, Lothbury. |
| 6. Culvert and little Moorgate postern. | f. Church of St. Mildred, Poultry. |
| 7. Urns found along line of Roman wall. | g. Site of old St. Stephen's and Horse-shoe bridge. |
| 8. Well and Roman remains at Swan's Nest. | h. The Mansion House. |
| 9. Roman pavement, 1805, depth 11-12 feet, now in Brit. Mus., <i>Roman London</i> , 57; <i>Archaeologia</i> , xxxix, 491. | i. St. John on Wallbrook. |
| 10. Remains recorded by Roach-Smith. | j. St. Michael Paternoster. |
| 11. Roman pavement, 1867, <i>Trans. London and Middlesex Arch. Soc.</i> , ix. | k. Tokenhouse Yard. |
| 12. Roman pavement, Bucklersbury, J. E. Price. | l. Site of section 3 (<i>see</i> Fig. 2). |
| 13. Roman well. | m. Site of section 4 (<i>see</i> Fig. 2). |
| 14. Roman walls. | n. Site of section 5 (<i>see</i> Fig. 2). |
| 15. Bed of Walbrook observed by Sir W. Tite. | o. New St. Stephen's. |
| 16. Remains of Roman buildings observed by Roach-Smith. | p. Fragment of City Wall. |
| 17. Roman remains observed by J. E. Price. | q. Chandlers' Hall. |
| 18. Pavement. Founder's Court, 1835, depth 11-12 feet. | r. Skinners' Hall. |
| 19. Roman remains, National Safe Deposit, J. E. Price. | s. Dyers' Hall. |
| 20. Roman pavement, depth 20 feet. Maitland, 1756, I, 17. | t. Inn Holders' Hall. |
| | u. Outfall of mediaeval stream. |
| | v. Outfall of later sewer. |



ES THE WALBROOK.

Feet 0 500 1000 Feet.

