

VII.—EXCAVATIONS ON THE ROMAN SITE AT CORBRIDGE 1946-1949.

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The purpose of this report is to give an account of recent excavations of the granaries, aqueduct and fountain, and to record the discovery of the east rampart of the Antonine fort and the west rampart of the Flavian fort; also to publish an important large group of late second-century pottery found north of the granaries. All these studies have been carried out by the Durham University Excavation Committee since 1946. Treatment of the Antonine and earlier remains north of the granaries is reserved until a further season's work has been accomplished. The account of the structural remains is by I. A. Richmond and that of the pottery by J. P. Gillam.

1. *The Granaries.*

The west granary. This notable building still stands seven feet high, though stone robbers have dealt heavily with the upper part of its walls, leaving only their core, which is now consolidated by H.M. Ministry of Works. The distinctive plan (Pl. XI) of the building unhesitatingly declares its purpose and places it in the well-known series¹ of military *horrea* or storehouses. It has eight buttresses, with seven ventilators between them, on either side. The north wall has three buttresses but no ventilators. The south wall has neither buttresses nor ventilators, but is pierced at the west end by a small opening, once containing a wooden door-

¹ *CW*² xx, 155, fig. 2.

frame and later² walled up, which gave access to the basement during building and will have been useful also as a shoot³ for removing material while the actual excavation of the basement was in progress. When the building was completed it could afford access to cleaners in the event of the ventilation channels becoming choked or obstructed.

In front of the building lay a tetrastyle portico, in which the central intercolumniation was almost twice as wide as those on each side of it, in order to allow carts to back up against a central doorway, for unloading or loading supplies. Fragmentary remains of a loading-platform survived and are described below (p. 155). Of the portico itself three columns and their bases survive and the plinth for a fourth. The column drums are $19\frac{1}{2}$ inches in diameter, while the bases are simplified versions of an Attic base, with double torus but no scotia or refinements. The proportions would suggest an order from 12 to 15 feet high, but stone architraves seem unlikely: the simplest and in these circumstances the most elegant possible finish would be supplied by a timbered roof carrying forward the granary roof itself.

The portico had a long history and its structural vicissitudes are well shown by its relation to the road levels. Its original level, marked by the covered drain which ran in front of the building and upon which rested the remains of the loading-platform, has now no remains of a portico. The existing columns and their bases have been raised, as have the middle pair of the east granary's portico, to the next road level, which is coincident with a total reconstruction of the granary itself, described below. Finally, yet another raising of the street cut off the bases from sight, though the columns appear certainly to have been still standing and the portico yet in use. The street-levels thus related to the portico are all in turn related to well-known features else-

² *AA*³ vi, 213, and fig. 3.

³ For a rubbish shoot in the Basilica of Maxentius, see *Papers of the British School at Rome*, xii, 17.

where on the site. The lowest level, coincident with the drain and the loading-platform, is contemporary with the fountain in its first phase, with the great storehouse on site XI, the Severan street gutter and military compounds with which the entire system of drains on this part of the site is linked (see below, p. 165). The intermediate level is associated with the reconstruction of site XI and the building of the uniting wall which makes one entity of the east and west military compounds. Its end is dated by the masses of small bronze coins thrown out by looters on to the surface of the street. These groups have never been published, but they contain⁴ coins up to Valentinian I, and therefore indicate that the destruction which befell this level was not earlier than A.D. 364: it is presumably the result of the *barbarica conspiratio*⁵ of A.D. 367-8. After this the road was reconstructed once again, and a new stone gutter was laid at its edge. The portico was still standing and although its bases were completely hidden from sight, there is no need to suppose that it was now heightened. There would still be plenty of head-room, especially if the granary was no longer being used for its original purpose and carts did not have to back into the portico.

All sides of the building exhibit the clearest evidence of reconstruction (Pl. XII, 1). The lowest courses of masonry, up to three in number, are very neatly built in rather shallow coursing and long blocks. The upper courses, numbering up to four, are much deeper and are built with nearly square blocks. This difference extends to both faces of the main wall and all the buttresses. On the west side of the building it can also be seen that the change in style corresponds to a complete reorganization of the ventilators and internal flooring. The remains of an almost obliterated system of ventilators can be seen and related to an early flagged floor and longitudinal ventilating shafts below it, separated by seven

⁴ AA⁴ xv, 262.

⁵ Ammianus Marcellinus, xxvii, 8. 1. Britannias indicabat barbarica conspiratione ad ultimam vexatas inopiam.

dwarf walls. The effect is less clear in other parts of the building, because the early floor slabs have been lifted, no doubt to serve in the later flooring. But the two systems of dwarf walls can be everywhere distinguished, because the upper set comprised six walls only and did not therefore correspond to the lower, which were made into a solid platform by packing all the vents between the walls with cobbles closely set in stiff clay. Among this packing was a small group (see fig. 10) of third-century sherds, showing that the conversion took place in the period when these sherds were common as rubbish, namely, in the reconstruction of A.D. 297.

This, however, does not represent the whole of the story. There was a still earlier system of sleeper walls, which the builders of the first longitudinal system had left in position at the north-east end of the granary. Parts of four rows of transverse sleeper-walls are there visible (Pl. XII, 2), with two series of vents passing through them from north to south in order to permit a good circulation of air throughout the system. These vents are connected with a lower system of walls discovered below each granary, which represent the Antonine predecessors of the existing buildings. Their plan is not everywhere ascertainable, but it is very clear (Pl. XII) that they closely resembled the later buildings and conditioned their line.

The front of the building was equipped with a loading-platform, of which the lowest steps are founded upon the earliest street. In its upper part was found the top half of a much weathered altar,⁶ erected by a *praepositus curam agens horr(eorum or -ei) tempore expeditionis felicissi(mae) Britannic(ae)*, which is assignable to the period of the campaigns of Severus. The lower half of the stone was found, in better condition, and had been used to repair the door-sill of the granary itself. Close to it there occurred⁷ the left-hand three pieces of the relief of Dolichenus, of which the right-

⁶ AA³ v, 395-97=EE ix, 1144.

⁷ AA³ v, 311-13: for later interpretation of the piece, see AA⁴ xxi, 181-86.

hand piece was discovered⁸ in 1939 built into the fourth-century foundations of a workshop in the west compound. There is little doubt, then, that these pieces belong to a fourth-century rebuilding of the loading-platform, when it was raised and also widened from $8\frac{1}{2}$ feet to 15 feet, while two steps in the interior were obliterated by the new floor, level with the door-sill and platform top. It thus becomes clear through how many different vicissitudes may have passed the two flooring-slabs,⁹ cut from inscriptions of A.D. 139 and A.D. 140 respectively, which were found in this and the east granary, used or reused in the latest floor of the buildings. These had come from the earliest Antonine buildings, now wiped out. It becomes plain, on the other hand, that the west granary contains two series of floors, while its portico contains three levels. In the first period the basement stood free, high and dry above the street-level connected with it; while in the second period the floor and the ventilators were considerably heightened as was the street and the portico. In the third period, on the other hand, street-level generally was so much further heightened that the ventilators may no longer have been in use.

The east granary jostles its neighbour close, but was built after it, for its footings overlap those of the western building here and there (Pl. xi). Sheltered by the bank of the aqueduct to the east, its remains were even better preserved than those of the west granary. One of its east ventilators retains a central mullion, indicating how all but the smallest animals were denied access to the air-shafts. At a height of six feet above the foundation an external chamfered offset remains, showing that the thickness of the wall was here reduced. Otherwise the building very closely resembles its western neighbour. It is the differences in matters of detail that are worth emphasis.

In the tetrastyle portico the end columns, 30 inches in diameter, were so massive as compared with the middle pair,

⁸ AA⁴ xvii, 108.

⁹ AA³ iv, 262-64=EE ix, 1146; AA⁴ xiii, 274=JRS xxvi, 264.

23 inches in diameter, or with all four at the west granary, that no attempt was ever made to raise their bases, even when the middle pair was so treated. The north-east corner showed signs of weakness, not now, however, apparent to the observer, and was enveloped in a great buttress. This operation entailed a slight adjustment to a surface drain running round the corner of the building. As in the west granary traces of early and later building are to be detected in the main walls, but no visible remains of the earliest ventilator-walls or ventilators are seen. The dwarf walls below the latest floor had removed all traces of earlier systems, except clay and cobble foundations, which were found to have run in two series, one longitudinal and the other transverse, as in the west granary. It seems fair to presume that they were erected in the same order, namely, transverse first and longitudinal second, though actual proof of the fact was not obtainable. The builders of the latest ventilated floor had also introduced a series of massive central piers, either to strengthen the roof or to permit the use of shorter timbers or to support a second storey. In favour of a second storey in the storehouse of a base-depot the recent discovery¹⁰ of a pair of two-storey buildings of this kind at Trier (*Augusta Trevirorum*) and the much earlier discovery¹¹ of two-storeyed establishments of the kind at Rome must be cited. The east granary was also provided with a massive loading-platform, and this embodied both the inscription of A.D. 140 and also the relief of the *vexillum* belonging to the Second Legion. It was the floor of the building which yielded¹² the metope of the Sun-God and the pediment of Pegasus. On the loading-platform was a burnt mass of some fifty small bronze coins, imitations¹³ of the *Gloria Exercitus*, *Constantinopolis* and *Urbs Roma* types, current up to A.D. 369. In the building also many

¹⁰ *Trierer Zeitschrift* xviii (1949), 73-106.

¹¹ G. Lugli, *Monumenti Antichi di Roma e suburbio* i (1931), 144-46.

¹² *AA*³ iv, 262 (inscription), 264, (*vexillum*-relief); v, 321-22 (Sun-god and Pegasus).

¹³ *AA*³ v, 361.

coins were discovered, ranging from Severus to Gratian, a fact which suggests that the edifice, while plainly equipped as a storehouse¹⁴ for most of its existence, was also the scene of transactions which involved small change in considerable quantity. Perhaps the collection of dues or *vectigalia* by the granary tally-clerks, rather than the sale of official stores, will best explain the state of affairs.

The area containing the two granaries is encircled by a surface drain, open at the sides and backs of the buildings, but closed in front. Its purpose was to prevent surface water from gathering in the cutting which contained them and to trap seepage from the surrounding slopes. This drain was an integral part (Pl. xi) of the first plan for the buildings, since it is covered by the early loading-platform of the west granary. It links with the outfalls from the fountains (see below, p. 165) and is in designed relationship to the Severan planning of the site as a whole.

2. *The Aqueducts and the Fountain.*

These structures (fig. 1) are among the most interesting at Corbridge and are rare among Roman military antiquities of the North. Aqueducts, it is true, are increasingly becoming recognized as a feature of established garrison posts and their feed-channels¹⁵ are often recorded. But the delivery-tanks or basins are much less common. Normally, too, the feed-channels lie below Roman ground-level, as the Corbridge example now to be described probably did for most of its course. Where it comes into view on the site as now conserved by H.M. Ministry of Works it is already above ground and is running upon a raised foundation or *substructio*, as the Roman engineers¹⁶ called it. The form of this *substructio* demands attention. It is a solid foundation of freshly quarried rubble set in tough clay and faced on each

¹⁴ Up till A.D. 367 the building still had ventilated flooring in use.

¹⁵ *Proc. Soc. Ant. Scot.* lxxv, 42, for examples; see also AA⁴ xv, 254.

¹⁶ Frontinus, *de aquaeductu Urbis Romae* i, 3 and *passim*.

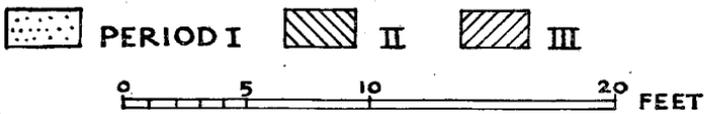
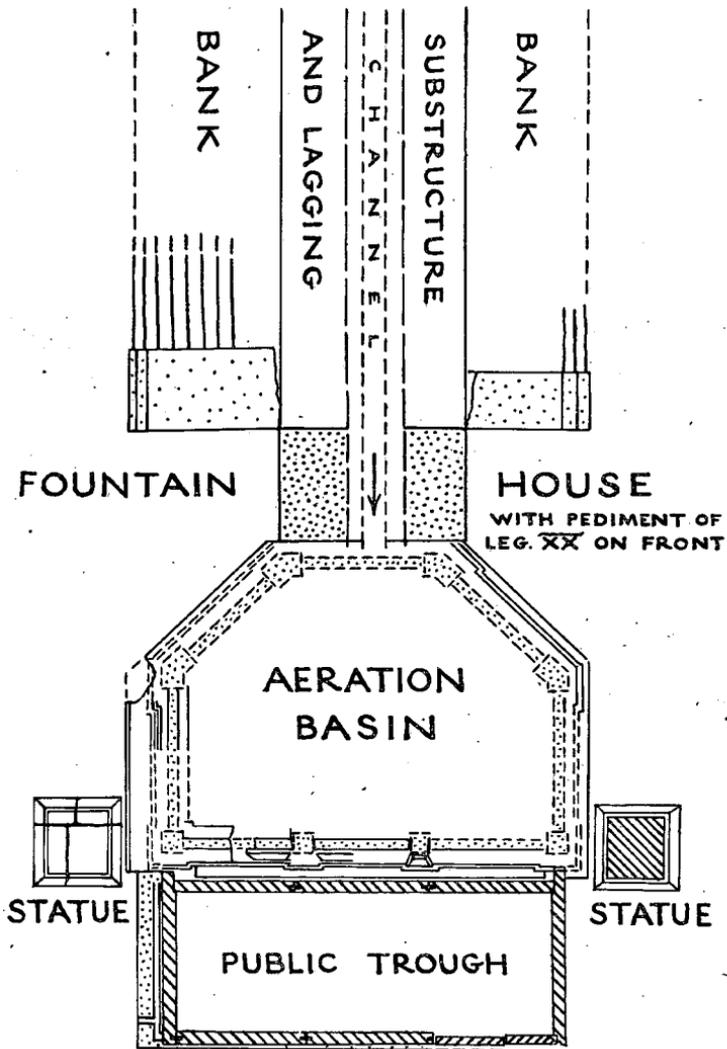


FIG. 1. CORBRIDGE, THE FOUNTAIN.

side in coursed masonry. Along the middle runs a channel, cut in large and carefully laid blocks of stone. This forms the basic element in the aqueduct, namely, the actual channel conveying the water, and it is matched¹⁷ by comparable channels at Chesters, Chesterholm and Birrens. At Corbridge, however, cover-slabs also remain, demonstrating that the channel was covered or enclosed. There is no sign that either the slabs or the conduit channel were set in mortar. The builders chose to use a liberal luting of clay, and their

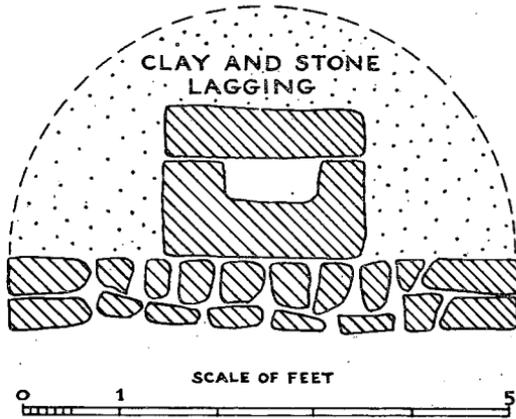


FIG. 2. SECTION OF AQUEDUCT, CORBRIDGE (RESTORED)

choice explains the great width of the *substructio* in relation to the cross-section of the conduit which it carries. In order to keep the conduit free from leaks and safe from frost a considerable thickness of clay sheathing or lagging will have been required and this will have rested upon the *substructio*, covering the conduit with a protective mound.

As the conduit approached the main street it rose well above the surface and had to be built up still higher. The

¹⁷ *Handbook to the Roman Wall* (Tenth edition) 84 (Chesters); *AA*⁴ ix, pl. xxvii, fig. 2 (Chesterholm); *Proc. Soc. Ant. Scot.* lxxii, 307 (Birrens).

covering mound was furnished with stepped lateral revetments of stone, low on the east, where a road flanked the feature and sloped down to join the main street, and high on the west, where the area from which the ventilation-shafts of the east granary received their air-supply had to be kept free from encroachment. The whole structure then terminated abruptly against vertical retaining-walls with stepped ends and the conduit joined the fountain which it was to feed.

The fountain (fig. 1) comprises three portions: the fountain-house, the aeration-cistern and the drawing-tank. The fountain-house was the decorative façade which formed the terminal feature of the *substructio* and disguised its wholly utilitarian design. It rested upon a rectangular foundation which linked the butt-end of the *substructio* with the base of the cistern and measured 7 feet 8 inches across the front and 4 feet 8 inches in depth. None of the dressed masonry belonging to the little building remains in position to-day, but its pediment was smashed and discarded by stone-robbers, who evidently found it useless, and its fragments remain (Pl. XIII, 1). The tympanum was decorated with a wreathed roundel, upheld by winged Victories and containing the inscription¹⁸ LEG(io) XX V(aleria) V(ictrix) FECIT. A pediment so ornate must have crowned a richly treated front, and an Ionic cap and shaft found with it suit its proportions so well that it is difficult to dissociate them. This would imply a shrine-like treatment with distyle front and an inner façade framing the actual orifice of the supply. It may well be that the little fragment of attached baluster on the angle of a small screen-like panel fitted this part of the structure. Again, the two base-moulds, one of which very closely matches that of the aeration tank, while the other is enriched by foliage on the cyma, may very properly be assigned to the base of the monument. Thus, although we cannot now reconstruct this part of the fountain in detail, its general lines are beyond dispute. Immediately in front of the

¹⁸ AA³ iv, 278-79 = EE ix, 1148a.

fountain-house, and splaying out from it, there develops a large cistern (fig. 1), carried upon a base of solid masonry in three courses, each stone being secured to its neighbour by horizontal dove-tail cramps.¹⁹ The cistern was floored in hydraulic cement,²⁰ at a level which would enable the conduit to deliver about a three-foot head of water. This depth for the cistern is consistent with the remains of its outer stone casing, comprising framed decorative panels, of which small fragments were recorded²¹ by Forster in 1908 and have since disappeared. The ornamental screen thus formed was about three feet high and would therefore nicely enclose a lead cistern of appropriate size. The three front panels are of unequal width, the central member being considerably narrower than those which flanked it. This will suggest that the spouts or gargoyles were confined to the two side panels. If the flow of water, arriving centrally, was divided between a pair of spouts a readier circulation and aeration²² of the supply would be achieved and the splayed shape of the back of the cistern is also explained. The need for air and light further explains why there is no provision in the architectural design for roofing the tank (fig. 1).

From the aeration-cistern the water spouted out into a large oblong tank from which it could be drawn by users. The first version of this drawing-tank lay at a lower level than the existing structure, which came into existence at the same time as the portico was added to site XI and the floor of the granary porticoes was heightened. All that remains of the first tank is the western end of its flooring, containing slots in which the upright stone sides once stood. An outfall drain from the east end of the front also survives, and is linked with the main outfall channel feeding the pair of underground tanks associated with the two military com-

¹⁹ No cramps were found in the dovetailed holes, even in examples not previously exposed since Roman times (*AA*³ v, 324). But the fact that slight traces of cement were found (*ibid.*) suggests that some cramps had been supplied and it may be suggested that these were of wood.

²⁰ *AA*³ iv, 274.

²¹ *AA*³ iv, 277, fig. 13.

²² On the need for aeration, see *AA*⁴ xix, 14-16.

pounds. This dates the first stage of the tank securely to the Severan period. The second tank, as is now visible, lay 20 ins. higher, and its introduction coincides with the addition of the pedestals for statues which flank the fountain and add to its decorative effect. These pedestals cannot have been part of the original scheme. The lower part of the base of the west socket was only roughly dressed and was clearly intended to be out of sight, and if it had ever been lowered to the level of the earlier tank this would have involved removing and blocking the surface-water drain on the east side of the east granary. But the drain in question runs undisturbed below it and the pedestal cannot therefore have been added before the level of the cistern was raised. The function of the pedestals as statue-bases is not formally to be proved, but may be inferred from analogies,²³ nor does any recognizable fragment of the statues exist. But a matching pair is demanded, and in that case a pair of Victories seems the most appropriate, echoing the theme of the pediment on the fountain-house. The east pedestal still carries one fragmentary initial of its last line, probably L, as if the stone²⁴ had been dedicated by a legion: while those who wish to be reminded of the surface-level of the site before excavation will observe the numerous scorings of the ploughshare on top of the great stone.

The front and sides of the tank in its existing form show in the most highly developed fashion the progressive wearing down of the stone casing until the tank was eventually no longer capable of holding water and the public must have filled their buckets direct from the spouts. The two lower slabs at the east end of the front appear to represent a repair at a stage when the water-level in the tank had already dropped for this reason by about one third. But the ultimate stage was reached when the wearing down of the side slab on

²³ Cf. *ILS* 5731, *statuas et ornatum piscinales*: cf. 5764: also *Lacus Iuturnae*, in Platner-Ashby, *Topographical Dictionary of Ancient Rome* 312. Cf. Pliny, *Nat. Hist.* xxxvi, 121, on Agrippa's three hundred statues for the fountains of Rome.

²⁴ *AA*³ iv, 276.

the east actually came within four inches of the bottom. No doubt the tank had been lead lined, like its counterpart at Housesteads, for the vertical grooves, on the juxtaposed lateral edges of each slab, which were intended to hold a lead dowel and flashing combined (fig. 3), are clearly visible. It is therefore plain that in course of time a fine piece of masonry and plumbing was so maltreated as to become completely useless—an early example of the attitude of the general public to its own property. The damage itself was inflicted by regular abrasion of the stone in a left-to-right and right-to-left movement which affected different stones differently, producing in some a slight abrasion only, while in others, as already observed, the wear is very severe. When all the effects are considered the explanation that most readily commends itself is that the stones were used for sharpening knives and weapons, particularly swords: for this was an operation which demanded not merely good smooth-grained stone but also a supply of water ready to hand.

The drainage-system associated with the fountain is important. The outfalls from the tank, since the supply was continuously running, would be fed by a continual stream of water, only diminished or discontinued while drawing off was taking place. This waste water (*aqua caduca*)²⁵ was, at all stages in the fountain's existence, led into the drain which carried off surface and seepage water from the area round the granaries (see above, p. 158). The combined flow then passed under the main street obliquely, aiming for the street between the compounds and feeding the two underground tanks there situated with a supply of water that was no longer suitable for human consumption but could be employed for washing or for watering animals. Thence the overflow continued towards the river and whether it was put to further use on its way, as, for example, to such purposes as the flushing of latrines, remains unknown. It is, however, of great importance for the history of the site to observe that

²⁵ Frontinus, *AA*³ ii, 94.

this drainage system links together three of the architectural creations of the period on the site. The granaries supply its start; the fountain affords the continuous flow; the compounds condition the line which it takes and their underground tanks form from the first an integral part of its

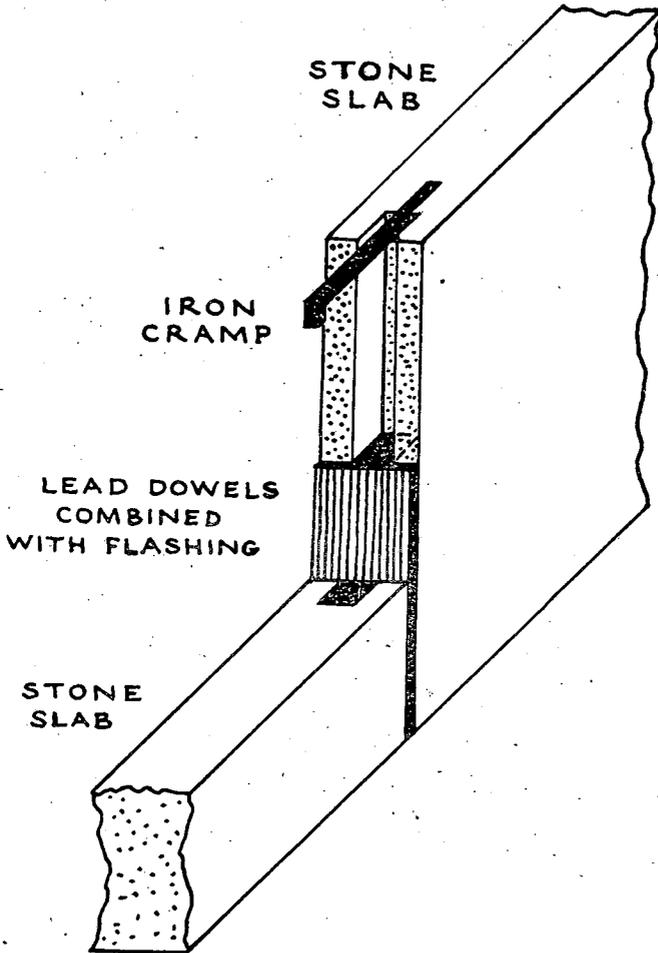


FIG. 3. DIAGRAM OF JOINTING FOR STONE TROUGH, THE FOUNTAIN, CORBRIDGE.

planning. All these structures are therefore parts of a single conception and it becomes clear that the supply-base at Corbridge was not planned piecemeal but that the granaries, fountain and military compounds formed part of one single plan from the first.

The duct for a pipe-line. The east side of the aqueduct is flanked by a ten-foot road, which follows the natural slope of the ground, elsewhere cut back to accommodate the granaries and the great storehouse on site XI, and reaches the main street just east of the fountain. The east side of this road at the north end of the site is marked by a very massive duct which curves round the north-east corner of the storehouse area and appears to have been coming from an east-north-easterly direction. The duct is constructed like a drain or culvert, but differs from either in having no flagging at the bottom to contain its contents and to aid their flow. Further, as the duct passes southwards, it does not keep to one side of the road, as a drain might be expected to do, but reduces its width, as if to aim for the east edge of the fountain. The behaviour of the work is thus not that of a street drain, nor can it be accounted a conduit, because the lack of a finished base will not allow a flow of water. It may therefore be assumed that the purpose of the structure was to act as the duct for a pipe-line, the pipes being at once contained and protected from damage by the massive stone lining of the trench in which they ran. No trace of the piping now survives: the pipes therefore cannot have been of tile, and it is pipes of lead, or, more probably, wooden pipes joined with iron collars that must be envisaged. Wooden pipes of this kind²⁶ normally have a bore of about $2\frac{1}{2}$ inches and a total width of over 6 inches. They would thus well fit the duct under consideration (fig. 8).

The point of discharge lay east of the fountain, where there are remains²⁷ of an additional tank behind the eastern statue-base. But whether the whole arrangement represents

²⁶ Samesreuther, *Bericht der R-G Komm.* xxvi (1936), 137-39.

²⁷ *AA*³ v, 324.

an augmentation or a substitution of the main supply is not quite certain. The pipe-line seems to be coming from the point where late ditches were interrupted for a north gate: and it is commonly supposed²⁸ that late-Roman Corbridge was protected by fortifications, though the precise line and character of the works remain obscure. If, however, such a fortification did exist—and analogies are very strongly in favour of its existence²⁹—then its construction may well have entailed a complete revision of the arrangements for water-supply. In that case, the line of the existing aqueduct might have been planned completely afresh and it should be borne in mind that the pipe-duct runs at such a level as would in all probability preclude it from delivering into any cistern placed upon the fountain platform, so that the fountain itself could not be used if the duct carried the supply of water to serve it. The impression of late date created by the situation of the delivery trough for the duct may thus be regarded as enhanced by general considerations.

Many ornamental fountains and cisterns no doubt existed in the Roman North, even in military establishments. The elaborate panels of Venus at the bath, from High Rochester,³⁰ and of Neptune with attendant nymphs, from Housesteads,³¹ certainly belonged to such structures, as did probably the scene of Venus at the Bath from Maryport.³² Sculptures in the round are also known, as the famous Corbridge Lion³³ and the less renowned Neptune from Chesters.³⁴ At Carlisle St. Cuthbert³⁵ was shown such a basin still in working order—*miro quondam Romanorum opere extractum*—in A.D. 685 and saw a grievously disquieting vision in its depths. But the Corbridge fountain now described is the sole example which

²⁸ *AA*³ iii, 168.

²⁹ Cf. late fortification at Margidunum, *JRS* xii, 251.

³⁰ *NCH* xv, plate facing p. 153.

³¹ *LS* 234 and 170, the latter wrongly assigned to Carrawburgh, for the two fit: Gordon, *Itin. Septentrionale*, pl. xxxix, saw a third piece.

³² *LS* 452.

³³ *AA*³ iv, 204.

³⁴ *LS* 75.

³⁵ Bede, *Vita S. Cuthberti*, 27.

has survived in such a condition that its whole arrangement and, in some degree, its general aspect, can still be understood and appreciated on the spot.

3. *Antonine structures below the headquarters building of the eastern military compound.*

In July, 1946, opportunity was taken to examine earlier levels below the south end of the Severan headquarters building of the east compound as at present exposed. It will be realized that the south wall of this building lies below the tramway encircling this part of the reserved area and is at present out of reach of excavation. The whole width of this part of the cross-hall from back to front was, however, completely stripped, together with a substantial portion of the street in front of it (Pl. xiv).

Two levels of Antonine buildings (Pl. xv, 2) were in fact found, but it is more convenient to describe the lower and earlier level first. Although only a small portion of the early building was examined, it was clear that the rooms discovered formed the north frontage of a long building running east and west, along the south side of an east-to-west street. The long buildings which occupied the north side of this street were discovered in 1937 to extend westwards for at least seventy feet.

The first feature to be discovered and explored was a well-laid red floor (Pl. xv, 1) of *opus signinum*, or cement with an aggregate of broken tile, below the later street in front of the headquarters building. The room to which it belonged measured 11 feet 6 inches from north to south and 13 feet 9 inches from east to west. All the walls had been timber-framed, and their lowest stage at least had been tightly packed with large and remarkably uniform blue cobbles set in tough clay which had collapsed when the wood had decayed. Holes were observed for both main uprights and intermediate supports, the latter flush with the face of the wall, as in half-timbering. There were also indications

of a doorway at the west end of the south wall. This was the first time that walling of this kind had been recognized at Corbridge; but it need not be doubted that the masses of clay and cobble encountered at the same level in 1937 and taken for foundation-work when seen in section did in fact represent remains of this kind of walling, and similar struc-

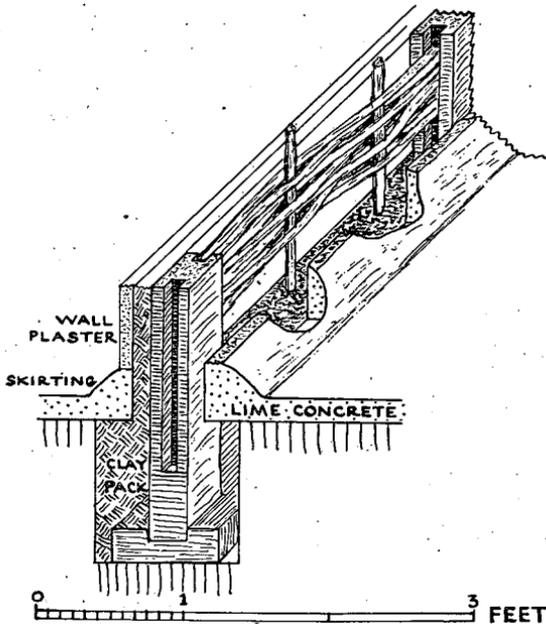


FIG. 4. DIAGRAM OF ANTONINE I TIMBER-FRAMED WALL.

tural remains were again observed under temple I in 1947. In principle, this kind of building is very like the base of a clay wall in the clay-and-cob cottages or "clay daubins" surviving in West Cumberland to-day, though it is not intended here and now to suggest that there is any traceable connection between them.

The east wall of the room just described was a partition-

wall and lay below the cross-hall of the *principia*. The existence of later structures, which it was felt undesirable to sacrifice, prevented a detailed examination of the whole, but enough was uncovered to establish completely the principles of construction (fig. 4). The wall (Pl. xvi, 1) was about six inches wide, and provided with main uprights set centrally at four-foot intervals. The rectangular holes for the uprights remained clearly defined, the southern example measuring 4 inches by 3 inches, the northern $4\frac{1}{2}$ inches by 4 inches, and in each case the longer side of the post was set parallel with the length of the wall. Between these, at 12-inch intervals, occurred round holes for a stout wattle or withy, from $1\frac{1}{2}$ inches to 2 inches in diameter, also set approximately central. These were the verticals round which horizontal osier-work³⁶ (*opus craticium*) forming the core of the wall would be woven; and the reason why the uprights were cut not square but rectangular is revealed as the need for extra thickness of timber on the length in order to take the holes³⁷ bored in them for the reception of the horizontal withies. At the position occupied by the outer face of the wall the *opus signinum* floor was furnished with a plaster skirting which served as the toe of the rendered face. And the complete relationship of core and face was disclosed in its entirety at the north end (Pl. xv, 2) of the partition, beyond the cross foundation of a second-period wall. The earlier partition had here been demolished only perfunctorily, and the core had collapsed westwards, leaving intact the east face of the wall and the holes containing the south end of the central timber-work. The core of the wall was composed of clay and cobble and its face was rendered in lime plaster, sheets of which, fallen from the upper part of the demolished wall, bestrewed the floor. The original structure, however, was a stout and workmanlike building, which was wind-proof, warm and also reasonably non-inflammable

³⁶ For actual remains of such osier-work, see Van Giffen, *Jaarverslag van de Vereeniging voor Terpenonderzoek*, xxv-xxviii, Afb. 41-43.

³⁷ Van Giffen, *Jaarverslag van de Vereeniging voor Terpenonderzoek* xxv-xxviii, Afb. 43.

provided the fire did not get a good hold. Once it did so, nothing could save the building, and that is plainly why Vitruvius³⁸ deplored in such strong terms this type of construction as applied to City tenements.

East of this partition lay a passage five feet wide, followed by a room 14 feet 6 inches wide, with remains of a lime-cement floor much decayed with damp. It was plain that these two units had been divided by a partition wall of similar character to the last. But the remains were here slighter and the skirtings had been reduced to the merest fragments. A main upright (Pl. XVI, 2) was detected south of the later cross-wall and four wattle-holes to north, at one-foot intervals. The spacing of the elements in the framework was thus not uniform as between the two partitions, but a reason for this did not appear. The effect of a doorway upon the regularity of spacing would be an obvious factor to take into consideration. The poorer remains of this wall afforded an opportunity to probe the trench for the foundation-beam or sill: this was 1 foot wide and 1½ feet deep, but whether the uprights³⁹ were simply placed in it and packed with earth, or were morticed to a horizontal beam, was not revealed, though the relative looseness of the packing was in favour of the latter arrangement.

As has already been observed, the floors of the building were of lime concrete, sometimes bound with a tile aggregate and only then tending to survive in good order. When the tile was not present dampness in the soil appears to have rotted the flooring and leached out the lime, making such floors less easy to detect, particularly in section, than might be imagined. This type of floor, however, is very highly sensitive to fire, reddening and blackening easily; and it was interesting to note the pronounced effects of the kind round a small hearth in the west room. Elsewhere no trace of burning existed and it became clear that the building

³⁸ *De Architectura* ii, 8, 20; craticii vero velim quidem ne inventi essent.

³⁹ For uprights thus treated, see J. A. Petch, *Journ. Derbyshire Arch. and Nat. Hist. Soc., N.S.*, xvii, 55-56.

had not been destroyed by fire, but had been systematically demolished in order to make way for the structures of the next period. The change represents deliberate reconstruction, but it can be said with emphasis that it did not follow upon enemy destruction.

The purpose of the building now demands consideration. It was plainly used for human habitation, as the hearth in the west room proves. But the rooms are not the regularly-spaced compartments of the portion of a barrack allotted to other ranks, and this would suggest centurion's quarters, since the building plainly lies amid long barrack-like structures, while these rooms lie at one end of the block. It therefore seemed worth while to explore beyond the building to the east, in order to test whether it was flanked, in the manner usual upon Roman fortified sites; by an *intervallum* road and defences. A straight cut was not possible: but by running between the south side of the apse of the later *principia* and the north side of the apse of the *schola* to south-east an almost straight connection with the area so far examined was maintained (Pl. xiv).

The east wall of the building was $3\frac{1}{2}$ feet thick, corresponding very closely to the 3 feet 9 inches of the north wall. Then followed a gravel road $9\frac{1}{2}$ feet wide, bordered by a deep drain or culvert 15 inches wide, of which stone-robbers had left two courses on the east side and one on the west. The road pitching then continued for another 13 feet and came to an abrupt and definite end. It was, however, covered for the easternmost 8 feet with a heavy deposit of ashes and burnt clay, and was cut by the foundation-trench for a wall 18 inches wide.

The feature against which the Antonine roadway ended so abruptly was a massive bank of well-consolidated clay, still standing just over four feet high. While highly compact and well beaten, the clay, however, was not clean, but contained a good deal of ash and dirt, as if derived from a previously occupied area. This would not be surprising in a feature laid down at the beginning of the Antonine occupa-

tion, when the site had already been occupied for some forty years and if clay was being stripped from the surface. For it must be borne in mind that the Antonine builders could not avail themselves of the Flavian rampart material, which was turf and therefore unsuited to being broken up and used elsewhere. There can be no doubt, then, that the bank discovered represents the back of the Antonine defensive rampart, while the ash and burnt clay associated with a wall-foundation represents one of the cook-houses set into or against the back of such a rampart in regular Roman fashion.⁴⁰ A pitched foundation was also detected, but this did not extend right to the back of the rampart and that again is a feature of such structures. The whole bank was traced forward for 11 feet, when it disappeared below the wall of the Severan compound which here forms the limit of the area available for excavation. It was therefore not possible to identify the front of the rampart, which presumably lay some distance east of the Severan wall since it is not likely to have been less than 20 feet thick and may have been very much larger.

Notable traces of earlier occupation were detected below the rampart, though it will be recalled that this area lies to south of the defences of the Flavian fort and therefore among the *canabae* of that period, and remains consistent with extramural settlement have already been noted below the headquarters building of the west compound. The most striking feature was a pit, over three feet deep, which produced a *denarius* of Domitian,⁴¹ while just to westward lay a sleeper-trench, 15 inches square in section. A trial hole 11 feet further west revealed an early occupation layer. It was, however, difficult to reach these earlier levels without destroying later structures which it seemed undesirable to remove. Contact with the early levels was therefore made only once again, below the office-room of the Severan *principia*, where the lime-concrete floor of the first Antonine

⁴⁰ *Arch Camb.* lxxxv, 155.

⁴¹ Kindly identified by Mr. W. P. Hedley.

period was so ill preserved as to warrant its removal. Elsewhere these floors were left undisturbed.

The buildings of the second Antonine period, sandwiched between the first Antonine buildings and the Severan levels, had not fared so well as the former in the matter of preservation. It was clear that they had followed a different plan from those of the first period, and that they had used for their foundations not cobbles but freestone rubble. A wall of this construction, accompanied by well-defined cement flooring, ran right across the west room and the intermediate passage, above the east partition of which lay a doorway with well-trodden flagged threshold (Pl. XIII, 2). Rooms of the same period, with floors made of beaten clay or of cement, ran right across the street to north of the first Antonine building. On the east, again, the limits of the two buildings were not the same, for here the first Antonine clay-and-cobble wall was covered by a massive street. The east wall of the second Antonine building apparently lay below the east wall of the Severan *principia*, for the street continued thus far and did not emerge to west of it. Specific traces of walling were not, however, observed and it is very possible that they had been lifted wholesale by the Severan builders.

The street just mentioned continued eastwards, broken by a robber trench following the conduit already described and forming good evidence for the activities of Severan builders in search of stone. Beyond the robber trench the road surface remained intact, covering the remains of the early Antonine cook-house. Then it ended as abruptly as the first road against the back of the Antonine rampart. It is thus clear that in both periods the rampart formed the eastern limit of the roads, which may now be recognized as *intervallum* roads and that this was throughout the Antonine period the eastern limit of the fortified site.

CORBRIDGE 1947

SECTION OF FLAVIAN WEST RAMPART

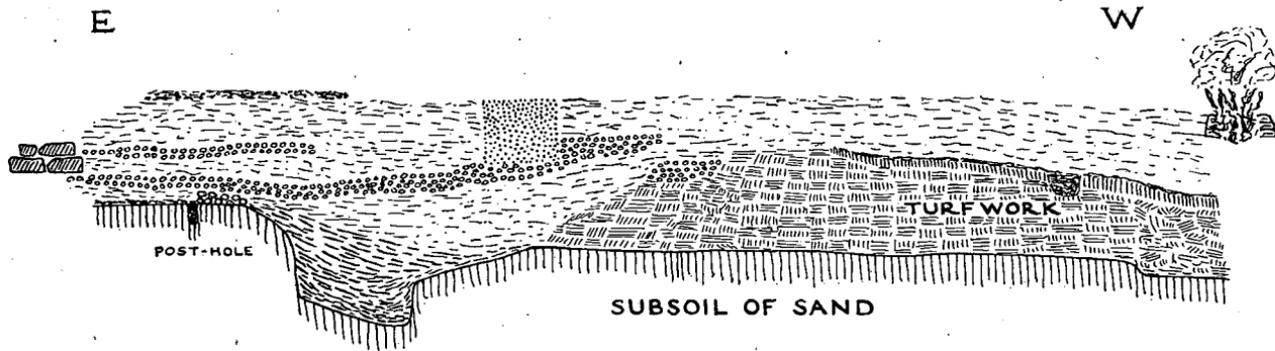
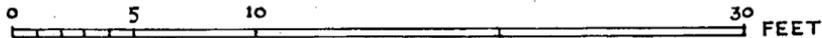


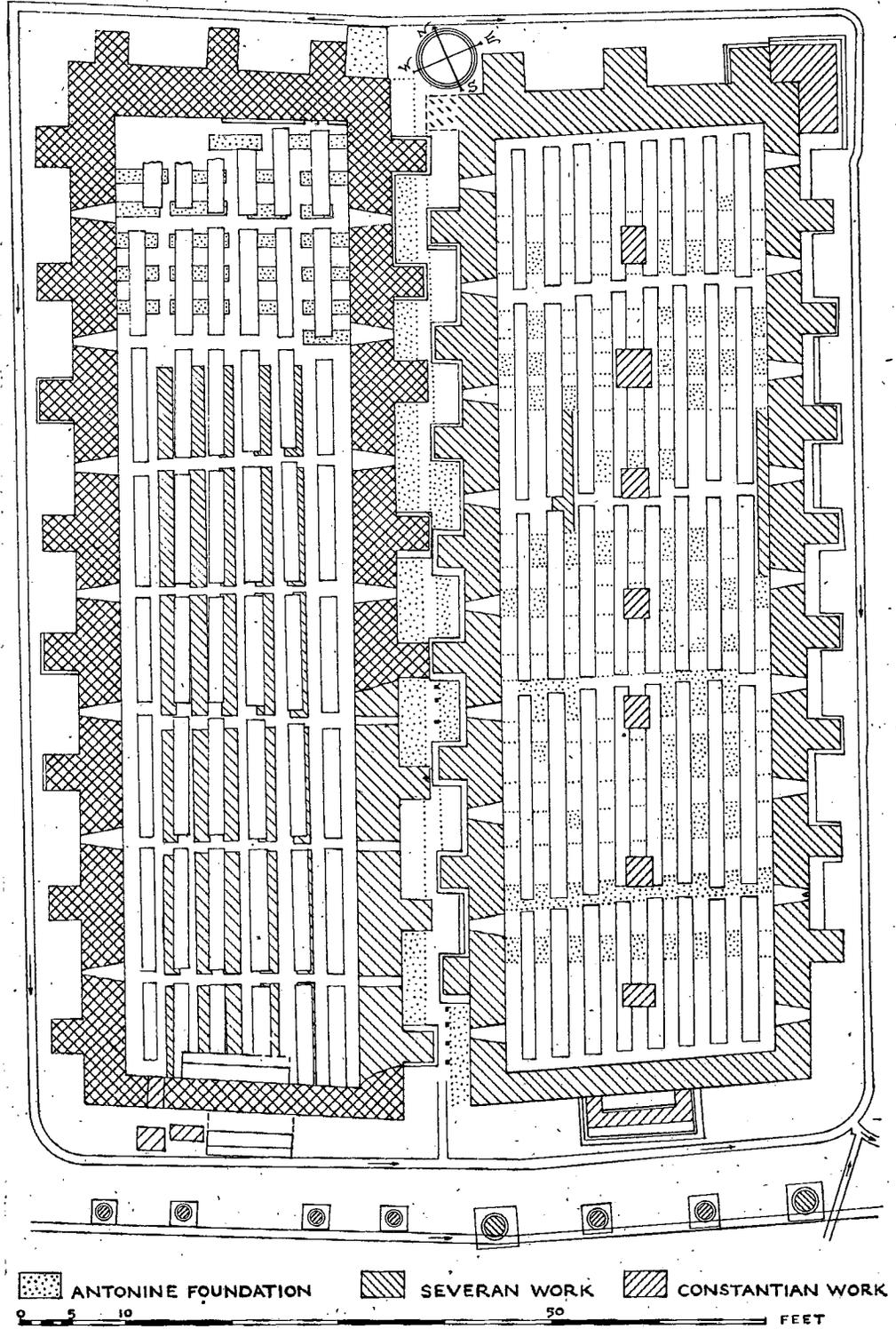
FIG 5.

4. *The west rampart of the Flavian fort.*

During the autumn of 1948, while preparations were in progress for the erection of a prefabricated building, on ground lying to the west of the granaries and immediately north of the existing museum, a trench was cut across the area of the proposed site for the new building in order to make sure that nothing of prime importance for exhibition should be covered by it. The line chosen for the section (fig. 5) lay opposite the north-west corner of the west granary and the cut commenced at the north-to-south wall 11 feet west of that building.

The wall exhibited two courses, with a pronounced offset on the west side and was associated with a gravel road 10 feet wide. Below this lay another road-surface, underlying the foundations of the wall just mentioned, and this continued westwards for 26 feet. The levels above the roads had been thoroughly disturbed and no significant material came from the short and thin sealed layer between them. The layer below them, however, was rich in Flavian-Trajanic pottery, including the rim of a grey jar, two fragments of small orange-coloured jars with sharply everted rims, three mortaria and an orange carinated bowl with reeded rim and girth grooves. This scattered material was associated with an occupation-layer containing a small post-hole and a cobble foundation, both in contact with the gravel subsoil. Then came a deep pit, with vertical east end and stepped west end, which yielded fragments of thirteen vessels including two pieces of rustic ware in light grey and orange fabric, one fragment of Samian ware of Dragendorff's shape 18, a South-Gaulish cup of form 27, a dark grey jar of hard pre-Hadrianic fabric and two rims from orange-coloured vessels imitating Dragendorff's form 29. There is no doubt that this is a Flavian-Trajanic deposit, without admixture of later wares.

Almost immediately west of the pit occurred the heel of a well-preserved turf rampart, extending westwards for 24 feet. It still stands 4 feet high, and is in that respect com-

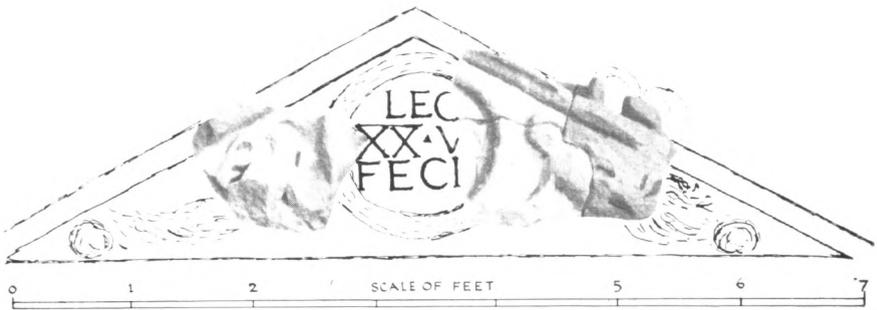




1. WEST GRANARY, CORBRIDGE: WEST WALL, WITH MASONRY AND VENTILATOR OF TWO PERIODS.



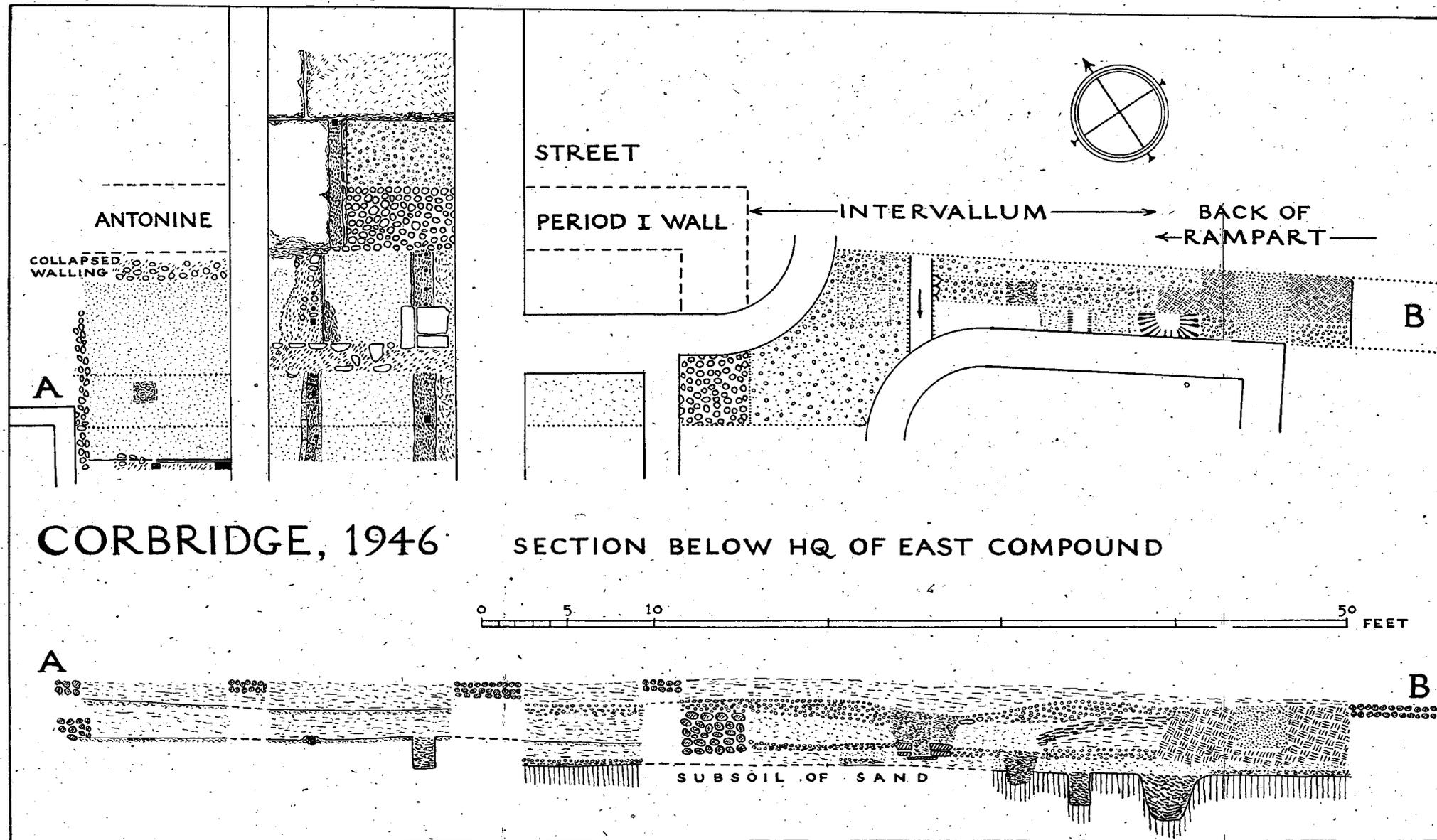
2. WEST GRANARY, CORBRIDGE: ANTONINE TRANSVERSE VENTILATION-SHAFTS, COVERED BY SEVERAN LONGITUDINAL SHAFTS; ALSO VENTILATORS OF SEVERAN AND CONSTANTIAN BUILDING SUPERIMPOSED, AT N.E. CORNER.



1. THE FOUNTAIN, CORBRIDGE: FRAGMENTS FROM PEDIMENT OF THE TWENTIETH LEGION, RESTORED.



2. ANTONINE BARRACK-BLOCK, CORBRIDGE, LOOKING NORTH. TWO ANTONINE LEVELS, SUPERIMPOSED.





1. ANTONINE BARRACK-BLOCK, CORBRIDGE, LOOKING SOUTH. *Opus signinum* FLOOR, WITH CLAY-AND-COBBLE WALLS, PLASTER-FACED AND TIMBER-FRAMED.



2. ANTONINE BARRACK-BLOCK, CORBRIDGE: CLAY-AND-COBBLE PARTITION, SHOWING PLASTER FACING (FALLEN AND *in situ*) AND HOLES FOR WATTLES.



1. ANTONINE BARRACK, CORBRIDGE: W. PARTITION, LOOKING S., WITH HOLES FOR TIMBER-FRAMING AND WATTLES AND PLASTER SKIRTINGS.



2. ANTONINE BARRACK, CORBRIDGE: E. PARTITION, LOOKING NORTH, SHOWING HOLES FOR WATTLES AND REMAINS OF PLASTER SKIRTINGS.

parable with the Flavian turf rampart⁴² 3 feet high, discovered in 1937 at the north end of the east wall of the west military compound. Like that rampart it has no bottoming, but is laid directly upon the undisturbed sandy subsoil. The front of the work was difficult to define, the turfwork having been squeezed forward under pressure from later superincumbent layers: and a tendency to collapse and to weather had in any case to be taken into account. But at 24 feet the characteristic lamination had ceased and there was a downward step in the subsoil, as if the berm had here begun and its surface had weathered off at the toe of the rampart. Beyond this point, however, there was no room to search for a ditch in the small interval between this feature and the hedge.

It is, nevertheless, plain that we here reach the western limit of the Flavian fort. The intervallum road is not apparent, and must have lain further east. But the post-hole, cobble foundation and great pit are in a sense representative of the miscellaneous structures common to the intervallum proper, and while their detailed interpretation is not possible there is no doubt as to their general significance. It is also of special interest to observe that the two later roads which seal the Flavian deposits also appear to be related to the back of this rampart, as the Flavian and Antonine defences had coincided at this point. There is, however, no trace of any Antonine rampart, and it will be wise to await further evidence before drawing so important a conclusion.

5. *A deposit of coarse pottery dated to circa A.D. 200.*

Introductory. In 1945-46 the topsoil was removed from the area north of the two granaries at Corbridge. This revealed a patch of rough stone flags 18 feet wide from north to south, and 35 feet long from east to west. The south edge was parallel to and 47 feet north of the surface drain which

⁴² AA⁴ xv, pl. xiv, 1.

runs east to west along the north end of the pair of granaries (Pl. XI). In May, 1947, a trench, four feet wide was dug along the south edge of this flagged area. Below the level of the flags, though not sealed by them at this point, lay black earth, to a depth of 18 inches, and in it 1,300 fragments⁴³ of pottery, many of them large and well preserved. At the beginning of the annual training excavation in the following month the flags were recorded and removed. The deposit was found to continue beneath them, and a further 3,000 pieces⁴⁴ were recovered. This report deals with a selection of pieces from this deposit, that is with pottery sealed by the stone flooring, or continuing in an undisturbed mass immediately to the south.

The stratification of the undisturbed deposit may best be understood by briefly considering all that was subsequently found to underly it. Working upwards, the stratification was as follows:

(i) The subsoil, cut by post-holes and sleeper-trenches of the first occupation which probably began in A.D. 79.

(ii) A room of a building with internally plastered wattle and clay walls and a thin concrete floor. This is datable to *circa* A.D. 100. That the building had fallen into decay, before being covered by the next subsequent structure, was shown by blown sand and fallen plaster and roof tiles bestrewing its floor.

(iii) A room of a building, unrelated in plan to the one that preceded it, with a thick concrete floor, repaired or altered at least once while the building was still in commission. This was probably erected in A.D. 139 or 140; it was carefully demolished before it was covered by the next level.

(iv) A layer of gravel, probably laid down in A.D. 163; on this lay 18 inches of black earth containing much rubbish—animal bones, iron implements, boot soles preserved by

⁴³ In the collection at the museum on the site, these pieces are marked XII A, 5/47, or XII A, L.II.

⁴⁴ In the collection at the museum on the site, these pieces are marked XII B 6/47, or XII B, L.II.

the oxidization of the studs, bronze dross from smelting and the pottery dealt with below.

(v) The flagged floor referred to above.

It is quite certain that the pottery found its way into the place where it was discovered between the time that the gravel was laid down (probably in A.D. 163), and the time that the stone floor was constructed. As the stone-flagged floor represents the next subsequent period of building to the later Antonine replanning of the site it is probably datable to the Severan reconstruction, though formal proof of this is not possible. The character of the deposit is significant. It was exceptionally rich—at least 500 separate vessels were represented. In this respect it contrasts strongly with the occupation deposits of the earlier Antonine period at Corbridge, in which pottery is scarce. The present deposit is homogeneous in character; as the sections reveal, there is remarkably little variety of shape among the vessels of any one class. One large and fragile vessel—no. 9—was complete and undamaged, two smaller and stouter vessels—nos. 92 and 93—were also undamaged, and several vessels were complete, or almost complete, but broken into a small number of large fragments. Such a rich homogeneous deposit, including complete vessels, suggests a disaster. The destruction of the site by the Caledonii and the Maeatae in A.D. 196 or 197 falls within the limits set by the stratification. It seems then reasonably certain that the deposit consists of the remains of material left behind by the troops who followed Clodius Albinus to Gaul in A.D. 196.

There are, however, other considerations. The pottery was not all found lying directly on the later-Antonine gravel layer, but at all levels between the gravel and the flags. A complete skull of a horse was found as it were suspended between gravel and flags; the complete poppy-head jar lay several inches above the gravel. While several vessels were unbroken or reasonably complete, far more were represented only by fragments. Some of the fragments of decorated Samian ware joined on to fragments found many yards away

from the site of the present deposit, before 1914, while others joined with pieces found during 1947, at the same general level, in somewhat disturbed contexts further north towards the boundary fence. These facts in no way lessen the value of the deposit or the probability that it is composed mainly of vessels in use in A.D. 196. But the pieces were clearly not lying where they had been abandoned or thrown during the sack. It is clear that those who reconstructed the damaged site early in the third century had used this mass of earth and rubbish, much of it doubtless perishable, as packing below the new structures. They were in fact levelling up this part of the site, just as they cut away other parts, the site for the large storehouse, on site XI, in particular. The precise date of this operation is not known. It was after the Maeatae destroyed the site, but it is only an assumption that the reconstruction on this part of the site was contemporary with the building of the granaries and storehouse before the campaigns of Septimius Severus in Scotland. It is not an unreasonable assumption, but the distinction between observed facts, inferences and assumptions must be maintained. It is, then, an observed, and important, fact that all the pottery dealt with here was found together in one stratified group. By considering the stratification, the character of the deposit as a whole and the known history of the site, but without reference to the typological date of the pottery itself, the conclusion that the deposit was due to the Severan builders seems reasonable.

Such a deposit cannot contain any pottery made after the early years of the third century. It is likely to contain:

- (a) a few vessels broken by the builders themselves,
- (b) large numbers of vessels broken or abandoned intact in A.D. 196 or 197, while they were still quite new or currently in fashion.
- (c) a much smaller number of vessels that had survived in use long enough to have become noticeably old-fashioned.
- (d) a number of vessels already long broken and thrown away during the occupation before the disaster. This is not

likely to be a large group, for the Antonine occupation-deposits are not rich; broken pottery was deposited in rubbish pits on the outskirts of the site. But there is always the possibility of strays from an earlier occupation being present in any deposit—in the present instance even from the Flavian occupation.

Typologically (*a*) and (*b*) would be indistinguishable from each other, while only the condition of the fragments would distinguish survivals (*c*) from strays (*d*).

A review of the material shows that in this deposit the bulk of the vessels of any one class are closely similar to each other. It is therefore possible to pick out a small number of types which are characteristic of the deposit as a whole, and represent the majority of the vessels in it. Nos. 1, 9, 22, 28, 44, 50, 51, 80 and 84 are typical. These presumably represent the groups (*a*) and (*b*)—pottery fashionable in or shortly after A.D. 196. There is, however, a smaller number of vessels within most of the classes which do not conform to type. A few of these are explicable as imports from other regions, but the rest are probably earlier types—the strays and survivals of groups (*c*) and (*d*). Nos. 13, 49, 66, and 81 are typical. Long-term strays are represented only by three worn scraps of rustic ware, each from a different vessel; these have not been drawn. Though doubtless there were also other Flavian scraps, in less distinctive fabric, that were not recognized, the proportion among the total of more than 4,000 fragments is remarkably small.

If the dating is correct it means that the present deposit is the richest sealed group of pottery of *circa* A.D. 200 yet encountered in northern Britain. As the dating depends on the stratification, and on the general character of the group, it is not necessary to quote parallels.

The Deposit. The total number of fragments was about 4,300. The number of separate vessels was at least 500; and, in order to avoid the risk of counting the same vessel twice, those represented only by wall fragments are not included in the total. The proportion of Samian-ware vessels

to coarse pottery vessels was about 1 to 4. The four commonest types of Samian ware were Dragendorff's forms 31 or 18/31, 33, 27 and 38, in that order. The commonest decorated form was 37. The relative percentages of classes among coarse wares (worked out on the same basis as those of the total number of vessels) is as follows:

Cooking pots and wheel-made cooking pots	37
Platters and bowls with flat or down-turned rims	27
Mortaria	10
Rough-cast, Castor and similar fine wares	5
Plain and bead-rim platters	4
Beaker- <i>ollae</i>	3
Unusual pieces	3
Medium jars, other than cooking pots	2
<i>Amphorae</i>	2
Flagons	2
Bowls, other than chamfered bowls and mortaria	2
Narrow-necked jars	2
Lids (fragmentary)	1

The 93 vessels selected and drawn include all the well-preserved pieces of coarse pottery, and the selection is representative; the absence of a type from the drawings means that it is absent from the deposit. The absence from the drawings of any piece of Flavian type corresponds to a total absence of Flavian pieces, except for the scraps of rustic ware, to which reference has been made. The absence of any piece, for which a date after the early years of the third century might be claimed on typological grounds, was one of the striking features of the deposit.

The coarse pottery, including all the mortaria, sufficiently well preserved to draw, whether stamped or not, is first described and discussed. Then follows a list of stamps on *amphorae*, plain Samian ware, and mortaria; some of the mortaria thus figure twice. The coarse pottery is dealt with by classes, in that order which proved useful for classifying

finds. The general order is from bulbous narrow-necked vessels to flat open vessels, as follows:

Flagons,
Narrow-necked jars,
Medium *ollae* and cooking pots,
Mortaria,
Bowls,
and Platters.

It has been found that in practice the straight-sided or chamfered bowls and platters (some students use the term dish) fall quite easily into two distinct groups. The deeper ones, for which the term bowl is used, are considerably *less* than three times as wide as they are high. The shallower ones, for which the term platter is used, are considerably *more* than three times as wide as they are high. Very few vessels are exactly three times as wide as they are high. If the height is expressed as a percentage of the diameter the resulting figure may be called the proportion of the vessel. The bowl normally has a proportion of *circa* 40, while the platter normally has a proportion of *circa* 20. The figure 33 forms a convenient dividing mark between the two classes. There does not appear to be any chronological significance in the proportions, but the distinction is simple and useful for classification.

DESCRIPTIONS OF SHAPE AND FABRIC.

SINGLE-HANDLED FLAGONS.

1. Neck of flagon with flanged lip; a flat handle, now broken away, has joined below the flange. Course pinkish-buff fabric, similar to that of the locally-made mortaria⁴⁵ nos. 51-53 below. The piece is coated with a dark orange slip similar to that used above the stamps of the potters CUDRE and SATURNINUS (II). A fragment from a second vessel is identical in form but lacks the orange slip.

⁴⁵ Analysis of the clay has shown them to have been locally produced. A full report on the methods used will be made when the experiments have been completed.

2. Neck of flagon similar to no. 1, and in identical fabric.
3. Neck of flagon, with hollowed mouth and grooved band round the lip, in a hard, smooth, fawn fabric, self-coloured.
4. Neck of flagon in smooth, white fabric with traces of thin orange slip.
5. Neck of flagon with four-ribbed handle; fabric identical with nos. 1 and 2.

No complete vessel of the class survived. Nos. 1-5 are the only examples from the deposit sufficiently well preserved to be drawn. The so-called screw-necked flagon was absent from the group: it is still found in Hadrianic and early Antonine deposits, in a developed form. The similarity between the fabric of the above flagons and that of contemporary local mortaria suggests that both classes of vessel were made by the same potters.

NARROW-MOUTHED JARS.

6. Rim and wall of a narrow-mouthed jar, with horizontal grooves and a lightly-scored wavy line on the shoulder, in a hard, fine, reddish-brown fabric, grey in fracture.
7. Rim of narrow-mouthed jar, with undercut overhanging lip, in a hard, smooth, unpolished grey fabric.

MEDIUM-MOUTHED JAR.

8. An almost complete jar, with rim ledged internally at the neck, in a hard, gritty, brick-red fabric, pinkish-grey in fracture. Both shape and fabric are slightly reminiscent of Derbyshire ware. The vessel is sooty and has been used as a cooking pot.

UPCHURCH-WARE JARS.

9. Poppy-head jar, decorated with regular rows of applied self-coloured dots, in fine blue-grey fabric, with black polished surface. It was found complete and unbroken.
10. Almost complete poppy-head jar, found broken, in a fabric similar to no. 9.
11. Rim and shoulder of poppy-head jar, in a fabric similar to no. 9.
12. Rim and shoulder of poppy-head jar, in a fabric similar to no. 9, but without decoration.

COOKING POTS.

The term cooking pot is used here to describe all vessels of the *olla* class with the following features:

- (a) thin walls,
- (b) plain cut-away base—where this has survived,
- and (c) black or grey fumed fabric.

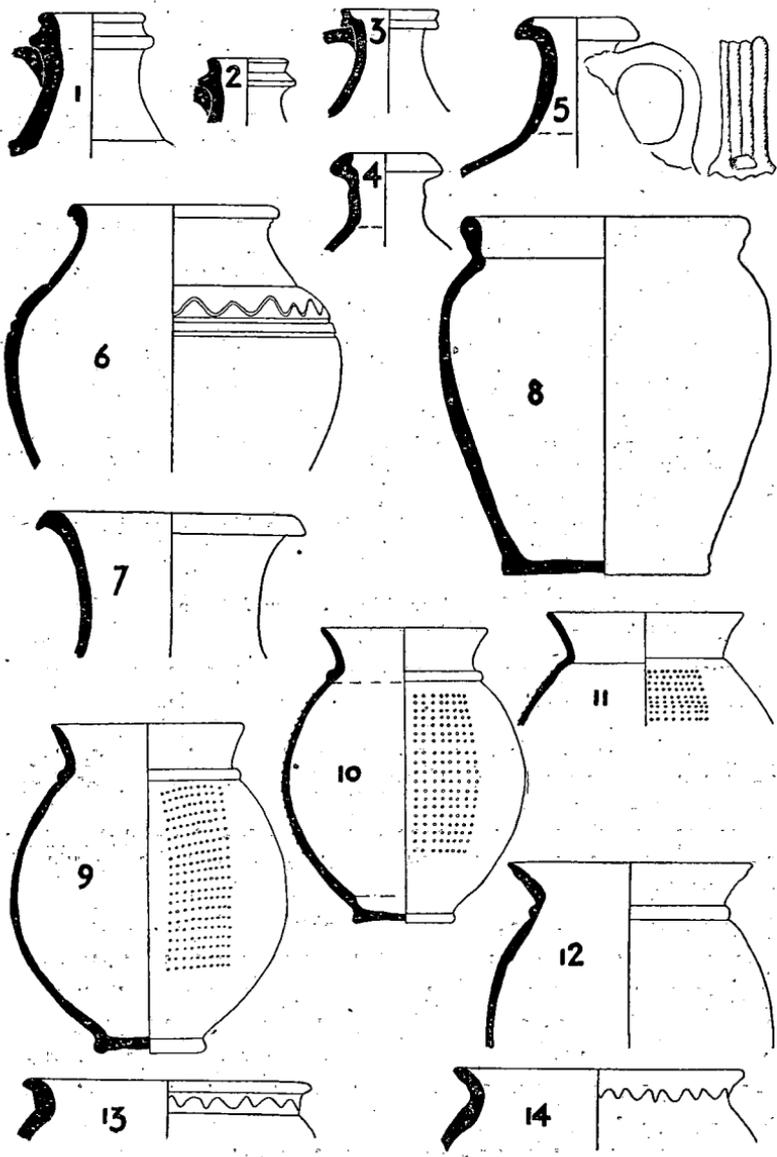


FIG. 6. (scale $\frac{1}{4}$)

BRITISH MUSEUM

Nearly all the cooking pots in the deposit had been wholly wheel-made, though few show the internal rilling common on wheel-made vessels. Most of the cooking pots are smoothed or lightly burnished externally above the zone of decoration; the surface of separate vessels is not therefore described in detail unless it is unusual.

13, 14, 15 and 16. Each a rim and shoulder fragment of a black-fumed cooking pot with beaded rim and a lightly-scored wavy line on the neck. There is soot on nos. 14 and 16.

These four vessels differ from each other in shape, but have in common a wavy line on the neck and dense black fabric. This combination of features is characteristic only of cooking pots of the second and third quarters of the second century. Vessels with these characteristics were in a minority in the deposit.

17. Rim and shoulder of a black-fumed cooking pot. There is no wavy line on the neck; the cross hatching is acute-angled. There are traces of soot on the rim.

18 and 19. Each a rim and shoulder of a black-fumed cooking pot, without a wavy line on the neck. The base of no. 18 has been restored.

20. Rim of a black-fumed cooking pot, without a wavy line on the neck. There are traces of soot on the rim.

Like nos. 13 to 16, nos. 17 to 20 are typologically earlier than the bulk of the cooking pots in the deposit.

21. Rim and wall of a wheel-made cooking pot, in smooth, fine, hard, light-grey fabric, with pinkish tinge. There are traces of soot on the surface.

22, 23, 24, 25, 26, 27, 28, 29, 30 and 31. Each a rim and shoulder fragment of a wheel-turned cooking pot in smooth, fine, hard, light-grey fabric.

The eleven vessels, nos. 21 to 31, represent the characteristic cooking pots of the deposit. The fabric is similar to that of the bulk of the associated bowls and platters; it differs from the dense black and slightly-gritty fabric of Hadrianic-Antonine cooking pots, bowls and platters, and from the soft grey fabric with darker surface of Trajanic-Hadrianic jars and carinated bowls.

The shoulder is bold and rounded; the rims vary between two types:

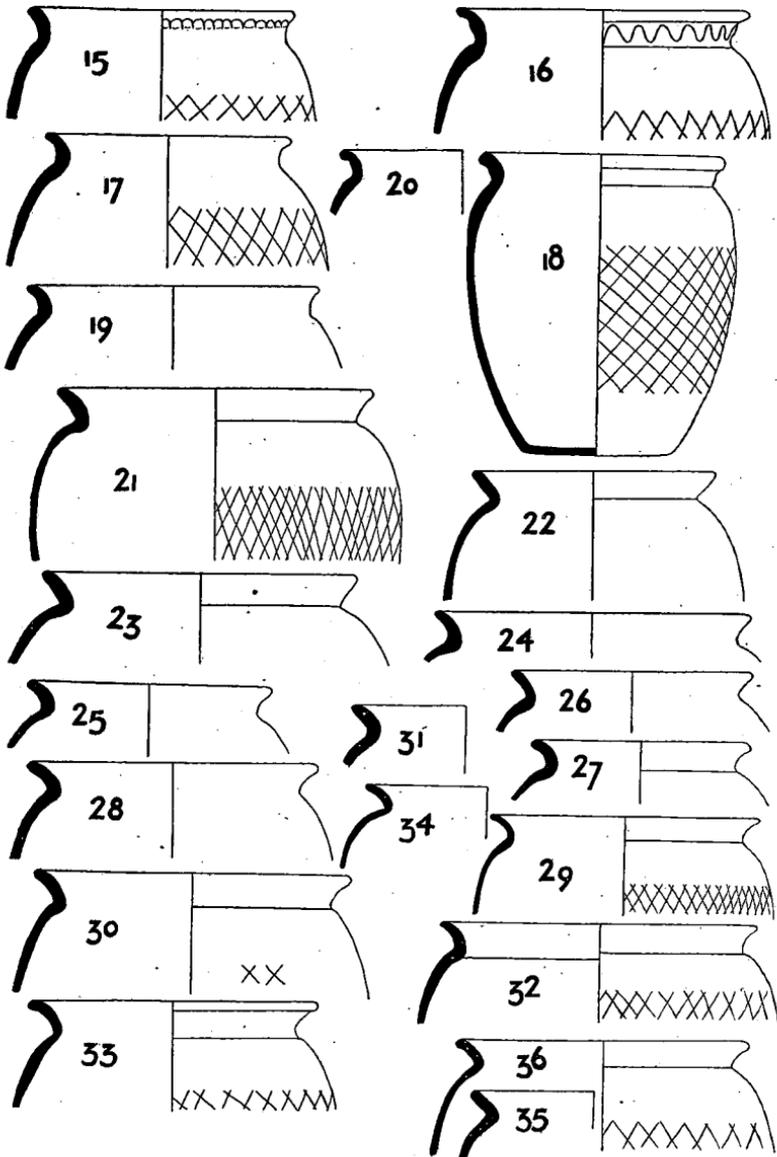


FIG. 7. (scale $\frac{1}{4}$)

(a) straight in section and without a bead, springing boldly out at about 45 degrees to the horizontal, and about 90 degrees to the shoulder, cf. no. 22;

(b) without a bead and curving outwards in an arc which is rather less than a quarter of a circle, cf. no. 28.

All the vessels of which sufficient of the wall survives have been cross-hatched. Many unassociated wall fragments in the same hard, grey fabric were similarly decorated. The angle of the cross-hatching varies from 45 degrees (cf. no. 21) to 90 degrees (cf. no. 18). The commonest angle was a little less than a right angle. Obtuse-angled cross-hatching, characteristic of cooking pots of the late third and early fourth centuries, never occurred.

While none of the vessels found exhibits a complete section, there can be little doubt that all had the plain cut-away base, restored on no. 18, for all the *olla* bases in black- or grey-fumed ware found in the deposit were of this type.

33 and 36. Each a rim and wall fragment of a wheel-made cooking pot, in smooth, fine, light-grey fabric, with a pinkish tinge. These vessels are similar to nos. 21 to 31; they differ from them in having a beaded rim. The rim of no. 33 curves well out, and the piece is thus typologically very advanced.

32, 34 and 35. Each a rim and shoulder of a wheel-made cooking pot with a beadless rim, in fine, hard, black, highly-polished fabric; quite different from that of the lightly-burnished black cooking pots of the Hadrianic-Antonine period. The shape is similar to that of nos. 21 to 31.

37, 38, 39, 40, 41 and 42. Each a rim and shoulder of a wheel-made cooking pot with a high beaded rim, in hard, smooth, light-grey fabric.

43. Rim and shoulder of a wheel-made cooking pot, with high rim, in black-fumed ware, resembling nos. 13 to 20 rather than nos. 34 and 35, though the high rim, similar to those of nos. 37 to 42, seems to be a late second-century feature and not a Hadrianic-Antonine feature.

BEAKER-OLLAE.

The beaker-*olla* is a miniature cooking pot in shape and fabric, probably used as a drinking vessel. When complete each of the present examples probably had a plain cut-away base and a single handle.

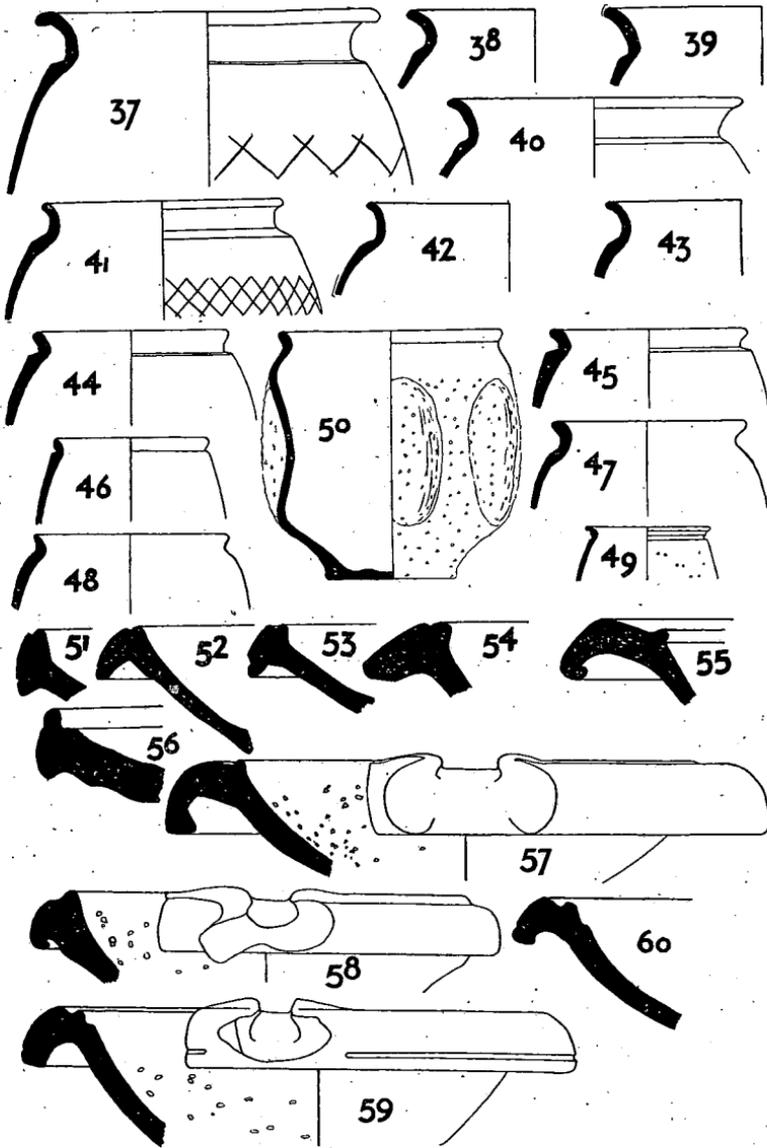


FIG. 8. (scale $\frac{1}{4}$)

44. Rim and shoulder of a beaker-*olla*, with high, sharply-stepped shoulder, in polished black-fumed ware.

45. Rim and shoulder of a beaker-*olla*, similar in shape to no. 44, but in smooth grey-fumed ware.

46. Rim and shoulder of a beaker-*olla* with high shoulder, less sharply defined than in nos. 44 and 45, in smooth black-fumed ware.

47. Rim and shoulder of a beaker-*olla* with a cooking-pot rim, or a small cooking pot, in smooth black-fumed ware.

48. Rim and shoulder of a beaker-*olla* with a bead rim, in smooth, light-grey-fumed ware.

ROUGH-CAST BEAKERS.

49. Rim fragment of rough-cast beaker, with grooved lip, in fine, hard, light-buff fabric with a dark reddish-brown slip applied after the "rough casting". This piece is typologically earlier than no. 50.

50. More than half of an indented rough-cast beaker; with a featureless rim contrasting with no. 49, in fine, hard, orange fabric with a self-coloured slip. There were portions of several similar vessels in the deposit.

MORTARIA.

51. A mortarium rim in the most typical form made by the potter BELLICUS. Buff fabric with pink core and light-brown surface; grit small and dark. Stamped BE—, see no. 94, below.

52 and 53. Fragments of two mortaria, each closely similar to no. 51 in shape and fabric; no stamp survives on either piece.

54. A mortarium rim in hard, rough, fawn-coloured fabric; no grit survives. Stamped —DRE retrograde, see no. 97, below; there is a label of orange paint on the impression.

55. A mortarium rim in hard, white, self-coloured fabric, similar to the so-called pipe-clay fabric of mortaria made in about A.D. 300. On the surface of the vessel there are irregular rust-coloured patches, apparently fortuitous, which have previously been noted on mortaria at Corbridge made by the same potter. The effect was probably produced unintentionally by chemical reaction between the light-buff slip and the surface of the vessel during firing; it is not due to chemicals in the soil, as it does not appear in the old fractures. Stamped SIMILIS retrograde, see no. 100, below.

56. Small fragment of a mortarium with thick wall and disproportionately small rim, vaguely similar to vessels by BELLICUS. Hard, coarse buff fabric with bright orange slip; large pieces of black grit. Stamped with the leaf pattern, no. 102, below.

57. Fragment of a mortarium, including rim, wall and part of spout; the rim is overhanging. Fabric closely resembles that of

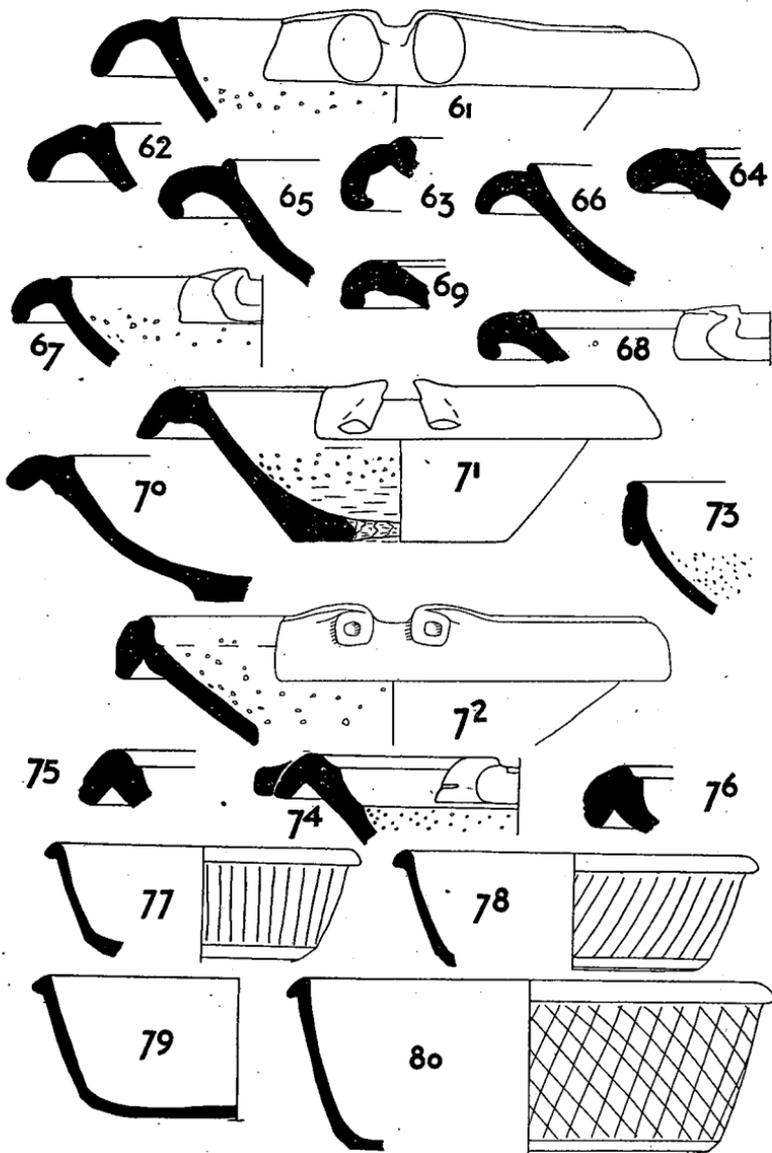


FIG. 9. (scale $\frac{1}{4}$)

no. 54, though the grit is a mixture of large white and grey pieces. Stamped with the leaf pattern, no. 103, below.

58. Most of the rim and the spout of a mortarium; the rim section closely resembles that of BELLICUS, though the spout, which is distorted, lacks the typical finger depression on either side (cf. no. 72). Fabric very nearly identical with no. 51; grit chocolate brown. Bears stamp no. 104, below.

59. Most of the rim and the spout of a mortarium with short overhanging rim. Hard buff fabric with a grey slip on the rim only; grit medium-sized mixed brown and grey. Bears stamp no. 105, below, which is from the same die as no. 106, below.

60. Large fragment of rim and wall of a mortarium similar in section and, except for the absence of a slip coating, identical in fabric with no. 59. Bears stamp no. 106 which is from the same die as no. 105.

61. Almost complete mortarium—the base only is missing. The rather flat rim differs quite fundamentally from the rims of the well-known Flavian types (Bushe-Fox nos. 10, 14 and 18). Soft, dirty-looking, greyish-white fabric; the grit, confined to the interior of the vessel, is of large size and grey, brown and white in colour. A stamp of two lines occurs on either side of the spout, complete in both instances, but so faintly impressed as to defy reading, identification and reproduction.

There is no stamp on the surviving portions of any of the mortaria which follow.

62. Fragment of rim of mortarium, in sandy orange fabric, with white slip; no grit survives.

63. Fragment of rim of mortarium with rim sharply hooked at its extremity, in hard, white fabric; no grit survives.

The rim sections of the three mortaria nos. 61 to 63 are typologically earlier than the bunched-up rims of the majority of the mortaria in the deposit. But they do not resemble pre-Antonine pieces either in shape or fabric.

64. Fragment of rim of mortarium, in hard, brick-red fabric with grey core and white slip; a little chocolate-brown grit survives.

65. Part of rim and wall of mortarium with high bead and hooked rim, in a fabric similar to no. 64; grit medium-sized, grey, brown and white.

66. Part of rim and wall of mortarium almost identical in every respect with no. 65.

The three mortaria, nos. 64 to 66, are in the same distinctive fabric. The distribution of this fabric suggests manufacture in the north-west of England. Among the potters who use it are DOCILIS

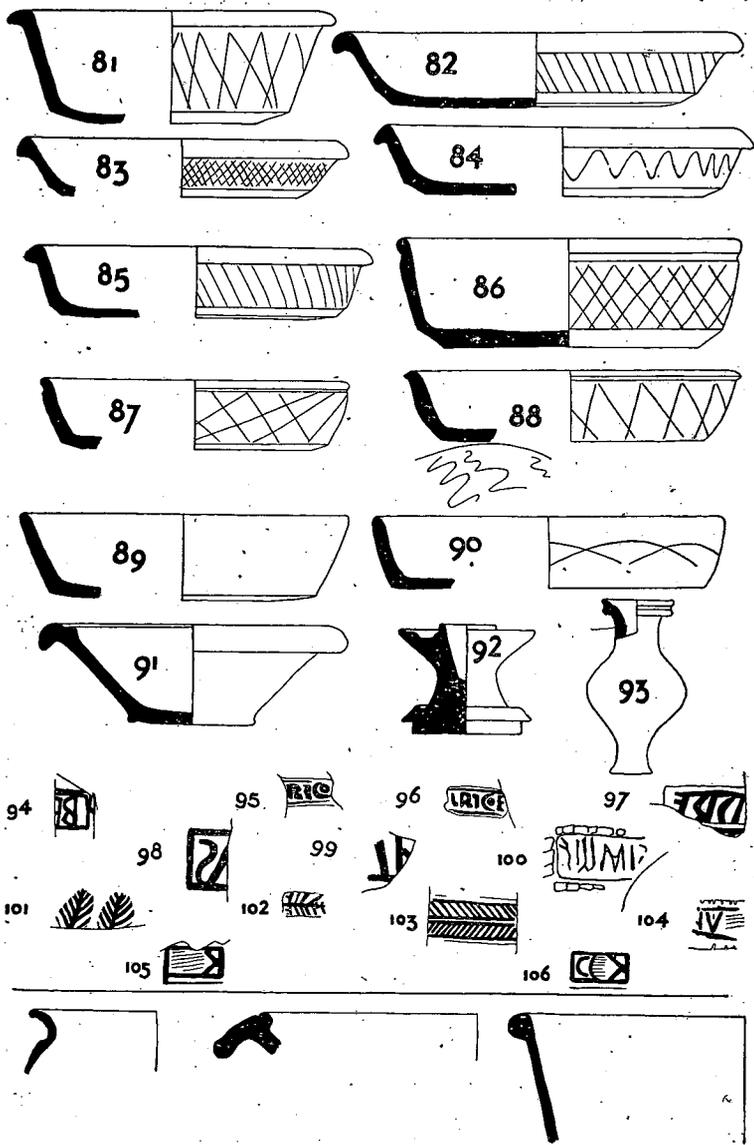


FIG. 10. (scale $\frac{1}{2}$)

The unnumbered fragments are from the west granary, see p. 155.

(I), MESSORIUS MARTIUS and AUSTINUS, all represented in the earliest levels on Hadrian's Wall. The fabric is common in Scotland, but rare in the deposit here considered. It is therefore probable that the fabric had ceased to be made some time before A.D. 200, and that the present pieces are survivals, or strays, from earlier in the Antonine period.

67. The rim and spout of a mortarium, in hard, white fabric with traces of an orange slip; grit mainly chocolate brown, with some white and grey admixture.

68. The rim and spout of a mortarium, in soft, reddish-brown fabric; no grit survives.

69. Fragment of rim of mortarium, in hard, white fabric; no grit survives.

70. Large portion of mortarium, in hard fabric, brick-red throughout, with white slip; small multi-coloured grit.

71. More than half a mortarium; the side of the vessel is almost perfectly straight externally, and the base unusually thick. Some of the mortaria in the Corbridge collection stamped by the potter BELLICUS, and better preserved than any of his wares in this deposit, exhibit this distinctive shape. Hard, buff fabric with orange slip; the grit, which survives only in a band two inches deep, beginning one inch below the bead, is small in size and mixed in colour, but mainly dark. Heavy wear has not only removed all protective grit from the bottom of the vessel, but has even caused a small circular piece to break clean away from the centre of the base.

Nos. 69, 70 and 71 all have a low bead; they share this feature with nos. 58 and 59. The shape of all five is perhaps influenced by the Raetian mortaria nos. 74, 75 and 76. They are of a type distinguishable from the earlier second-century low-beaded mortaria (Bushe-Fox no. 46).

72. Fragment of a mortarium, including rim, wall and part of spout. There is a circular depression on either side of the lip of the spout, as though the potter had pushed his finger into the clay. Several mortaria in the Corbridge collection, which display this feature, are stamped by BELLICUS (see *AA*⁴ xxvi, p. 203), and, as far as can be judged from the literally fragmentary evidence, the feature seems characteristic of this potter only. Hard, pinkish-buff fabric with thin orange slip; grit medium-sized and multi-coloured.

The mortarium bears only a superficial resemblance in form to the wall-sided mortaria found in fourth-century deposits.

73. Fragment of the rim and wall of an unusual mortarium with a straight, upright, wall-sided rim. It is apparent from the fracture that the rim has been formed by folding the wet clay over the outside. Red fabric with grey core and thin dead-white slip; the grit is multi-coloured, small-sized and thickly studded in the interior, but

confined to the area below the vertical rim. Two almost identical vessels are represented by fragments previously found at Corbridge; one is unstamped, while the other carries the first three letters and part of the fourth of the stamp SECVRVS. This rare type is perhaps an import. Although the fabric must be described in much the same words as that of the north-western early-Antonine mortaria the quality and application of the slip is, for example, very different. The piece is wholly diverse from any of the local late second-century mortaria with which it was found.

74. The greater part of a mortarium with diametrically opposed lugs or handles on the rim, and neatly-moulded spout. There is a groove on the upper outer surface of the rim which stops short of the lugs and spout. The internal bead is low and vestigial. Fairly hard porous fabric, brick-red throughout; the surface of the rim, and the inside of the vessel down to a distinct margin, are covered by a hard crimson glaze; the interior of the vessel below the margin, and the exterior below the rim are unglazed. The grit, confined to the unglazed interior, is medium-sized and chocolate-brown.

75 and 76. Fragments of mortaria similar to no. 74. Mortaria of this type are very common in Raetia, and the present examples are probably imports.

Imports and survivals apart, there is remarkable uniformity in form and fabric among the mortaria in the deposit.

BOWLS.

77, 78, 79 and 80. Each a fairly complete example of a bowl with a short down-turned rim of triangular section (called a roll rim by some students) and a slight chamfer—a vestigial carination.

The fabric in each vessel is polished grey-fumed ware with a pinkish tinge. The decoration, either in cross-hatching, or parallel lines, is lightly scored on an already burnished surface. The proportions of the four bowls are respectively 38, 36, 41 and 38.

This is one of the characteristic types in the deposit, represented by many fragments, though only vessels with complete sections have been drawn.

81. The greater part of a bowl, with flat rim and a somewhat deeper chamfer than the four bowls dealt with above, in black-fumed ware, cross-hatched on an already burnished surface. The proportion is 39.

This vessel is probably a survival.

PLATTERS WITH DOWN-TURNED RIMS.

82, 83, 84 and 85. Each is a fairly complete example of a platter with a short or down-turned rim and slight chamfer. Nos. 82 and 83 are in polished grey-fumed ware with a pinkish tinge, while nos.

84 and 85 are black and highly polished. All are decorated in similar fashion to the bowls. The proportions of the four platters are respectively 14, 17, 20 and 22.

This is one of the characteristic types in the deposit, represented by many fragments, though only vessels with complete sections have been drawn.

BEAD-RIM PLATTERS.

86. An almost complete platter with bead rim, slight chamfer and an exceptionally thick base, in burnished grey-fumed ware. There are traces of soot on the exterior, which implies that these vessels, like the cooking pots, were used over a fire. The proportion is 33—a rare case, on the borderline between a platter and a bowl.

87. Fragment of a platter, with bead rim and very slight chamfer, in pinkish-grey fabric with polished surface and traces of soot on the exterior. The proportion is 23.

88. Fragment of a platter, with bead rim but no chamfer, in pinkish-grey fabric with matt surface, perhaps caused by burning. There are wavy lines on the underside of the base. The proportion is 23.

PLAIN PLATTERS.

89. Large fragment of a plain, chamfered platter, in black-fumed ware, undecorated. The proportion is 27.

90. Large fragment of a plain platter, without a chamfer, in light-grey fabric with a polished surface, decorated in the same way as the bowls. The proportion is 21.

MISCELLANEOUS.

91. More than half of a flanged bowl with moulded base, in hard, blue-grey fabric, unfumed and unpolished.

This vessel has no typological connection with the bowls and platters considered above. It is probably a variant imitation of Dragendorff's form 38, in plain Samian ware.

92. A complete candlestick, in hard buff fabric with grey core and orange slip.

93. A small flask, complete and unbroken, in hard, light-orange fabric.

Stamped Vessels. Only two stamped *amphora*-handles were found in the deposit, each a type dealt with by Mr. M. H. Callender (see *AA*⁴ xxvii) and included in his totals. They are:

QMR (retrograde) and LIT.

The following legible stamps were noted on plain Samian ware:

[A]DVOCISI[—	on form 18/31,
ATTILLI.MA (MA ligatured)	on form 33,
BANVILLI M	on form 38,
CARATILLI	on form 33,
CENSORIN[— (EN ligatured)	on form 33,
DIVICATVS	on form 31,
GERMANI M (NI ligatured)	on form 33,
[IAN]VARIS.F	on form 18/31,
ILLIOM[—	on form 18/31,
MARTI M	on form 33,
POTTACVS	on form 18/31,
PRISCI[—	on form 18/31,
REGINVS.F	on form 31,
RIIG[I]NI M	on form 18/31,
SENILA.M	on form 33,
and SILVI.OF	on form 31.

With three apparent exceptions, each of the above stamps⁴⁶ is of a second-century Central-Gaulish potter. The form and fabric of the vessels stamped by GERMANUS, ILLIOMARUS and SILVIUS are consistent, in each instance, with an Antonine dating.

Thirteen mortaria, or fragments of mortaria, bore stamps sufficiently well preserved to be reproduced, while one, no. 61 above, carried two impressions of a stamp in two lines which it has not been possible to draw.

94. BE— part of the stamp BELLICVS.F retrograde, from the usual die. On no. 51, above.

95. —RICO— part of the stamp CRICOF, type A of the two dies noted for the Lincoln potter⁴⁷ CRICO. On a tiny fragment of a very thin rim of a mortarium, in hard, white fabric.

96. CRICOF, an almost complete impression of type B of the

⁴⁶ Oswald, *Index of Potter's stamps on Terra Sigillata* (1931), s.vv.

⁴⁷ *JRS* xxxiii, 73; cf. *AA*⁴ xxvi, 178.

two dies used by the same potter CRICO. On a fragment of a curving rim in hard, white fabric.

97. —DRE retrograde; the lower part of the letters DR has been obliterated by a subsequent impression of the same stamp, most of which has been lost in the fracture of the vessel. Part of the stamp CVDRE retrograde, from the usual die. On no. 54, above.

98. SA— the S reversed, the A unbarred and partly lost in fracture. Part of the stamp SATV, from the die⁴⁸ found at Corbridge in 1911. The potter is listed as SATURNINUS (II). On a small fragment of a very coarse mortarium rim in hard, rough, fawn-coloured fabric. Except that no trace of orange paint has survived the fabric is identical with the piece stamped by CUDRE.

99. —ATV: the A is unbarred and incompletely impressed, while the top edge of a second impression of the stamp gives the letter the appearance of an inverted T; the top of the actual T and part of the small V have been lost in fracture. A comparison between this impression and the die in the Corbridge collection leaves no doubt that, like no. 98, this is a stamp of the potter SATURNINUS (II). On a tiny rim-fragment, identical in fabric with no. 54, even to the paint.

100. SIMILIS or SIMILIF retrograde; the initial S is poorly impressed but is legible. An almost complete impression of the usual die of the potter SIMILIS. On no. 55, above.

All the above stamp types have been dealt with in a previous volume of this journal⁴⁹, though the present examples are not included in the totals given there. The mutual association of the pieces in a sealed deposit is interesting. Although there are only seven legible stamps, they are probably a fair sample, especially as two potters are represented twice by separate vessels. If style and fabric are safe guides, BELLICUS is represented in the deposit by several unstamped pieces as well as by a single stamped fragment.

101. A leaf stamp doubly impressed on a fragmentary rim in a hard, dirty-looking white fabric, with brown slip.

102. A leaf stamp, on no. 56.

103. A leaf stamp, on no. 57.

104. An illegible stamp, on no. 58.

105 and 106. Illegible stamps from the same die, on nos. 59 and 60. It is interesting to note that the two pieces, not from the same vessel, are similar in section and carry the same stamp.

Conclusions. The deposit adds to the available evidence for the kinds of pottery that were in use in northern Britain

⁴⁸ AA³ viii, 194, fig. 14; cf. AA⁴ xxvi, 190.

⁴⁹ AA⁴ xxvi, 172-201.

at the close of the second century. A comparison between the present group and other northern groups of approximately the same period, permits a brief statement of general differences and similarities between this deposit and others.

CORBRIDGE.

The group⁵⁰ found on site XXX in 1911 resembles the present group. There are several parallels, especially among the mortaria, but there are also differences. There are more early-Antonine than late-Antonine vessels from site XXX, while in our deposit the former are in a minority. To take one instance, while we have figured one flat-rimmed bowl and four bowls with down-turned rims, Mr. Bushe-Fox has figured only one bowl with a down-turned rim and six with flat rims. This does not mean that the group from site XXX was sealed at a much earlier date, for the mere presence of the later piece precludes that possibility. The probable explanation is that the deposit on site XXX accumulated throughout the Antonine period, while our deposit represents the pottery, including survivals, in use at the close of the period. It should be added that on site XXX a number of late-fourth-century vessels were subsequently introduced into the deposit: the present deposit is free from later disturbance and admixture.

As might be expected, there are points of similarity between the present group and the occupation-deposits⁵¹ of A.D. 163-96 found below site XXXIX in 1936.

SCOTLAND.

The present deposit is similar in many respects to groups of pottery from various military sites in Scotland. Of the fifteen names on plain Samian ware in our deposit, ten have been recorded from sites⁵² in Scotland. Three occur on the Antonine Wall, six at Newstead, and one both at Newstead and on the Antonine Wall.

⁵⁰ *AA*³ viii, 174-82.

⁵¹ *AA*⁴ xv, 266.

⁵² *Proc. Soc. Ant. Scot.* lxxv, 432.

All the five names on mortaria have been recorded from sites in Scotland.

BELLICUS	Mumrills and Rough Castle;..
CRICO	Balmuildy, Rough Castle and Newstead;
CUDRE	Newstead;
SATURNINUS (II)	Newstead;
and SIMILIS	Balmuildy, Old Kilpatrick and Newstead.

By comparing mortarium stamps found in Scotland with those found on other sites it is possible to begin a subdivision according to date. The stamps of AUSTINUS and DOCILIS (I) are found both in Hadrianic levels on Hadrian's Wall, and in Scotland. These are clearly Hadrianic-Antonine potters. The stamps of GRATINUS and SARRUS are absent from the early levels of Hadrian's Wall but are found in Scotland and at sites south of Hadrian's Wall known to have been occupied in the early-Antonine period. These are probably early-Antonine potters. On the other hand every stamp in the present group, dated to the end of the second century, has been recorded in Scotland. It seems, then, that the present group of stamps represents the latest mortaria in use on the Antonine Wall and at Newstead, and that stamped mortaria from Scotland may accordingly be subdivided into an early-Antonine group and a later group, closer in date to A.D. 200.

Unstamped coarse pottery may be subdivided in the same way, by a comparison of the material from Scotland with the present group from Corbridge. The early-Antonine types, which, as survivals, are in a minority in the present deposit, occur, as is to be expected, in large numbers on sites in Scotland. They are proportionally more numerous in those deposits than in ours. Such are the black-fumed cooking pots with short, upright rims, mortaria in red fabric with grey core and white slip, and black bowls with deep chamfer and flat

rim. But all the characteristic types of the present deposit are also found in Scotland. They do not form so great a proportion of the Scottish deposits as they do of ours, yet they are present in quantity. The following table gives some examples of parallels between the present deposit and those from three forts ⁵³ on the Antonine Wall:

Corbridge 1947, 1 =	<i>Mumrills</i> , 100, 8.	
”	9 = <i>Mumrills</i> , 103, 1;	<i>Old Kilpatrick</i> , 21, 18.
”	22 = <i>Mumrills</i> , 96, 5;	<i>Old Kilpatrick</i> , 21, 5.
”	28 = <i>Balmuildy</i> , 45, 7;	<i>Mumrills</i> , 96, 3.
”	44 = <i>Balmuildy</i> , 46, 6;	<i>Old Kilpatrick</i> , 21, 27.
”	50 = <i>Balmuildy</i> , 49, 1-5.	
”	59 = <i>Balmuildy</i> , 42, 41;	<i>Mumrills</i> ; 92, 25.
”	80 = <i>Balmuildy</i> , 47, 12;	<i>Mumrills</i> , 101, 12.
”	84 = <i>Balmuildy</i> , 47, 10;	<i>Mumrills</i> , 101, 11.

These, and other similar pieces from Scottish deposits, form the later of the two groups into which the Antonine pottery may be subdivided. This is not the place to draw historical inferences, but the two simple facts emerge. Antonine pottery from forts in Scotland may be divided into an earlier and a later group. The later group is typical of the years approaching A.D. 196.

⁵³ *Mumrills*, *Proc. Soc. Ant. Scot.* lxiii, 396; *Balmuildy*, S. N. Miller, *The Roman fort at Balmuildy* (1922); *Old Kilpatrick*, S. N. Miller, *The Roman fort at Old Kilpatrick* (1928).