

## I.

### EXCAVATIONS AT THE ROMAN FORT OF NEWSTEAD, 1947. BY PROFESSOR IAN A. RICHMOND, M.A., LL.D., F.B.A., F.S.A., F.S.A.SCOT.

*Read April 12, 1948.*

The Roman fort at Newstead was thoroughly and skilfully excavated by the late Dr James Curle<sup>1</sup> in a great continuous series of campaigns covering the years 1905–10. Dr Curle's excavations, which were far in advance of contemporary practice, disentangled a detailed plan of much of the fort and its surroundings, produced a collection of relics so notable that they have never since ceased to excite wonder, and, above all, provided a general chronological scheme for the occupation. They demonstrated conclusively that there had been two main periods of occupation, the first commencing under Iulius Agricola in A.D. 81, the second under Lollius Urbicus in A.D. 139–40. Indeed, it was one of the principal distinctions of James Curle's work, and there were many, that it first established in Britain a sound differentiation between pottery of these two epochs. But within the two main periods, whose commencement is so well determined in both cases by literature and confirmed in the second case by epigraphy, the phases proved difficult to define. Dr Curle thought that he could distinguish five distinct phases, two in the early period of occupation and three in the late. But the determination was loose and unsatisfactory. The truth was that, while the evidence had manifested itself piecemeal, in many ways and in many parts of the site, no systematic attempt was made to correlate the data stratigraphically, so that the remains of all periods could be viewed in direct relationship. To expect such an effort would be to ask for something out of its time, almost thirty years too early. And a generation later, when the time had come to describe the site for the Royal Commission on Ancient and Historical Monuments for Scotland, Dr Curle himself felt this strongly. Before the expectation of war in 1938 laid a paralysing hand upon all major archæological projects, he had worked out with the writer a plan to cut trial sections across the fort in order to make a fresh and systematic study of the stratification. All we could then do was to plan and to hope that better times would permit excavation in the future. But there were nine long years to wait, and when they were over Dr Curle was no longer with us. Only his inspiration remained, changing the work from a long-awaited collaboration into the dutiful fulfilment of a pledge.

<sup>1</sup> James Curle, *A Roman Frontier Post and its People: the Fort of Newstead in the Parish of Melrose* (Glasgow, 1911); hereinafter referred to as *Newstead*.

The work<sup>1</sup> itself was carried out between 26th August and 24th September 1947. Two sections were cut. The first (fig. 1) lay 80 feet east of the middle of the easternmost south gate and cut across the whole system of defences and well into the interior of the fort, crossing the fourth *contubernium* from the west in Curle's Barrack I. Its special objective was the secondary but early stone building<sup>2</sup> found by Dr Curle in this quarter of the fort. The second section (fig. 2) was taken 230 feet south of the middle of the west gateway in the so-called reducing-wall, with the intention of defining the relationship of this wall to the occupation levels within the fort. The results in each case were highly fortunate. Almost everywhere the stratification remained completely undisturbed by former work and supplied, together with much dating material, the clearest possible definition of periods, so as at once to confirm and to simplify Dr Curle's interpretation of the site.

#### THE EXCAVATIONS.

##### *Phase I. The Agricolan Occupation.*

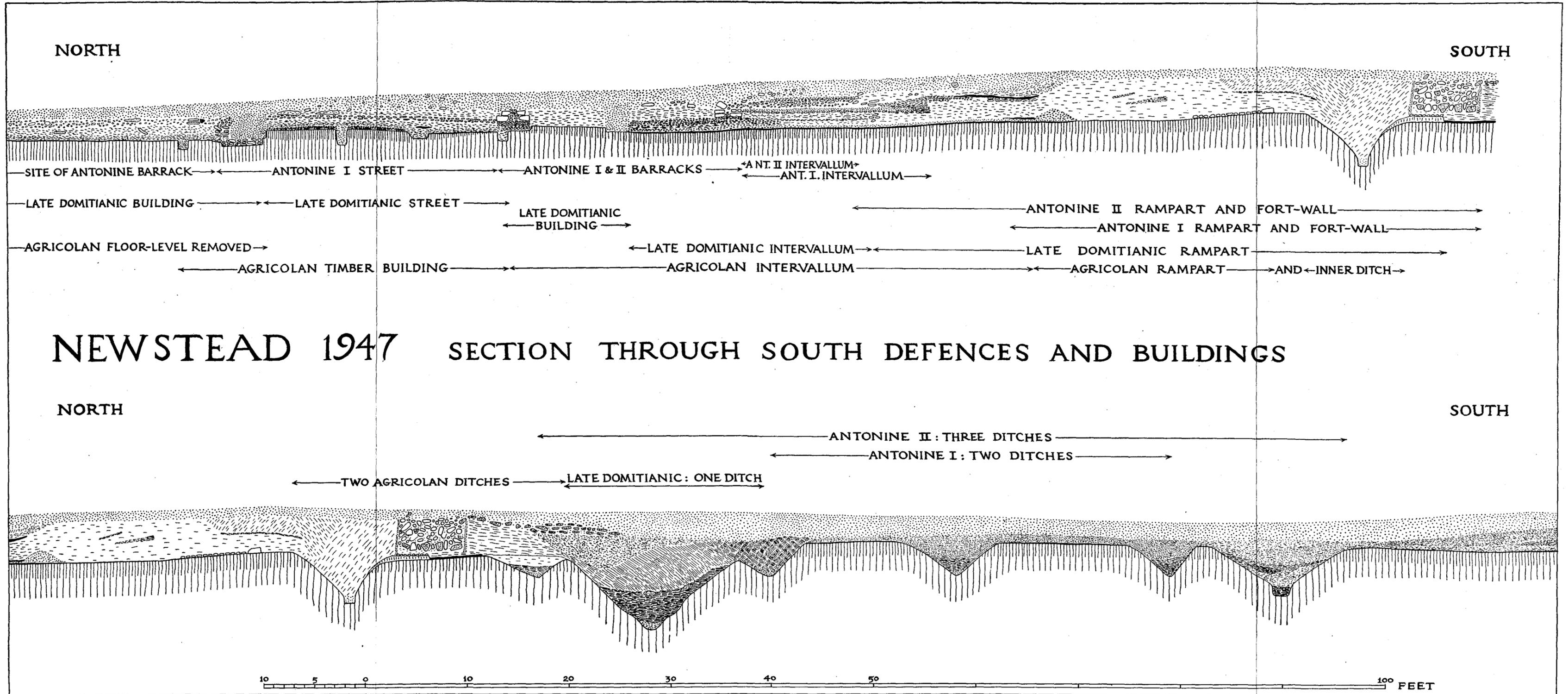
A first contact (fig. 1) with the Agricolan *defences* was made at the ditch discovered by Dr Curle just behind the Antonine fort wall. This was a steep-sided V-shaped ditch (Pl. I, 1) cut in rock, 5 feet deep and 8 feet wide at the top, narrowing to a channel about 1 foot square at the bottom. Ten feet in front of this ditch lay an outer ditch, not hitherto disclosed on this half of the site, of which the outer lip had been removed by a later and wider ditch. If its dimensions were symmetrical, it will have measured 9 feet wide by 3 feet deep.

Four and a half feet behind the inner ditch, and resting immediately upon the subsoil, came a stone rampart-foundation  $7\frac{1}{2}$  feet wide, formed of a single layer of mixed cobbles and red stone and bordered by a carefully laid front kerb of larger stones (Pl. I, 2). The cobbles are set in stiff red clay and are often placed sticking end upwards, so as to form a corrugated surface which would prevent the front of the rampart laid upon it from sliding or squeezing forward over the ditch. The rampart material is a stiff whitish clay,<sup>3</sup> beaten very hard, and here and there exhibiting layers of trodden mud. It extends for 23 feet behind the outer edge of the foundation or bottoming and then terminates against a small mound or heel of gravel, piled  $4\frac{1}{2}$  feet wide and 1 foot high, manifestly intended to mark the position chosen for the back of the rampart at the time of erection. While the back of the rampart is thus clearly defined, the front has been

<sup>1</sup> Labour of six German prisoners was kindly supplied through the Roxburgh War Agricultural Executive Council, local labour being unobtainable.

<sup>2</sup> *Newstead*, 65-66.

<sup>3</sup> This material was visible from the top of the North Eildon Hill, on 28th April 1951, as a broad white streak in the freshly ploughed fields covering the site. The ramparts of the fort and annexes and bath-house were perfectly defined by this notable example of an archaeological soil mark.



# NEWSTEAD 1947 SECTION THROUGH SOUTH DEFENCES AND BUILDINGS

obscured by later alterations. Originally, it plainly coincided with the front of the bottoming, but in a later demolition the upper part of the white clay was shovelled forward and a flat working-platform 9 feet wide was formed on top of the surface thus created, which was churned by the men at work into dark trodden mud. The significance of this change, however, concerns the next period and is discussed later (p. 7).

The *Intervallum* behind the white clay rampart is represented by a gravel spread, from 4 to 6 inches thick, covered by trampled mud and ashes and extending for 38 feet. It is then cut off by one of Dr Curle's trenches and by levelling for later Roman buildings and does not reappear. The next surviving structural feature of this period occurs at 50 feet behind the rampart back. This is a slot for the foundation of a timber building, and it measures 1 foot square (Pl. V, 2). The building itself was  $32\frac{1}{4}$  feet overall in width, its north limit being represented by a second slot, 12 inches wide and 9 inches deep. Both these slots are only the heels of the foundation-trenches which they represent and of which a complete picture is afforded by a third slot, 12 inches wide by 21 inches deep, which marks the long axis of the building (Pl. II, 1). A minor subdivision was also found (Pl. II, 2), a much shallower north-to-south slot, 1 foot square, which turns westward just under 5 feet north of the axial division and eastward  $5\frac{1}{2}$  feet to south of it. The space bordered by the minor division was paved with light cobbling much worn by treading. Similar cobbling was observed extending farther north to east of the partition, but to south of it the flooring was of clay only, the cobbling terminating as if at a threshold. In the clay floor there was one small post-hole and an irregular excavation for other timber structures of uncertain significance. Farther north, beyond the timber building, the ancient ground surface, and any remains of the first period which it may have carried, had again been removed by later buildings. But as far as the north end of the section, that is, for almost 17 feet, there was no trace of timber buildings, and it seems likely that this was the site of a street between two blocks.

It will be evident that the remains recovered are no more than a sample from the earliest level at Newstead, but they add much to our knowledge of the Agricola fort. The discovery of two ditches protecting the eastern half of the fort gets rid of a previous anomaly, whereby one-half of the fort was less well defended than the other, or even than the annexes. Double ditches can now be postulated everywhere on the circuit. The massive white clay rampart is 25 Roman feet thick, and its rampart-walk can hardly have been less than 15 feet high, exclusive of the 5-foot breastwork and merlons which must be added in estimating the total height. The thickness at the base is actually greater than that of the contemporary legionary rampart<sup>1</sup> at Caerleon; but, when allowance is made for the fact that the

<sup>1</sup> *Arch. Camb.*, 1931, 102, figs. 3, 6.

Caerleon rampart had a vertical back, it becomes clear that the Newstead rampart must have been slighter. It is, however, much bigger than the turf rampart<sup>1</sup> at Fendoch, which was 17 feet thick. The scale of the defences thus suggests that the special importance of Newstead as a pivotal position, comparable with Corbridge or Carlisle, was realised from the first and that it is a prime example of Agricola's sense for *opportunitates locorum*.<sup>2</sup>

The defences were separated from the buildings of the fort by a 50-foot *intervallum*, surfaced with some 6 inches of sharp fine-grade river gravel. The great width of this open belt, almost double the size of the Fendoch *intervallum*, is probably connected with the fact that a cavalry garrison is attested for this period (see below, p. 26). But the need to protect the buildings of the fort from flaming missiles<sup>3</sup> will also be borne in mind. To hit the buildings, an enemy would have to throw over a hundred feet, even from the very edge of the ditches; while to be out of killing range himself he would have to throw over double that distance. This puts the buildings well outside normal reach. The *intervallum* was, however, also the spot where cooking was done, in cook-houses or ovens situated just behind the rampart; and, although the section did not reveal at this level any structures connected with cooking, the fair quantity of ash on the gravelled surface of the *intervallum* suggests that cooking installations lay not far away.

The position of the fort gateways indicates that we are here in the *retentura*, where the buildings to be expected are either barracks or stables, and the overall width of 32 feet attaching to the timber building here discovered will suit<sup>4</sup> either equally well. But the irregular internal subdivisions and the differing types of flooring definitely exclude the regularly planned and uniformly floored *contubernia* or men's quarters of a barrack, so that, if the building were a barrack, the portion discovered must be the irregular rooms of the decurions' or centurion's suite. This interpretation, however, will not accord with the relationship of the building to the general plan of the Agricolan fort. The portion discovered lies too far west of the south-east angle of the fort to be the administrative end of a barrack lying east and west; while, if it is supposed to be the south end of a normal barrack running from north to south, this will not fit the total absence of foundations at the north end of the trench. According to our data the building can only be lying east and west, and in this case cannot be regarded as a barrack-block. It must therefore be interpreted as stables, in which

<sup>1</sup> *PSAS.*, lxxiii. 113.

<sup>2</sup> Tacitus, *Agricola*, 22, 2.

<sup>3</sup> For a fire-bearing arrow or dart, see Macdonald and Park, *The Roman Forts on the Bar Hill*, 116, fig. 42, 2, with appropriate Greek references: for red-hot sling-bolts as well, see Caes. *B.G.*, v. 43, 1.

<sup>4</sup> For contemporary barracks of timber, cf. Fendoch, *PSAS.*, lxxiii. 134; for timber stables of Antonine date, see Carzield, *JRS.*, xxx., pl. viii, and *Trans. Dumfriesshire and Galloway N.H. and Ant. Soc.* xxii. 157.

the cobbled floors are provided to accommodate horses. Nor need the occurrence of pottery in the building surprise us, since the grooms, like stable-lads to-day, lived with the animals in their charge.

## AGRICOLAN FORT, NEWSTEAD

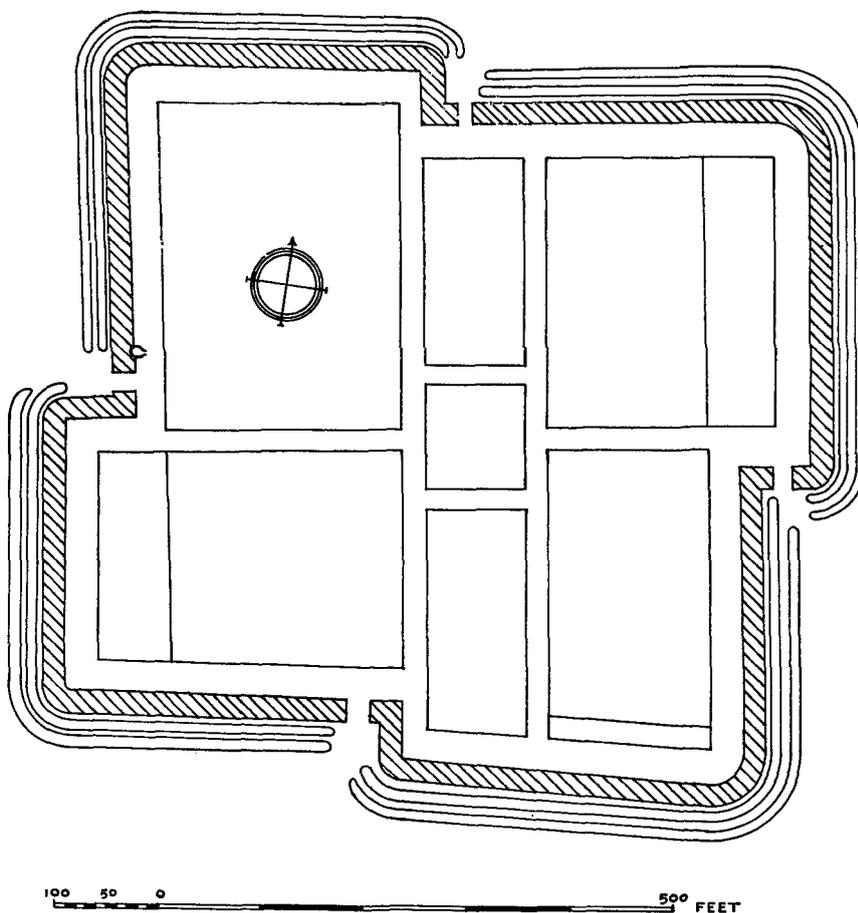


Fig. 2.

The identification of a stable lying east and west raises the whole question of the disposition and garrisoning of the Agricolan fort (fig. 2). This fort, unlike the Antonine fort which overlies it, faced west. Its east and west gates<sup>1</sup> are opposite and axial, while its north and south gates, though

<sup>1</sup> The type of gateway, outlined only by the ditches so far as Dr Curle's work went, is illustrated more fully at Tassiesholm, *JRS.*, xxxix. 99, fig. 20. Some day these Newstead gates will repay examination.

opposite, lie considerably west of the axis. The *retentura*, containing both principal buildings and barracks or stables, thus lies to eastward; and the *praetentura*, containing barracks or stables only, lies to westward, facing up the Tweed valley and overlooking the main road descending<sup>1</sup> to the Newstead ford. In the block forming the southern half of the *retentura*, where the stable discovered is situated, there is just room for the normal barrack or stable 150 feet long, for a *via quintana*, and for a central row of principal buildings measuring about 100 feet from back to front. The other blocks are larger, and their dimensions afford no clue to how the buildings may have been arranged inside them. But there is abundant space, even in the *retentura*, for sixteen single blocks of stables or barracks, and, allotting two *turmae* to each block, this means that two-thirds of an *ala milliaria* could be housed there. On more generous spacing, there is ample room for 12 blocks and accessory buildings in both *praetentura* and *retentura*, so that an *ala milliaria* may probably be assumed. It will be observed that pits containing Flavian relics were particularly rich in objects expressly associated with cavalry. The splendid trooper's helmets, which were the crowning glory of Dr Curle's excavations, all came<sup>2</sup> from early pits. There must also be mentioned the beautiful horse-trappings<sup>3</sup> from pit LV and the richly decorated leather chamfrons<sup>4</sup> from pits LXXVIII and CII.

The period of this first occupation, which is now seen to be associated with a permanent fort, is securely linked with Agricola by a fortunate numismatic discovery. Just beyond the axial division of the building identified with a stable, a *sestertius*<sup>5</sup> was found in the filling of the northward partition, with other relics of occupation. It was reduced to wretched condition by corrosion, but the surviving portions of the original surface showed that it had been virtually in mint condition when it was tumbled into the trench by the demolition party. The obverse still exhibited a head of Vespasian, with the legend [IMP CA]ES V[ESPASIANVS], the reverse the legend AEQV[ITAS AVGVSTI], both legends reading inwards and not outwards and therefore belonging to the earlier part<sup>6</sup> of Vespasian's principate. Such a coin, almost in mint condition, is exactly what might be expected to occur as current cash in Agricola's army. To this dating the pottery recovered (see below, p. 33), in particular the fragments of a globular Samian beaker of Dragendorff's shape 67 and a fine broad-flanged mortarium found in association with the early rampart and *intervallum*, afford confirmation without adding anything more precise. As for the duration of

<sup>1</sup> *Newstead*, 2-3.

<sup>2</sup> *Ibid.*, pls. xxvii, xxviii, xxix, from pit xxii (see pp. 121-22); pl. xxx, from pit lvii (p. 128-29).

<sup>3</sup> *Ibid.*, 128, pl. lxxii.

<sup>4</sup> *Ibid.*, 134, pl. xxi (pit lxxviii), 155 (pit cii).

<sup>5</sup> Cf. *BMC.*, ii, no. 600, pl. 23, 8, though the coin is not sufficiently well preserved to make quite sure the issue is of A.D. 71.

<sup>6</sup> *BMC.*, ii, p. xxviii, A.D. 69-73.

the occupation, coins from the ditches of the fort, found by Dr Curle, attest occupation until at least A.D. 86, for which year there are two *dupondii*<sup>1</sup> in mint condition. That the occupation did not last much longer is to be inferred from the fact that the second Flavian occupation was itself of some duration and cannot far have outlasted the turn of the century (see p. 26). In that event there is hardly room to prolong the Agricolan occupation beyond A.D. 90, if indeed for so long. It will be recalled that the one and only period of occupation at Fendoch<sup>2</sup> came to an end about this time.

*Period II. The Late Domitianic Occupation.*

The Agricolan defences and buildings were deliberately demolished in order to make way for still more massive defences and for less impermanent buildings, with stone foundations. As already noted (p. 3), the first stage in the demolition of the Agricolan white clay rampart was marked by digging away its front. The clay so obtained was used to fill up the outer Agricolan ditch, into which it was pounded so tightly that the filling could be distinguished from the subsoil only by its softer and stickier nature. It is thus easy to see how the ditch thus sealed came to be missed on this side of the fort. Below the white clay filling, however, the bottom of the ditch contained about a foot of accumulated growth, covering in turn some nine inches of pure silt, at the apex of the V-shaped bottom. No further demolition of the white clay rampart, however, seems to have taken place, and the inner Agricolan ditch was filled with a markedly different pinkish-yellow clay, presumably freshly obtained from another source. This clay was deposited in evident lumps or spadefuls, which filled the whole ditch right down to the square channel at its base.

The channel itself was filled with yellow silt, but it is evident that there was no other accumulation in the ditch at the moment of filling. There was thus a marked difference in the condition of the two ditches at the time of filling, the outer being choked with growth and silt and the inner clean and almost empty. This may be partly due to the fact that the inner ditch is here rock-cut and would neither make much silt nor favour much growth. But it must also be recalled that the inner ditch was much the more important of the two, and that its tidier state may equally well be explained by deliberate routine scouring, otherwise there could hardly fail to have been some white clay wash from the rampart just behind it. But if the ditch had only recently been scoured, it will follow that the filling took place while it was still in commission. In other words, the reconstruction which the filling represents looks like the remodelling of a fort in commission as distinct from the reoccupation of a deserted or evacuated site.

As the pinkish clay filling nears the top of the inner ditch, it is indistinguishably merged with a new rampart-front of beaten reddish-pink clay,

<sup>1</sup> *Newstead*, 405-406, coins nos. 163, 170.

<sup>2</sup> *PSAS.*, lxxiii. 146, 153.

which extends backwards over the dirty trampled surface of the shelf cut in the earlier white clay rampart and forwards right across the ditch. Beyond the outer lip of the ditch it rests upon a strip of stone bottoming 3 feet wide, set in very hard blue clay (see fig. 1). This bottoming had evidently been laid before the inner ditch was filled, since a tongue of the associated blue clay extends well over the south lip of the ditch and is overlapped by the pinkish clay filling; and the function of the bottoming is to underpin the front of the pink clay rampart in exactly the same way as the earlier bottoming supported the front of the white clay rampart. The finished arrangement is, however, almost eclipsed by the Antonine fort-wall, which has cut away all but a few inches of the pink clay front, as described in further detail below (p. 13). Beyond the front, immediately in front of the bottoming, a wood fire had been made by a working party, but its embers were quickly covered by an ever-increasing spread of washed silt from the pink clay. The spread extends for  $13\frac{1}{2}$  feet and tails out to nothing over the edge of a great ditch at least 16 feet wide and  $7\frac{1}{2}$  feet deep. This imposing ditch is manifestly later than the outer Agricolan ditch, of which it has removed the south lip: but it is equally plainly contemporary with the pink clay rampart, from which the washed deposit spreads over its lip. In fact, the construction of the pink clay rampart, which is an extension or enlargement of the Agricolan white clay rampart, demanded a new ditch-system, since it obliterated the old one. The scale of the new works is in each case much bigger than that of the Agricolan defences, massive though these are. The new rampart was some 45 feet thick, for its back, in dirty white clay revetted with large stones, occurs 16 feet behind the tail of the Agricolan rampart, and the ditch is correspondingly large. The object of the thickening can only have been to gain height, and the suggestion conveyed by the new proportions is that the height must have been almost doubled, being calculable now at some 28 feet as against some 15 feet before. In the design of the gateways such a height of rampart-walk would imply three-storeyed towers and a rampart-walk level with the second storey and coinciding with the top of a roofed chamber over the gate. The arrangement is in this respect comparable with the upper tier of Cæsar's elaborate fortifications against the Bellovaci, where the towers were three-storeyed and the upper rampart-walk, on a level with the second storey of the towers, was designed<sup>1</sup> so that the defenders were "safer because of their height, and for that reason might throw their missiles more boldly and further." At Newstead, however, nothing is known about the structure of the gates or interval-towers of this period, and the question, which is of limited scope and great interest, may well seem appropriate to future exploration, the more so because the south gates of this period are isolated and separate from all others.

<sup>1</sup> *B.G.*, viii. 9.

The *intervallum* behind these imposing new defences is marked by a spread of dirty white clay covered by an oven. Then follows an *intervallum* road at least 14 feet wide, which is cut away at its north edge by Dr Curle's diagonal trench<sup>1</sup> crossing the Antonine *contubernium* from N.W. to S.E. Both the true edge of this road and the wall of a building bounding it must, however, have occurred within the width of this trench; for the north side of the trench cuts into the floor of a building covered with occupation-earth, which continues northwards for 8 feet. The floor is formed by the natural clay of the subsoil, from which the top surface has been removed, together with any Agricolan remains which it may have carried. A reason for the drastic levelling is provided by the north wall of the building, which is represented by a single layer, 4 inches thick and  $2\frac{1}{2}$  feet wide, of small blue cobbles set on end and packed in red clay. This is plainly the foundation for a stone wall, and the fact that it overlaps the heel of an Agricolan sleeper-trench (Plate V, 2) shows in striking fashion that the wooden buildings had now been replaced in stone. Further, the planning of the new buildings is different. The north wall of the stone building just described, a narrow building not more than 12 feet wide overall, overlaps the south wall of the Agricolan building, which is largely covered by a cobbled roadway 23 feet wide. This roadway does not cut into the subsoil, as does the stone building, but rides on top of the Agricolan level, preserving and sealing it. Its north edge has, however, been removed, once more by one of Dr Curle's trenches, which was following the south wall (Plate II, 2) of a stone building 57 feet wide and 224 feet long, discovered<sup>2</sup> and planned in 1908. This foundation is  $3\frac{1}{2}$  feet wide and 6 inches deep, composed of two rows of cobbles and broken trachyte, again set in red clay. Like the stone foundation already described, it is set well into the subsoil. Similarly, the top surface of the subsoil, together with any Agricolan floor or street that it may have carried, has been cut away in order to furnish the building with a natural clay floor, in which, as before, only the heel of an Agricolan sleeper-trench is left. The floor of natural clay thus formed is covered with a thick layer of occupation-earth, among which was much wattle-and-daub, large lumps of which also bestrewed the road-surface south of the building. This material clearly indicates that the stonework carried a timber-framed superstructure largely built of wattle-and-daub, which in turn explains why such care was taken to secure a level stone foundation by setting the stonework deep on the upper side of the slope. The main sills for a framed building, as all erectors of prefabricated buildings know, must be laid dead level if the superstructure is to be successfully erected at all. A further point here emerges. The Agricolan buildings also were built with timber-framing and wattle-and-daub, but their foundations were wholly of timber, as is shown by remains already described (p. 3). Thus, the difference between the

<sup>1</sup> *Newstead*, 42.<sup>2</sup> *Ibid.*, 65-66.

Agricolan buildings and those which followed them is not in their superstructure but in their foundation. The reason for such a change is evident. Wooden buildings set in a damp subsoil rapidly and inevitably begin to rot.

### LATE DOMITIANIC FORT, NEWSTEAD

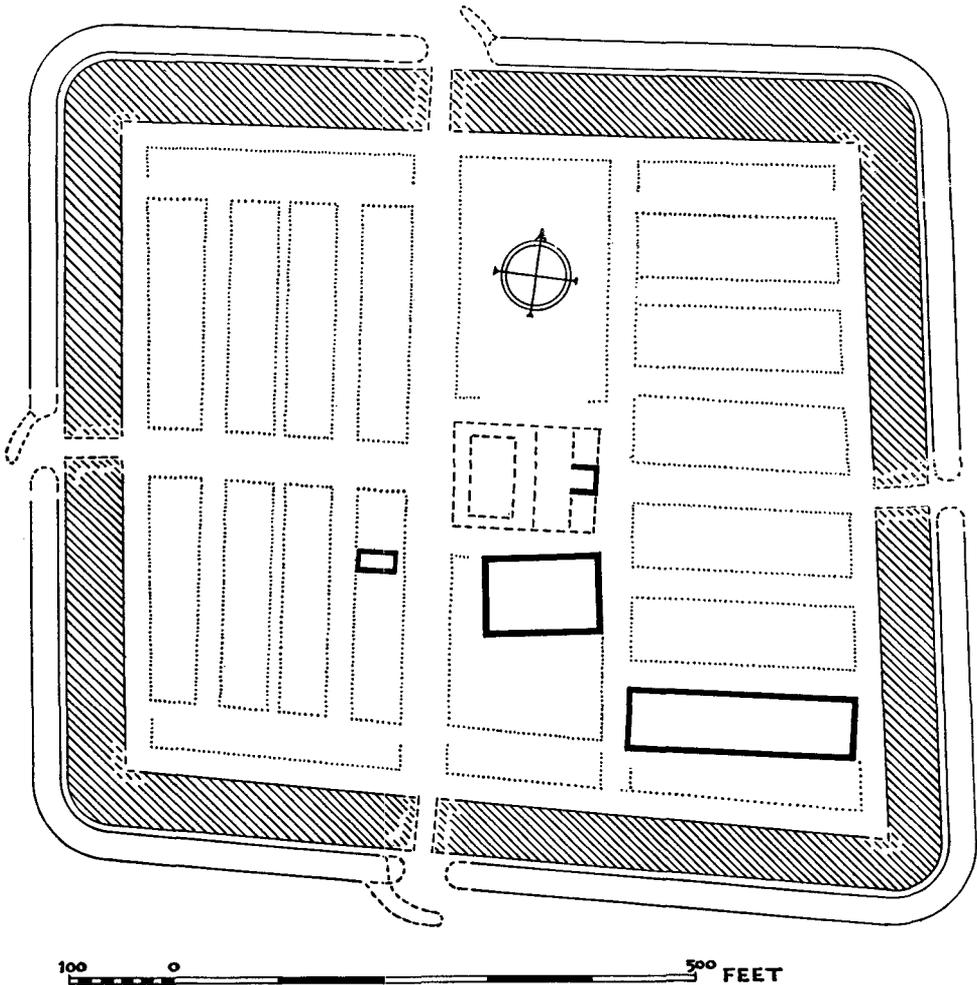


Fig. 3.

But buildings constructed with a wooden framework raised high and dry upon stone sills will last for generations if the woodwork is adequately weather-proofed, and this can be achieved easily and cheaply by lime-washing the exterior. The change is thus a structural economy, and one, moreover, which would quickly be called for in a soil so damp as that of

Newstead. Its object is to eliminate heavy and wholesale routine repairs, a policy just as indicative of an intention to settle down on the site as the creation of the massive rampart and ditch. Equally, the heavily burnt wattle-and-daub suggests that the buildings in due course perished by fire.

The buildings discovered in this section do not stand alone. As is well known, they form part (fig. 3) of a series of early stone buildings discovered by Dr Curle, and by him recognised as part of the main central series. The first, lying below the south granary of the Antonine fort and measuring 80 feet wide by 115 feet long, is itself pretty certainly a twin granary.<sup>1</sup> The second, of which only fragmentary remains were discovered, was acutely identified<sup>2</sup> by Dr Curle as the *sacellum* of a westward-facing *principia*. There is nothing surprising about this. If the less important buildings in the *retentura* had stone foundations, principal buildings thus constructed may be expected as a matter of course, and these too may well have been half timbered.

The garrison of this fort is, however, not so easy to define. The stone building with which contact was made was 57 feet wide and must surely be recognised as a double barrack-block.<sup>3</sup> Its clay floor, with abundant occupation-material and pottery, will not suit a stable. In this case, however, its length of 224 feet is quite abnormal for a barrack in an auxiliary fort;<sup>4</sup> it comes so much closer to the legionary barrack,<sup>5</sup> some 250 feet long, as to raise the question whether legionary soldiers were there in garrison. The ample evidence for their presence during the Antonine occupation (see p. 19) must not be allowed to obscure the existence of evidence of the same kind in relation to the first-century garrison. Legionary swords and a helmet came from pit LVII, below the Baths, in association with first-century pottery.<sup>6</sup> On the other hand, this pit also produced<sup>7</sup> unmistakable auxiliaries' equipment. Thus, if legionaries were in garrison at this epoch, they were not alone. The condition of the armour, moreover, was eloquent of disaster, and this corresponds to the evidence pointing to firing of the buildings, in the form of burnt wattle-and-daub.

### *Period III. The First Antonine Occupation.*

The third stage of the occupation clearly follows a long break, marked by the notable accumulation of 3½ feet of black silt in the great ditch of Period II. It is evident that this silt accumulated gradually, since the sides

<sup>1</sup> Twin granaries occur at South Shields, Ambleside, Hardknott, Brecon Gaer, Housesteads, and back to back, at Birrens.

<sup>2</sup> *Newstead*, 52.

<sup>3</sup> For dimensions cf. Fendoch, *PSAS.*, lxxiii. 135, barracks 8 and 9; Benwell, *AA.*<sup>4</sup>, xix. 25.

<sup>4</sup> For normal dimensions cf. Fendoch, *PSAS.*, lxxiii. 134-36; Housesteads, *AA.*<sup>3</sup>, xxv. 231; Gellygaer, J. Ward, *Roman Fort of Gellygaer*, 65.

<sup>5</sup> Cf. Novæsium, 240 feet; Caerleon, 242 feet (*Arch. Camb.*, 1931, 136).

<sup>6</sup> *Newstead*, 129, pl. xxxiv, nos. 11, 13, 14 (*gladii*).

<sup>7</sup> *Ibid.*, 129, pls. xxx (visor-mask), xxxiv, 10 (*spatha*).

of the waterlogged ditch caved in at two distinct levels during the process. Further, the silt is associated with the branches of growing hazels, with a heavy deposit of vivianite and the ribs of a horse. The picture thus afforded is of a waterlogged ditch gradually becoming choked with decaying rubbish, and in due course overgrown with vegetation among which young hazel trees sprouted. Comparison may most readily be made with the ditches of the Agricolan fort at the Bar Hill, which were found by their excavators<sup>1</sup> to have been similarly choked and overgrown when the builders of the Antonine Wall laid out their new fort on the site. Faced by these conditions, the Roman engineers at Newstead, much as at Bar Hill, began their work by sealing off the old choked ditches with a layer of clay, here 5 feet thick and whitish yellow in colour.

Their next action was to dig two new ditches (see fig. 1), the inner 8 feet wide and  $3\frac{1}{2}$  feet deep, the outer 6 feet wide and 3 feet deep. The profiles of these ditches are abnormal. They accord neither with the normal V-shaped ditch or *fossa fastigata*,<sup>2</sup> nor with the *fossa punica*,<sup>3</sup> with its vertical outer scarp and sloping inner scarp. In each of them the outer scarp is not vertical, yet very much steeper than the inner scarp, and, if a term of classification is wanted, they could legitimately be categorised as semi-Punic. Moreover, like the Punic ditches at Cawthorn,<sup>4</sup> they are associated with a field of fire situated some distance away from the defences with which they are connected. The field in question is 32 feet wide, and the inner ditch is 25 feet in front of the contemporary fort-wall. But the most remarkable feature of these ditches is their filling. The lower part of this was composed of small coagulated lumps of very heavily percolated soil, neither silted nor compressed, resembling most closely the kind of heavily leached lumpy soil which gathers under a privet hedge in a neglected garden. It must be taken in connection with the fact that the steep scarp of the outer ditch showed distinct traces of a wood deposit. The suggestion may therefore be made that the function of these deep and narrow channels was to hold an obstacle<sup>5</sup> composed of entangled branches, the barbed-wire entanglement of its day. The suggestion is made with the more confidence when it is recalled that at Vetera<sup>6</sup> the Claudio-Neronian legionary fortress exhibited remains of just this kind of entanglement (*Astverhau*), though the ditches holding it had much narrower proportions.

The supersession of the great ditch of Period II by the inner semi-Punic ditch is evident from the fact that both the outer lip and the clay-filling of the great ditch are cut away by it. A strictly comparable relationship is

<sup>1</sup> Macdonald and Park, *The Roman Forts on the Bar Hill* (Glasgow, 1906), 14-15.

<sup>2</sup> *De mun. castror.*, 49.

<sup>3</sup> *Ibid.*

<sup>4</sup> *Arch. Journ.*, lxxxix, 72-73.

<sup>5</sup> Livy, xxxiii. 5, 9; Polybius, xviii. 18.

<sup>6</sup> H. Lehner, *Das Römerlager Vetera bei Xanten* (Bonn, 1926) 19, Abb. 6, 7, 8.

discernible between the rampart of Period II and the new fort-wall. The trench in which the wall-foundation is laid is dug not merely through the rampart itself, but also through the accumulated silt which had gathered in front of it in a layer  $2\frac{1}{2}$  feet deep. It will be observed, in particular, that, if the pink clay rampart of Period II had been built against the back of an existing stone wall, the foundation-trench of the wall must itself have been dug in the subsoil and could not have been dug in the rampart. Secondly, the clay of the rampart would have been packed tight against the stonework, whereas it is in fact separated from it by dark earth which has slipped down the side of the trench. In short, the relationship of wall-foundation to rampart clearly indicates that the wall was erected only after the rampart had fallen into such decay that silt had gathered in front of it to the depth of  $2\frac{1}{2}$  feet. It can thus be demonstrated that the erection of the new fort-wall, like the digging of the semi-Punic ditches, followed a lengthy period of neglect or abandonment. There can accordingly be no doubt that on the rampart, just as in the ditches, we are dealing with the Antonine occupation, which followed well over thirty years of neglect. The builders of the new wall plainly no longer appreciated what was subsoil and what was not, but worked from the surface of the collapsed rampart-front as they found it, digging a foundation trench 3 feet deep and 7 feet wide (Plate III, 1).

The foundation which the trench contained was exceptionally carefully laid. It was formed partly of the local trachyte, but mostly of large river-cobbles set in very tough red clay. It is 6 feet wide and 3 feet deep. Nothing remained, however, of the masonry superstructure which the foundation had carried, except a scatter of broken sandstone blocks immediately below the plough, including one fragment of a chamfered plinth. It is, then, clear that the masonry of the wall proper had once begun immediately above the surviving foundation, though all stonework in position had vanished. Allowing for offsets, this wall can have been little more than 5 feet thick, and thus matches the masonry walls<sup>1</sup> of the forts on Hadrian's Wall rather than those of the Antonine Wall. These walls were all designed<sup>2</sup> with an earth bank to rear, carrying a lower rampart-walk supplementing the parapet-walk on top of the wall itself. And, although at Newstead nothing of an earth bank recognisably contemporary with the fort-wall now remains, owing to the removal of everything above foundation level, the occurrence of an Antonine oven, inserted just beyond the rampart backing at a distance of 39 feet to rear of the wall, is in itself good enough evidence for the original existence of such a bank. The bank itself was doubtless a refurbishing of ramparts I and II, for the new earth bank is not likely to have been as high

<sup>1</sup> Benwell, 5 feet, *AA*<sup>4</sup>, xix. 8; Halton, 5 feet 9 inches, *AA*<sup>4</sup>, xiv. 155, 159; Birdswald, 5 feet, *CW*<sup>2</sup>, xxxii, 255, fig. 10; Balmuildy was  $7\frac{1}{2}$  feet thick: see S. N. Miller, *The Roman Fort at Balmuildy* (Glasgow, 1922), 7; Castlecary,  $7\frac{1}{2}$  feet thick, *PSAS*, xxxvii. 289.

<sup>2</sup> This question was first precisely discussed for British examples by S. N. Miller in *JRS.*, xv. 177-78.

as the estimated height for rampart II since it is related to stone defences. The height of the stone fort-wall will hardly have exceeded that of the York fortress-wall,<sup>1</sup> of which the parapet-walk is  $15\frac{1}{2}$  feet high, while the rearward earth bank still exhibits its walk at a height of 9 feet.

The oven was a well-built structure of stone and clay, about 5 feet in diameter, of which the ash-covered floor remained. In front of it a saucer-like depression served as stoke-hole or ash-pit. Then followed a vacant strip of ground, 7 feet wide, providing elbow-room near the centre of cooking. The strip was delimited by a road 12 feet wide, made of broken red sandstone bottoming carrying a 3-inch layer of gravel. This is the *intervallum* road recorded<sup>2</sup> by Dr Curle, and it borders his barrack-block I, of which the walls were recovered precisely as by him recorded, together with the diagonal trench which it was his custom<sup>3</sup> to cut across each division within the block, this being the fourth room or *contubernium* from the west. The walls are carried upon a double layer of river-cobbles, very carefully laid<sup>4</sup> in thick red clay, and are themselves built of well-dressed sandstone blocks, 5 inches high, from which the masons' fragments provided the road-bottoming mentioned above. The south wall, 2 feet 8 inches wide, is built (Pl. IV, 1) directly on the *intervallum* road of Period II and has no offsets, no doubt because of the firm surface upon which it rests. The north wall (Pl. IV, 2) is laid directly upon the wall-foundation of Period II, from which the stonework must have been systematically stripped, and is furnished with a three-inch offset on each side (Pl. V, 1). Both walls are entirely set in clay as opposed to mortar and presumably belong to half-timbered buildings.<sup>5</sup>

From this point northwards the plough and, perhaps, systematic clearing of the site for agriculture<sup>6</sup> have left little of the Antonine structures. Only under the lee of the south wall of barrack II, which has itself been totally removed, is there preserved a small fragment of the roadway between the barracks.

#### *Period IV. The Second Antonine Occupation.*

Clear evidence for a second Antonine occupation is furnished by the ditch system. The two semi-Punic ditches were now deliberately filled with upcast from a newly-dug series of three ditches. The filling was shot in layers on top of a small accumulation of the coagulated earth which has already been described. There was no growth or silting, and it seems clear that no long gap separated the two occupations. The new ditches were

<sup>1</sup> S. N. Miller, *JRS.*, xv. 177-78.

<sup>2</sup> *Newstead*, 33.

<sup>3</sup> *Ibid.*, 42.

<sup>4</sup> Mr S. N. Miller, who saw these remains exposed, considered them to be the finest work of the kind he had seen in Scotland.

<sup>5</sup> As at Chester: see *Journal of the Chester and North Wales Architectural and Archaeological Society*, N.S., xxxviii, 5, pl. ii. 1.

<sup>6</sup> For agricultural clearing about 1820 see *Newstead*, 5, quoting *Archæologia Scotica*, iv. 422.

all V-shaped *fossæ fastigatæ*. The outermost, 13 feet wide and 5 feet deep, contained half a sandstone quern and the rim of a late Antonine cooking-pot (p. 36, no. 17), and these objects lay in a bed of silt which half filled the ditch and was in turn covered by wash from the upcast mound to south, and finally by material ploughed down from the mound at a much later date. It is thus clear that this ditch remained more or less open until ploughing began, and so falls into place as the latest ditch in use on the site, which gradually silted up during long centuries of desuetude. Similar conditions appear in the middle and innermost ditches, which thus plainly belong to the same series (see fig. 1). The middle ditch is  $10\frac{1}{2}$  feet wide and  $3\frac{1}{2}$  feet deep, and the innermost 13 feet wide and 3 feet deep. But, while the outermost and middle ditches were dug in normal boulder-clay subsoil, the innermost ditch was dug in the finer grade clay-filling sealing the great ditch of Period II. Its profile is therefore less sharp and much more weathered than that of a ditch cut in natural subsoil, and it is the difference in colour, between the chocolate-toned filling and the surrounding mass of whitish-yellow clay, rather than a crisply defined profile, that makes the V-shaped form distinct.

No trace of work contemporary with the three ditches survives on the fort-wall. But at the rear of the earth bank a mass of clean material covering the demolished oven of the first Antonine period represents a backward extension of the rampart. This shelters part of the new *intervallum* road, which has a light gravel surface 3 inches thick resting upon 8 or 9 inches of heavy cobbled bottoming. The surviving portion,  $7\frac{1}{2}$  feet wide, represents all that is left of an original width of 11 feet. It should be emphasised that both the new rampart-backing and the new *intervallum* road are not routine repairs to existing structures but take their place<sup>1</sup> as entirely new creations, which are as distinctive as the triple ditch system already described. Of the buildings of this period, however, nothing had been left by the plough. Dr Curle assumed that the barracks of Period III had been re-used, and this is the more likely now that proof has been obtained of their timber-and-daub superstructure (see p. 14). If such buildings were destroyed, it would be easy to lift the burnt or tumbled framework off the stone sills which carried it, and to use the sills, either unaltered or heightened, for the new framing of the next period.

#### *The Period of the "Reducing-wall."*

The section so far described may be regarded as having produced abundant and satisfactory evidence for two Flavian and two Antonine structural periods. But it could not shed light upon the relationship of these four phases to the so-called reducing-wall in the *retentura* of the

<sup>1</sup> That is to say, they blot out and extend over the structures of the previous period; they do not refurbish them.

# NEWSTEAD 1947

# THE ANTONINE DIVIDING-WALL

E W

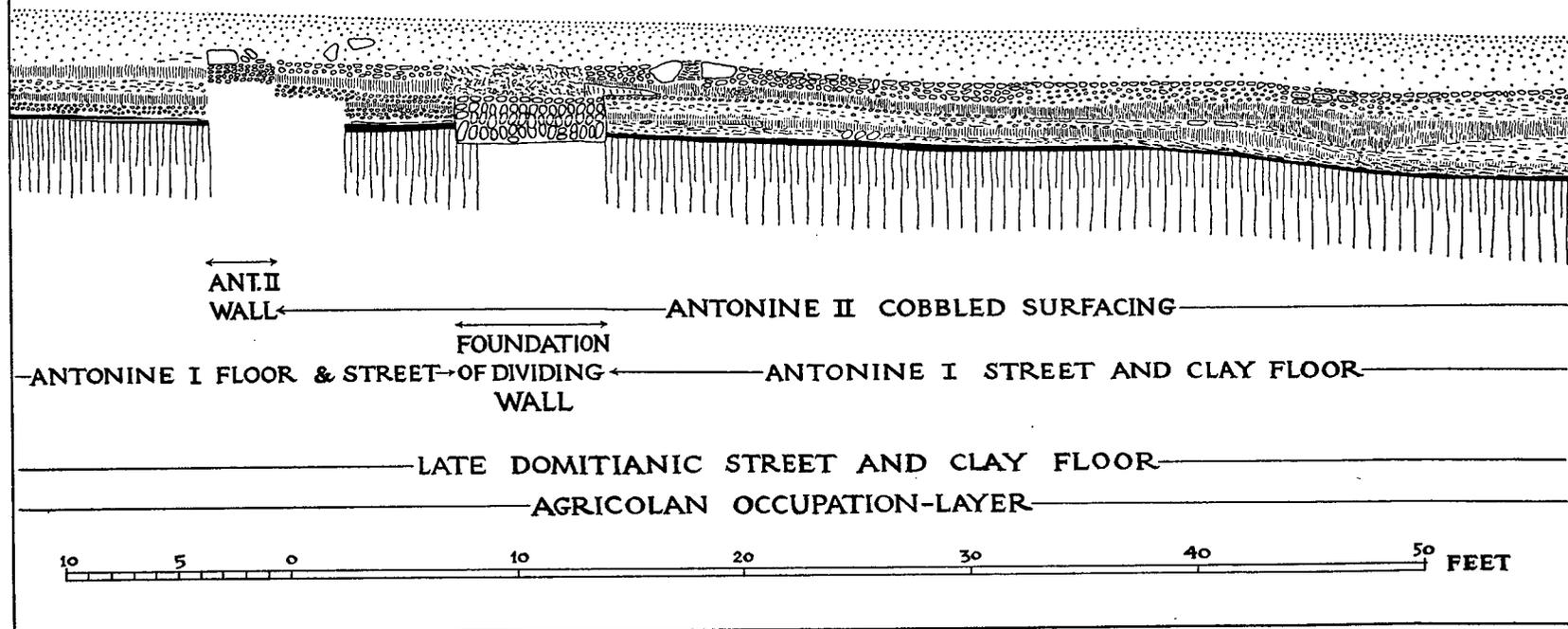


Fig. 4.

Antonine fort. It was, however, the existence of this wall which had led Dr Curle to postulate<sup>1</sup> not four but five periods of occupation, in which the Antonine fort, built to full size in a third period, was reduced by cutting off a large portion of its *retentura* in a fourth period, and in due course thrown open again to full size in a fifth and final phase. A second section (fig. 4) was therefore cut across the line of the reducing-wall, at a point 120 feet north of the south wall of the fort. It was designed to be 70 feet long, in order to ascertain whether, as Dr Curle thought, there had been neither an earth bank behind the wall nor any ditch in front of it.

The topmost layer in the trench comprised 3 feet of imported earth, strewn over the whole site<sup>2</sup> in order to ensure growth after the digging of 1910. Below this layer came a continuous band of heavy pitching, formed of cobbles and broken building stone, from the top surface of which many of the walls recorded by Dr Curle had been stripped. The open drain close to the west edge of building XXII was, however, still in position, together with a wall not hitherto recorded. The pitching was quite undisturbed except by the trench cut in 1908 for the purpose of tracing the reducing-wall. It yielded no pottery; but a chink in the east side of the open drain produced an *aureus*<sup>3</sup> of Trajan, with the rare reverse legend REX PARTHVS and the accompanying scene of *proskynesis* before Trajan and his army by the puppet-king Parthamasiris in A.D. 116. The coin was in good preservation, though considerably rubbed before it was lost—a condition “very like that of the Corbridge gold hoard of about A.D. 160,” as Mr Mattingly remarked upon seeing the piece. Thus, so far as it went, this coin tended to confirm an Antonine date for the layer. It should also be observed that the condition in which this surfacing was found, stripped of all walling, helps to explain the state of affairs observed by Dr Curle in the northern half of the *retentura*, where he found<sup>4</sup> nothing but a pitched space and assumed that this represented an open space used for a stores-dump. In the light of present information it can be regarded as a pitching covering the whole area, upon which the latest buildings of the Antonine period rested until they were removed by stone-robbers or agriculturalists.

The dating of this pitching to a second period of the Antonine occupation was amply confirmed by the pottery found below it, or embodied in its make-up. This was all of earlier Antonine date (see p. 34 ff.). The early Antonine layer, too, was evidently contemporary with the so-called reducing-wall. As was noted almost everywhere<sup>5</sup> by Dr Curle, whose trench was clearly defined, no superstructure of this wall remained. But there was a beautifully laid foundation (Pl. III, 2) of large blue river-cobbles set in

<sup>1</sup> *Newstead*, 85.

<sup>2</sup> The fact that this happened was clearly recollected by Mr Porteous, who remembered the event as a youth.

<sup>3</sup> *BMC.*, iii. 106.

<sup>4</sup> *Newstead*, 71.

<sup>5</sup> *Ibid.*, 34.

stiff red clay,  $6\frac{1}{2}$  feet wide and 3 feet deep, so very closely resembling the fort-wall discovered in Section I that there could be no doubt it was the work of the same builders. This observation was the first clue to the early Antonine association of the reducing-wall; but exact stratigraphical proof was shortly forthcoming. In laying the foundation, from which nothing had been removed except the superincumbent masonry, the soldiers had proofed the top of its outer, or western, edge with a broad fillet of stiff yellow clay. This fillet rested upon the clean Antonine surface of gravel and cobbles, and was in turn overlaid by the occupation-layer of ash and debris which had accumulated on that surface. It was thus evident that the finishing touches to the foundation followed the laying of a metalled surface against it, but preceded the occupation for which the surface was intended. In other words, the laying of the so-called reducing-wall was exactly contemporary with the laying down of the early Antonine surface.

Below this surface occurred a condition strikingly different from any yet encountered on the site. The surface itself was bedded in a thick mass of laid clay, which sat on top of a thick layer of peaty mud. Below this again were two layers of occupation, sometimes distinct and sometimes merging into one another. A considerable amount of timber and boarding was associated with the lowest layer. Neither layer, however, was productive of pottery, and both were difficult to examine owing to thick black mud and a brisk flow of water which required frequent use of a pump. Despite these hindrances, it was possible to recognise in these two lower layers, so close to one another, the remains of the two pre-Antonine occupations, and to understand also what had produced the marsh-like deposit in which both were engulfed. When the ramparts at the west end of the fort were laid down they encircled what was already a natural hollow, fed from the east end of the site and appreciable upon the ground to-day. In the Roman design drains were certainly provided to deal with accumulating water. But when the fort was deserted and the drains became choked the whole area would be converted into a waterlogged pool or marsh. The development of such a condition between the late Domitianic and Antonine occupations is thus excellent proof of the abandonment of the site, and goes with the gradual silting up of the great ditch of the late Domitianic fort.

It is now clear that the Antonine occupation exactly contemporary with the so-called reducing-wall was the first Antonine phase, and that in this part of the site, as on the south rampart, it was followed by one further phase of occupation only. It is, then, no longer possible to view the reducing-wall as a fourth phase, representing a reduction in size of the Antonine fort. It is a feature which belongs to the Antonine fort from its inception. It is, moreover, clear that Dr Curle was right in thinking<sup>1</sup> that there was no ditch in front of it and no bank behind it, for an unbroken

<sup>1</sup> *Newstead*, 34.

occupied surface in fact runs up to either side of the feature. There is, on the other hand, no doubt that it is the wall of a fortification; its very thickness guarantees this conclusion, and the plan of the west gate included in it confirms the point. Further, its close resemblance to the south wall of the fort, as revealed in our Section I, implies that the two works were erected by the same builders. A striking difference, however, now emerges between these walls and the west wall of the Antonine fort. The south wall of the Antonine fort is carried upon a foundation 6 feet wide and 3 feet deep, and the reducing-wall is similar. But the west wall of the fort was carried on a foundation<sup>1</sup>  $8\frac{1}{2}$  feet wide and only 9 inches deep. Dr Curle's photograph of this wall<sup>2</sup> also shows that it was a reconstruction, since its masonry plainly lies upon a mass of old building-material and not upon systematically laid footings. If, then, the west wall had two phases, involving complete reconstruction, as is apparent, this state of affairs matches the two Antonine occupations proved in Sections I and II, and the first phase should belong to the first Antonine occupation. In other words, during the first phase of the Antonine fort the full circuit existed as well as the reducing-wall, the only difference being that the defences of the eastern two-thirds and the reducing-wall were built in one style, while the defensive wall of the western third was built in another. The western third thus emerges not as an abandoned area, cut off by a reducing-wall, but as a separate occupied area with its own build of wall, additional to the eastern two-thirds yet forming a continuous whole with the main circuit. The so-called reducing-wall thus effects not a reduction but a division, a fact which completely explains the absence of bank or ditch. It must henceforward be known as the "dividing-wall."

Before attempting to define the purpose of the western enclave, it will be well to examine the main part of the enclosure (fig. 5). This contains twelve barracks, capable of accommodating either the twenty-four *turmæ* of an *ala milliaria* or the twelve *centuriæ* of two *cohortes quingenariæ* brigaded together. There is a large *principia*, two big granaries and a commandant's house; in addition, there is space<sup>3</sup> for at least another commandant's house and other buildings. From the *principia* well<sup>4</sup> came a variety of objects, sealed by a deposit of building-stones and an altar, either thrown there during a destruction or deliberately deposited in an attempt to tidy the site. The altar<sup>5</sup> was dedicated by a legionary centurion, C. Arrius Domitianus of the Twentieth Legion, who was also responsible for extra-mural dedications<sup>6</sup> to Diana and Silvanus. This comprehensive series of dedications, of which it may be assumed<sup>7</sup> we have now only a part, indicates,

<sup>1</sup> *Newstead*, 33.

<sup>2</sup> *Ibid.*, pl. vi, 1.

<sup>3</sup> See *Newstead*, 38, plan.

<sup>4</sup> *Newstead*, 48-49, 116-117.

<sup>5</sup> *EE.*, ix, 1235 = *Newstead*, pl. xvi.

<sup>6</sup> *CIL.*, vii, 1081 (Silvanus); *EE.*, ix, 1234 = *Newstead*, 143 (Diana).

<sup>7</sup> For a comprehensive series of dedications by a new commandant of Maryport, *CW.*<sup>2</sup> xxxix, 23.

# FIRST ANTONINE FORT AT NEWSTEAD



BATH-HOUSE OF THE EQUITES

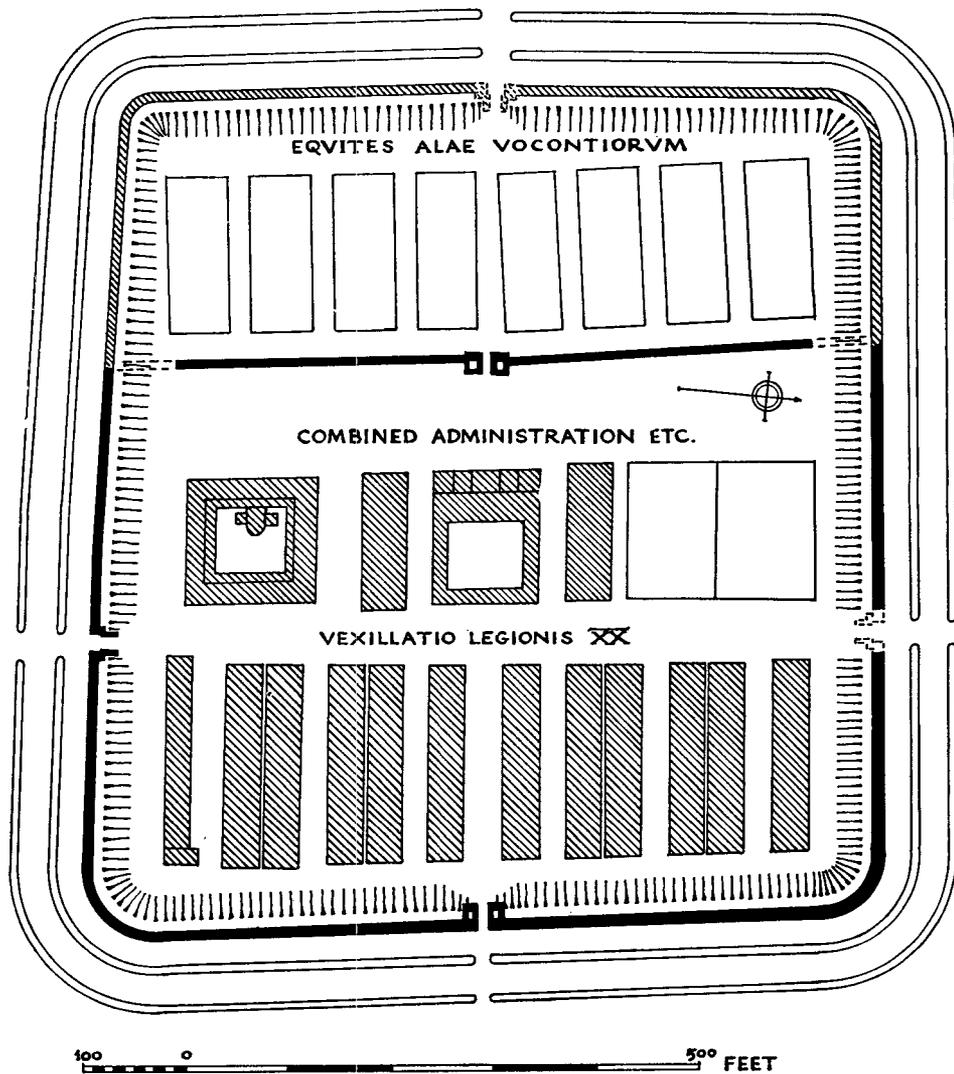


Fig. 5.

as surely as the dedication to Jupiter Optimus Maximus, that Domitianus was commanding officer at Newstead. Since, too, he states his unit on each occasion as the Twentieth Legion and no other, he cannot, like not a few legionary centurions,<sup>1</sup> have been placed in charge of an auxiliary cohort. He must be regarded as having commanded a detachment of his own unit—that is to say, a *vexillatio* comprising two *cohortes quingenariæ*—as Cheesman<sup>2</sup> long ago conjectured and as Curle<sup>3</sup> also suggested.

This explanation satisfactorily disposes of the eastern twelve barracks. What, then, was the purpose of the western enclave? Dr Curle was inclined to think<sup>4</sup> that it served partly for stabling and partly as a barrack-yard. But his stone buildings indicative of stabling were of the second Antonine phase, and it can now be stated with confidence that the gravelled surface which underlay them and which alone remained in the northern half of this part of the site belonged to this period also. It is further clear that the gravelled surface was a preparatory bottoming of the site and not the hard-stand for a stores-dump. The buildings of the first Antonine phase lie deeper and were not in fact recovered either by Dr Curle or ourselves. Only the size of the area itself is available as evidence for what it may have contained, so far as structural evidence is concerned. But a valuable clue of another kind comes from outside the area. In 1783 an altar<sup>5</sup> was found some two hundred yards east of the fort, dedicated to the *Campestres* or goddesses of the Parade Ground, by a decurion of the *ala Augusta Vocontiorum*. The style of the lettering and of the man's name, Ælius Marcus, betoken the second century, and must therefore refer to a unit in garrison during the Antonine period. But the *ala Vocontiorum*<sup>6</sup> is a quingenary *ala*, and cannot have occupied the whole of the large area thrown open in the second Antonine phase, which is in fact suited to an *ala milliaria*. An *ala quingenaria* is much too small, and two *alæ quingenariæ* much too large, to fill the space. The *ala quingenaria* must therefore belong to the first Antonine phase, and experiment shows that if the appropriate accommodation of four double barrack-blocks and four double stable-blocks is superimposed upon the western area of the fort, it will exactly fit the area. This leaves the administration and stores in company with those of the legionaries in the eastern two-thirds of the fort, where there is ample room for them at the north end of the range of principal buildings, beyond the north granary (site xvi). How the buildings were planned is not clear. The units may possibly have shared a headquarters; indeed, the exceptionally large size of the building and the combination of legionary and auxiliary armour found in the well suggests very strongly that they did so. But a commandant's

<sup>1</sup> Cf. *EE.*, vii. 1071, *EE.*, ix. 1157 = *ILS.*, 9151, where Dessau cites other examples.

<sup>2</sup> *The Auxilia of the Roman Imperial Army* (Oxford, 1914), 27; hereinafter referred to as *Auxilia*.

<sup>3</sup> *Newstead*, 74–75.

<sup>4</sup> *Ibid.*, 71–72.

<sup>5</sup> *CIL.*, vii. 1080 = *Newstead*, 140–141.

<sup>6</sup> *Auxilia*, 147.

house would probably be required, and perhaps extra granaries, and the space available is nicely adequate to both needs.

But despite the feasibility of combining or juxtaposing on the official side the administrative accommodation for both units, the marked differences between them must not be overlooked. As between a *vexillatio legionis* and an *ala* the distinctions were many and sometimes invidious. The commandant of an *ala*, already at least an equestrian by birth or Imperial favour, was senior<sup>1</sup> in social and military standing to the legionary centurion, who became an equestrian only upon leaving the centurionate. On the other hand, the ranker legionaries, already Roman citizens, were superior in social status to the auxiliaries, who were normally *peregrini* only and Roman citizens only in prospect; the legionary also received more pay<sup>2</sup> and was subject to a different discipline, with different degrees of punishment.<sup>3</sup> Thus, while collaboration and understanding may be assumed at the officer level, it cannot be taken for granted among the lower ranks.

The brigading of legionaries and auxiliary troopers together is thus in every way adequate to explain the arrangement by which they are contained within one fortification and yet divided from one another as regards the men's lines. But it also makes it possible to explain for the first time certain structural peculiarities. When Dr Curle faithfully and methodically traced the whole surviving length of the dividing-wall, he discovered<sup>4</sup> that to north and south it petered out just where the Antonine rampart-backing begins. So long as the structure is considered as a reducing-wall this disappearance of the feature was a stumbling-block, since it was impossible to think that the angles of a reduced fort should not have been contained by a continuous wall and most difficult to suppose that the foundations of such a wall should have been removed when they were preserved everywhere else. But a dividing-wall could very properly have been arranged to terminate against the rampart-backing by running up its slope;<sup>5</sup> and there can be no doubt now that, although the precise arrangement is beyond recovery, this is substantially what happened, and the whole arrangement becomes intelligible. A second fact which is now susceptible of a ready explanation is the difference in construction between the wall surrounding the enclave assigned to the *alares* and the legionaries' wall. It is now evident that the external wall of the eastern two-thirds and the dividing-wall are exactly alike, because they do in fact together form the circuit of the legionary enclave and may accordingly be expected to have been constructed together as one and the same wall by legionaries. This will account for the very great technical ability discernible in the foundations of the walls in question, which

<sup>1</sup> *Auxilia*, 93-94.

<sup>2</sup> *Ibid.*, 35.

<sup>3</sup> Cf. Mommsen, *EE.*, vii. p. 465.

<sup>4</sup> *Newstead*, 34.

<sup>5</sup> As Curle conjectured (*loc. cit.*), though without perceiving that this made nonsense of the cross-wall except as a dividing-wall pure and simple.

are at least a class above the normal walling of auxiliary forts, and for the comparable efficiency shown in the structure of the internal buildings. On the other hand, while nothing is known of the internal buildings of the first Antonine period in the enclave of the *alares*, its surrounding wall has so inferior a foundation that it cannot be assigned to the legionaries, and would be readily explicable as a different but precisely contemporary wall constructed by auxiliary troopers. The difference in status between the two units is again reflected in the choice of ground. While the legionary barracks lie high and dry upon the summit at the east end of the site, those of the auxiliaries occupy a swampy hollow, which demonstrably required much preparatory levelling to make it fit for habitation, if in fact that object was ever quite satisfactorily achieved.

These are among the more obvious explanations of hitherto unexplained anomalies within the fort at Newstead which follow automatically from the recognition of the first Antonine occupation as a joint establishment shared between legionaries and auxiliaries. But outside the fort there is a further puzzle of which a solution can be readily based upon the new interpretation. The little bath-house<sup>1</sup> of the Antonine period, which lies outside the west gate of the fort and the auxiliaries' enclave, is not only a reconstruction on the site of a larger and earlier building; it was also enclosed for a time within a special rampart<sup>2</sup> of its own, unlike any other bath-house in Britain or elsewhere. This unique arrangement can hardly be interpreted as a special defence for the bath-house, for such a conception has no place in the tactics of fort defence. But the rampart has real meaning as a ring-wall intended to isolate the bath-house and fuel stores reserved for the use of a particular unit. At this point the size of the building also becomes relevant. It is not large enough to serve the needs of legionaries and auxiliaries combined, or even the joint needs of two legionary cohorts; but it would serve the troopers and their stable-lads, and its specific reservation would prevent quarrelling and promote concord between the two bodies of troops. The corollary of this conclusion is that a legionary bath-house still remains to be discovered elsewhere on the site.

#### *The Second Antonine Occupation.*

The remains of the second Antonine period as disclosed in Section I have already been described. But they can now be related to other structural features. They reveal a very complete reconstruction of the ditch-system and of the rampart-backing, while Dr Curle's photograph<sup>3</sup> of the west wall shows a complete rebuilding of this feature from its very foundations. The internal buildings of the eastern two-thirds of the site

<sup>1</sup> *Newstead*, 93, fig. 7.

<sup>2</sup> *Ibid.*, 95, fig. 8; for description, 97-98.

<sup>3</sup> *Ibid.*, pl. vi, 1.

appear to have been in some degree usable. The headquarters was rebuilt<sup>1</sup> upon very much the same lines, though the colonnade of the forecourt was entirely renewed, while the *sacellum* received a strong-room below ground, and a fore-hall was added astride the *via principalis*. The solidly built granaries survived the reconstruction without fundamental alteration of plan.<sup>2</sup> The same can be postulated of the twelve barrack-blocks, whose well-laid foundations would emerge little scathed on clearing the wreck of the daub walls that had buried them. The western portion of the fort, however, was no longer separated by a dividing-wall. This was now removed, and buildings rightly identified<sup>3</sup> by Dr Curle as stables were laid out across and beyond it. These buildings, however, can hardly have been confined to the southern half of the *retentura*, as Dr Curle thought. The cobbled area in its northern half can be reinterpreted, in the light of Section II, as the surface upon which buildings were erected and from which they have since been ruthlessly robbed. Further, a full complement of stabling is needed to fit the use of the twelve barracks in the *praetentura*, since, in relation to cavalry, these can only have housed the twenty-four *turmæ* of an *ala milliaria*. An equivalent twelve blocks of stabling are thus required, and this would call for all the space available in the *retentura*. Incidentally, it is of interest to observe that the addition of a fore-hall to the headquarters building synchronises, as at Halton, with the posting of cavalry to the fort, and thereby increases the likelihood of the identification of this building as a *basilica equestris exercitatoria*, to borrow the term used upon the Netherby stone<sup>4</sup> of Severus Alexander.

The identity of the unit is not revealed by any inscription. But *alæ milliariæ* were rare in the British province. The best known, and perhaps the most likely candidate for the position, is the *ala Petriana*,<sup>5</sup> stationed at Corbridge in Flavian times and at Stanwix under Hadrian and his successors. The choice of a regiment of such a site for the position marks out later Antonine Newstead as a keypoint in the network of the Lowlands. It also imparts new interest to the earlier Antonine arrangement, by which both an *ala* and a vexillation of legionaries were brigaded together, the legionaries being detached for the purpose from the *legatus legionis vicesimæ* at Chester. It seems to single out Antonine Newstead as a virtual advanced headquarters from which this part of the frontier was run. It also explains why the mileage upon the Ingliston milestone<sup>6</sup> was recorded as measured from Trimontium. If Newstead was an advanced headquarters the road-system would naturally focus upon it.

<sup>1</sup> *Newstead*, 43, fig. 2; also 44-52.

<sup>2</sup> *Ibid.*, 59.

<sup>3</sup> *Ibid.*, 70.

<sup>4</sup> *CIL.*, vii. 965.

<sup>5</sup> See E. Birley, *CW.*<sup>2</sup>, xxxix. 219, for a description of this regiment and its history in Britain.

<sup>6</sup> *CIL.*, vii. 1085.

## CONCLUSIONS.

The picture of Antonine Newstead thus emerges tolerably clear. It is a *place-forte* of great strength, containing a garrison of exceptional size, big enough to act as a miniature field-army, whatever other routine calls may have been made upon it. Its garrison was at first a mixed collection of legionaries and auxiliary troops brigaded together, the former representing approximately two-thirds of the total strength. Later, the numbers were cut down by one-third, and the legionary arm was eliminated in favour of more mobile cavalry. It is not the only sign of paring down evident upon the Antonine frontier, and must be compared, and perhaps connected, with the reduction in size of the Antonine fort at Ardoch.<sup>1</sup> It is also consonant with the growing tendency to exalt the cavalry arm, which was to reach its climax in the later third century.

The buildings of both Antonine phases were massive, and there is good reason to think that the principal buildings were throughout of stone. It is clear, on the other hand, that the stone foundations of the barracks or stables did not carry stone superstructures but were the sill-walls for half-timbered buildings. This is an important point, because it seems to make it certain that many barracks hitherto described as of stone and assumed to be entirely stone-built were in fact less permanent structures, though it need not be thought that they were in fact less comfortable. The distinction in quality observable between the legionary and auxiliary building is also of special interest, as rarely to be seen in juxtaposition. The appearance of the fore-hall in direct connection with a change to a wholly mounted garrison is also significant for the interpretation of such buildings. Lastly, the evidence from the ditches suggestive of a short gap only between the first and second Antonine phases is of high importance; while the fact that these amount to two phases only and not three, as on the Antonine Wall, is also an ascertained fact of great value, even if its historical significance is not as yet to be assessed.

The second Flavian fort at Newstead was undoubtedly the model for the first Antonine arrangement, though the ratio between legionary and auxiliary troops in its mixed garrison cannot be stated with the same confidence. Its barrack buildings appear to have been of half-timber, and this system of construction may well have been used for the principal buildings also. Its defences appear to have been exceptionally massive and high, and emphasise the importance attached by the British command to the possession of this advanced base. The most valuable result of the present excavations, however, is the demonstration that the second Flavian

<sup>1</sup> O. G. S. Crawford, *Roman Scotland*, 37, fig. 9, the "early fort" being the first Antonine fort. A comparable reduction is also seen at Cappuck, where the rampart containing the gate is plainly a reduction (*PSAS.*, xlvii, 450).

occupation, beginning soon after A.D. 86, was in fact the final phase of the earlier stage in the history of the site. A third phase is now eliminated, and with it vanishes the best ground for a late Trajanic occupation. On this point the Samian ware recovered on this occasion offers little help, but among the coarse pottery, fragment No. 4 furnishes some suggestive evidence (see p. 34). It is difficult indeed to suppose that a piece of this kind could have lain undisturbed on a road far into the second century, while the previously noted scarcity of Trajanic Samian ware from the site as a whole must carry weight.<sup>1</sup> It would be rash to carry the occupation much beyond A.D. 100 on existing evidence.

The Agricolan fort has also produced new features. The double ditch can now be deemed to have run round the entire circuit. The rampart has been defined as a massive work of permanent type, and it is also clear that it enclosed timber buildings founded in sleeper-trenches and that stables were included among them. Mounted troops were thus present in this earliest phase. These discoveries eliminate the older idea that the first fortification at Newstead was a semi-permanent bivouac, whose garrison lived in tents. The fragments of leather tents or the wooden tent-pegs found in the ditches must belong not to the occupants of the fort, but to the working-parties who reconstructed it and deposited their rubbish in the ditches which they were obliterating. It is thus clear that the Agricolan fort was designed upon permanent lines from the first. It is also clear that its massive rampart of beaten clay, once constructed, set the line to be followed in all subsequent reconstructions by the defences. The rampart might be enlarged or remodelled, but no Roman engineer ever faced the task of levelling it so as to plan the site on completely new lines. In this respect the fort contrasts sharply with such sites<sup>2</sup> as Tassiesholm or Loudon Hill, where a less uniform and lighter subsoil and ramparts of turfwork were an invitation to rebuild and remodel drastically. The source of the Newstead clay, which is obviously local, is probably a very large bowl-shaped excavation to north-east of the site, from which many hundreds of tons of clay have in the long distant past been removed.

It remains to thank those who so kindly helped with the requirements for the work. Permission to excavate was readily granted by the owner of the site, Mr David Colville of Chapel-on-Leader, and his tenant, Mr Thomas Porteous of Leaderfoot Farm, afforded us every facility for our work, including a generous supply of fencing material. The cost of the excavation was borne by the Christianbury Trust. Tents for equipment and shelter were generously lent by the 2nd Galashiels Troop of Boy Scouts through

<sup>1</sup> *JRS.*, xxv. 70-80.

<sup>2</sup> This difference is much more important for the history of sites than has often been realised. It may further be added that for precisely this reason the Newstead phases now reflect themselves more noticeably in the ditch-system than in the rampart.

their Scoutmaster, Mr J. Gaw, and surveying equipment by Mr R. G. Bruce, the Galashiels Burgh Surveyor. Local arrangements were also much facilitated by the kindness of Mrs Gordon, then the Newstead post-mistress.

THE FIGURED SAMIAN WARE. By ERIC BIRLEY, F.S.A.

The small group of figured Samian ware includes some pieces of more than usual interest, not merely as evidence for the phases of occupation at

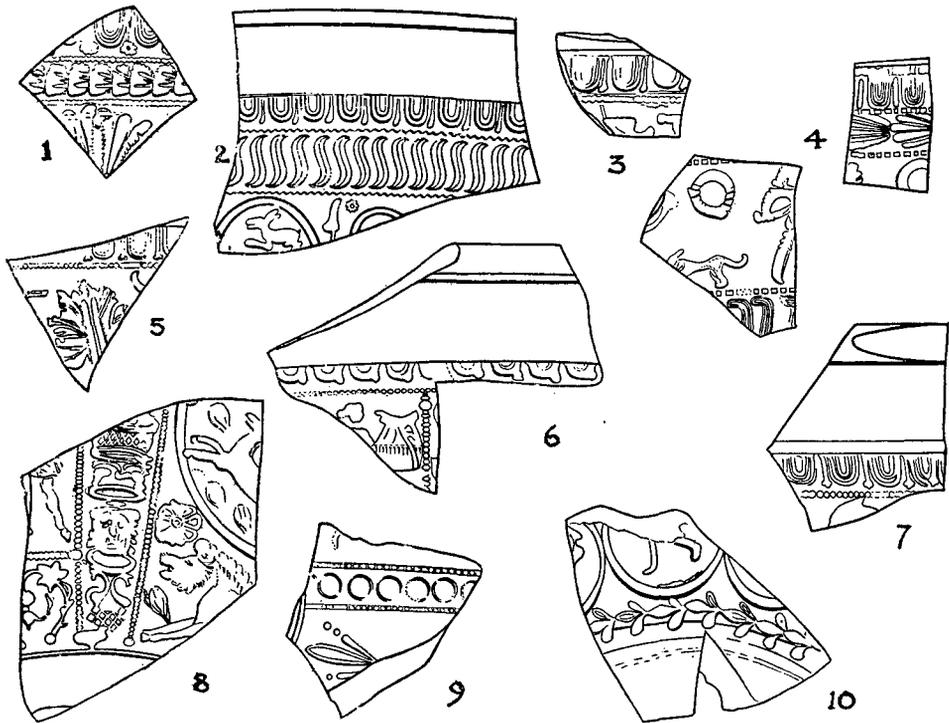


Fig. 6.

Newstead, but for the study of this category of material generally. In my study of the Lezoux pieces I have had the advantage of access to the unpublished papers of the late J. A. Stanfield, whose untimely death has been such a heavy blow to British archæology, and it is a duty and a pleasure to record the kindness of Mrs Stanfield and Mr Michael Stanfield in placing them at my disposal; in one or two instances I have had the advantage of Miss Grace Simpson's help in settling doubtful points. I am indebted to Mr Geoff Hardy for the drawings, here reproduced as fig. 6. All the bowls

are of Dragendorff's form 37; for the figure-types, O. followed by a number refers to Dr Oswald's *Index of Figure-types on Terra Sigillata*.<sup>1</sup>

1. *Flavian I.* Fragment from a bowl by the "Potter of the Large Rosette," first studied by Professor Atkinson in his paper on a hoard of Samian ware from Pompeii (*JRS.*, iv. 27 f., and in particular pl. x, no. 51—a complete bowl, probably from the same mould as the Newstead fragment). The Pompeii hoard, as he pointed out, must be regarded as a consignment received there shortly before the destruction of the city by the great eruption of Mount Vesuvius in A.D. 79; that gives an unusually close dating for the manufacture of the present piece, which may well have reached Britain in the same year: but it is obviously impossible to tell how long a period elapsed before it was broken and thrown away. The potter is probably to be identified with PAVLLVS of La Graufesenque, whose ovolo seems to be identical with the present one (cf. Roger, *Augsburg*, pl. xxxi, 6, a piece from Günzburg).

2. *Flavian II.* Part only drawn. Portion of a rather small, neatly modelled bowl: the ovolo (its egg bordered by two fine lines, the tongue bent somewhat to left), wavy lines and S-ornament in series, recur on a bowl of the same form in the Pompeii hoard (*JRS.*, iv, pl. xiv, no. 74), on which the cursive signature MIIMORIS retrograde appears below the decoration; the present bowl may therefore be assigned with confidence to MEMOR, a potter of La Graufesenque whom Dr Oswald (*Potters' Stamps*, p. 201) assigns to the period Claudius-Vespasian. The only examples of his stamps from the north of Britain, both on Dr. 27, come from Carlisle and York respectively; both pieces, like that from Newstead, were presumably imported during the decade A.D. 70-80, and the Pompeian parallel shows that the Newstead bowl is likely to have been imported a year or two before the latter date; its appearance in the later Flavian level can throw no light on the latter's terminal or initial dates, both (on any showing) later than its manufacture.

3. *Antonine I.* Worn scrap from a South Gaulish bowl. Below the ovolo and coarse wavy line may be seen part of the characteristic anchor motif (first so interpreted by Roger, *Augsburg*, 1914, p. 100). This is plainly a stray from the Flavian occupation of the site.

4. *Antonine I.* Two pieces from a bowl of unusual interest. The gladiator to r. is a copy, much reduced in size, of the South Gaulish type, O. 1020, which was used most frequently by BIRAGILLVS and M. CRESTIO, and the dog to l. is a reduced copy of another South Gaulish type, O. 2008; the reversed S-ornament, too, reminds one of South Gaulish

<sup>1</sup> Other abbreviations employed are as follows: Oswald, *Potters' Stamps*=F. Oswald, *Index of Potters' Stamps on Terra Sigillata* (1931); Roger, *Augsburg*=O., Roger's studies of Augsburg material, *Zeitschrift des Historischen Vereins für Schwaben und Neuburg*, 1913-15; *JRS.*=*Journal of Roman Studies*.

influence, as does the *straight wreath* between the ovolo and the main field of the decoration; but the *ovolo* itself and the dividing rows of *squarish beads* have no parallels on South Gaulish ware. The present bowl seems rather to belong to a class which as yet is only sparsely represented in Britain, but is comparatively common in Raetia and the southern part of Upper Germany, where the pottery which made it is perhaps to be sought (though it is customary to assign it to the fabric of Banassac in Southern Gaul). I have noticed unpublished examples at Augst in Switzerland and Bregenz in Austria, and Roger has figured several in his reports on figured Samian from Augsburg in Bavaria.<sup>1</sup> On vessels of this class, the figure-types are for the most part derived by mechanical reproduction (involving reduction in size and some loss of sharpness in detail) from South Gaulish originals, but some types have been borrowed from Lezoux,<sup>2</sup> and the ovolos and other decorative details, usually rather crude, are of local design. As yet, dating evidence (other than that suggested by typology) is virtually lacking; but an example of the same class, though attributable to a different potter, has recently turned up in an Antonine I deposit at Corbridge; the Newstead bowl has therefore probably been found in its correct level, for all that its figure-types hark back to the Flavian period.

5. *Antonine I.* *Ovolo, bead-row* below, and portions of a large *leaf and bird to l. looking back to r.* (O. 2306); the ovolo is one of those used by ATTIANVS of Lezoux, on bowls carrying his stamp OF.ATT retrograde, which may be assigned to the later phases of this potter's activity. Oswald's dating of ATTIANVS (*Potters' Stamps*, p. 29) to the period Trajan-Hadrian does not accord with the distribution of his products; at Corbridge, for example, they have come uniformly from Antonine deposits. The present piece seems likely to have been made nearer 160 than 140.

6. *Antonine I.* Portion of the rim, ovolo and upper part of the decorated zone of a bowl by the "Potter of the Small S," perhaps the most easily recognisable anonymous potter of the Antonine period. Note the *ovolo* with its knob attached to the egg, lacking an independent tongue; the figure-type, obscured by careless removal of the bowl from the mould, is a variant of *Apollo to r.*, O. 83—a favourite *motif* with this Antonine potter and many of his contemporaries. For other instances of his work found on Scottish sites cf. *Balmuildy*, nos. 43-45, 51 and 91; *Mumrills*, nos. 48, 54 and 56; *Newstead*, pp. 221, 6 and 223, 2; Curle's *Inventory* (PSAS., lxvi.) figs. 1, 11 (from Ardifuar) and 41, 12 (from Traprain). I have also noted examples from Camelon (National Museum of Antiquities) and from Carzield (Dumfries Burgh Museum).

7. *Antonine I.* Rim fragment, showing *ovolo* and *bead-row* as used by

<sup>1</sup> Cf. *Augsburg*, pls. vi, 1, vii, 1, viii, 4 (with an ovolo and bead-row not unlike those on the Newstead piece), xvi, 2, xxiii, 1.

<sup>2</sup> E.g. O. 1317 and O. 1491.

the potter DRVSVS of Lezoux on a bowl, carrying his signature below the decoration, in the Lancaster Museum; I owe the identification to Miss Grace Simpson. Below the bead-row is part of the *horse galloping l., looking back to r.* (O. 1910), which was used by several Lezoux potters. A number of pieces attributable to DRVSVS have been noted amongst Antonine I material at Corbridge; the dating suggested by Oswald (*Potters' Stamps*, p. 112, "Trajan-Hadrian") must therefore be revised, as in the case of No. 5 above and many other potters.

8. *Antonine I.* Portion of a large bowl, with elaborate panel decoration in a style characteristic of the earlier work of CINNAMVS, to whom it may be assigned without question. The *Vulcan to l.* (O. 66), *bear to l.* (O. 1666) and *stag to l.* (O. 1781) all occur on signed bowls by that potter, as do the various decorative details. To judge by the occurrence of his products in both Antonine levels at Corbridge, the working period of CINNAMVS may be assessed at 150-190; he was by far the most prolific of the Antonine potters of Lezoux, and signed and unsigned bowls by him have been noted at Balmuildy, Mumrills, Newstead, and many other sites in Scotland.

9. *Antonine I.* Fragment showing a portion only of the decorative scheme, a continuous winding scroll pattern. The *trifid ornament*, the outer arms of which end in two detached beads, while its central leaf is curvilinear and not angular, is matched on a Silchester piece (May, *Silchester Pottery*, pl. xxvii. no. 69), which has had the same general pattern and may even have come from the same mould, though not from the same part of it as the Newstead fragment; it, too, shows a neat horizontal *bead-row* above, and one of a similar series of plain *rings*, while below the decoration it carries the signature (written free-hand in the mould, and therefore reproduced retrograde on the bowl) CR of the Lezoux potter CRICIRO.<sup>1</sup> We may therefore be confident in assigning the present vessel to that potter; but it may be noted that there is another Lezoux potter, MARTIALIS, who uses the same trifid ornament, rings in series and bead-row bordering them (Knorr, *Rottweil* 1907, pl. 28, 6), and if it had not been for the close parallel to the design provided by the Silchester piece, it might have been necessary to leave open the question whether CRICIRO or MARTIALIS had made the Newstead one. CRICIRO, too, is dated "Trajan-Hadrian" by Dr Oswald (*Potters' Stamps*, pp. 96, 378), but his products turn up regularly in Antonine deposits, for example at *Mumrills* (no. 20 and p. 504).

10. *Antonine II.* Portion of a bowl, showing the lower part only of the decoration, which consisted of a continuous straight wreath formed by repetition in series of a *trifid leaf*, terminating the design; above it comes a series of medallions, each to contain a figure-type. All three elements of the leaf have a similar raised border and depressed centre, though the

<sup>1</sup> The same trifid ornament appears, together with plain rings in series bordered by neat bead-rows, on a bowl with panel decoration at *Mumrills* (no. 16); that bowl, too, is best attributed to CRICIRO.

bowl comes from a worn mould, and in most cases the detail has been obscured; it reminds one at first glance of that used by some potters of the period Hadrian-Pius (*e.g.* QVINTILIANVS and his associates), which, however, has a notched or corded central leaf. The figure-type in the central surviving medallion may be O. 417 or O. 667, but cannot be identified with certainty; only a fragment remains of that in the medallion on the left, and none of that on the right has survived. The bowl is unquestionably Lezoux ware, and its general style of decoration suggests a relatively late date, in the second half of the second century; it is to be regretted that this, the one piece of figured Samian from the second Antonine level at Newstead, cannot be assigned to a specific potter, and that it is at present impossible to produce a close parallel to its decorative scheme.

#### THE COARSE POTTERY. By J. P. GILLAM, M.A.

##### (a) *Introduction.*

Before discussing the coarse pottery recovered in 1947 it will be well to consider briefly in what way it may throw light on the history of Newstead. It is already known without its help that there were two Flavian and two Antonine forts, and that there was a long interval between the end of the second Flavian occupation and the beginning of the first Antonine. The date when each of the two main occupations began can be closely inferred. The first Antonine fort was divided by a wall which was demolished when the second Antonine fort was built. Coarse pottery may help to determine the dates of the end of the second Flavian occupation, of the dividing-wall, of the beginning of the second Antonine occupation, and of the final abandonment.

Pottery vessels are easily broken, and it seems reasonable to reckon the average life of a second-century vessel as less than ten years; authentic instances of survival for a much longer period are rare. The odds are always against any single vessel being a survival. Strays from an earlier occupation are often found in later deposits, but vessels represented by unworn pieces, or by a number of associated fragments, are unlikely to be strays.<sup>1</sup>

About two hundred separate vessels are represented by the fragments discovered; but the seventeen that have been drawn include all the best-preserved pieces. In a few instances a vessel is well preserved, closely stratified, and datable by the use of parallels, as, for examples, nos. 4, 5 and 14: these are as useful as mint coins. A description and discussion of individual pieces follows (Fig. 7).

<sup>1</sup> A fuller treatment of the question of survival will be found in the Birrens report, *PSAS.*, lxxii (1937-38), pp. 318-20.

(b) *Flavian Vessels.*

1. Found at the south end of the second Flavian barrack-building.  
Small delicate pot with narrow base, in soft orange-pink fabric. There is no evidence for the date of the type; the fabric is common in Flavian deposits.
2. Found, with No. 3, on the clay floor of the second Flavian barrack-building.  
Rim fragment, doubtless from a carinated bowl, in sandy orange-buff fabric; there is no reeding on the rim.

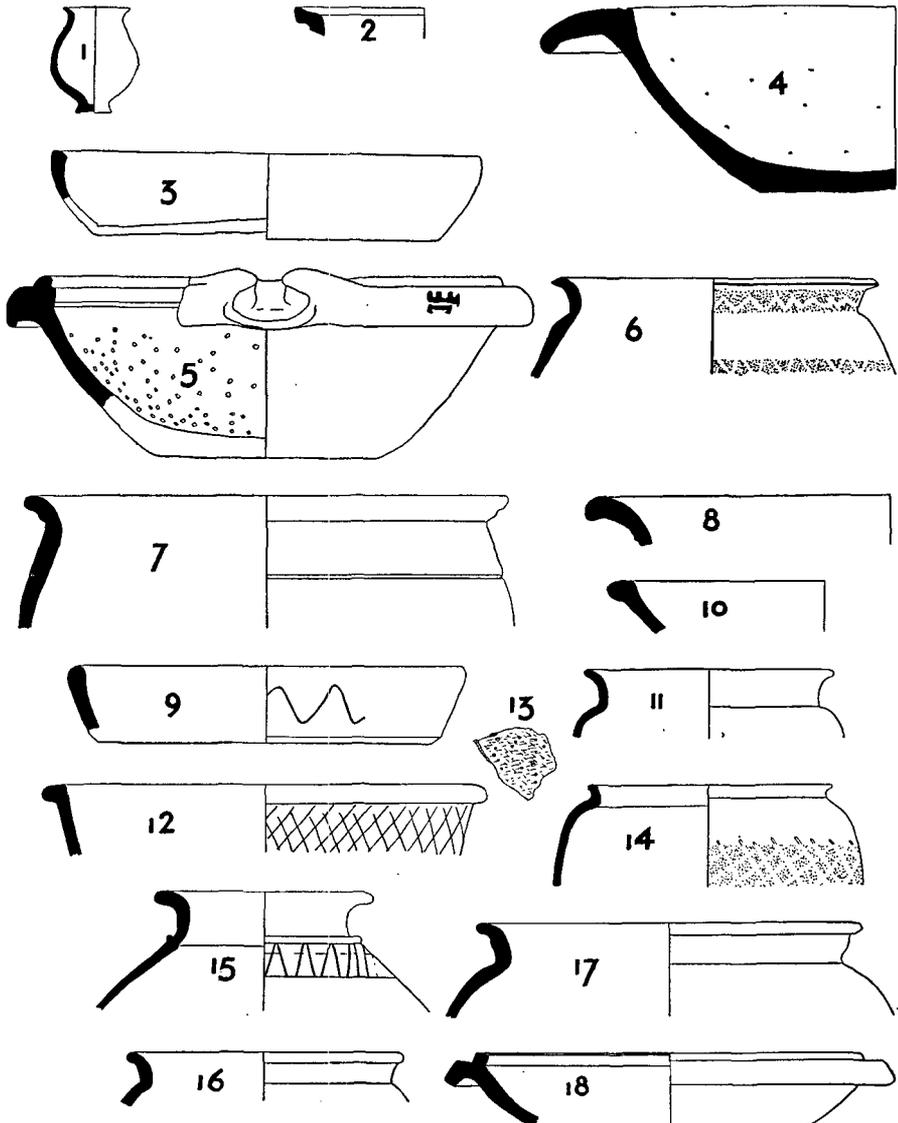
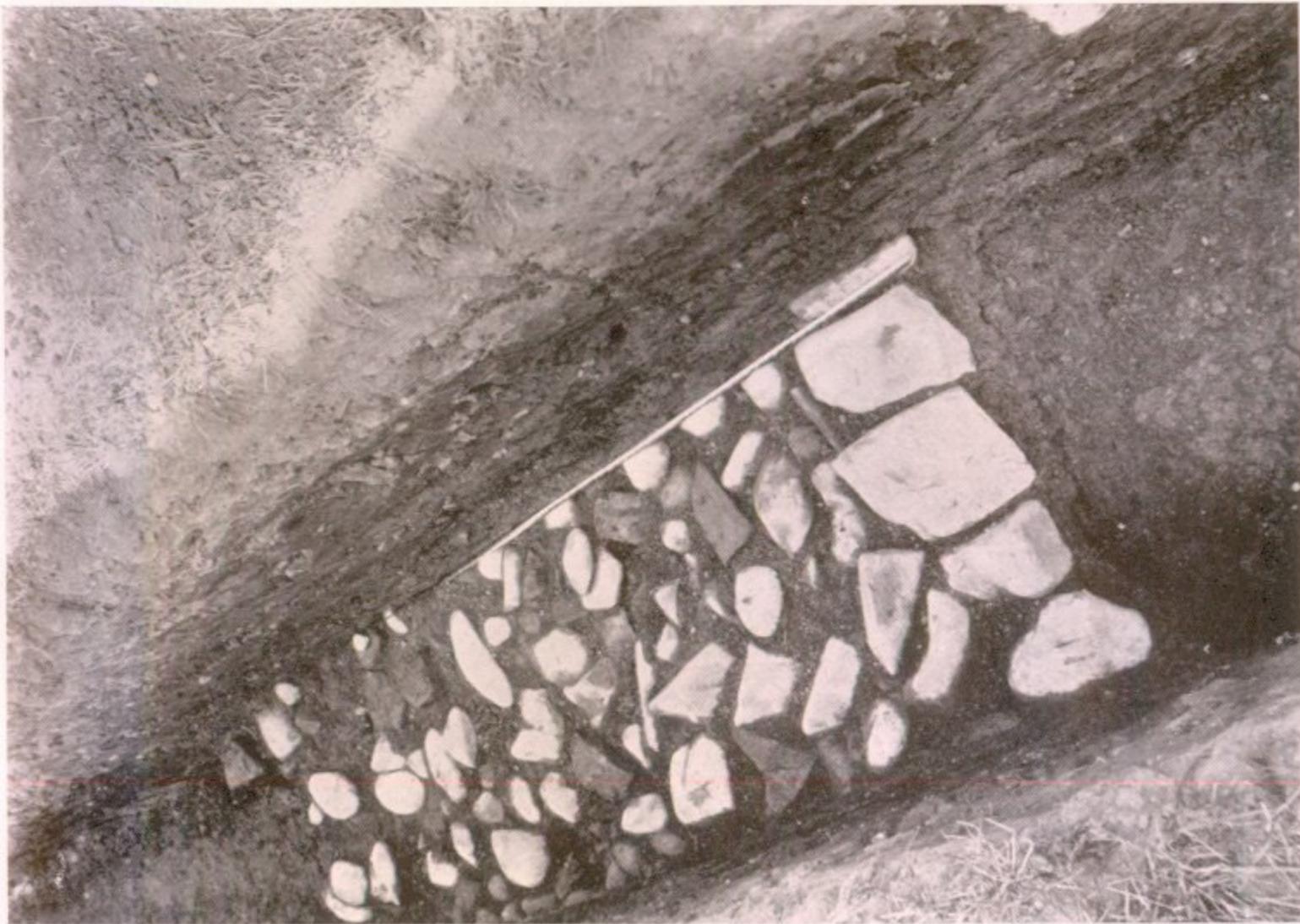


Fig. 7.



2. Kerbed foundation of front of Agricolan south rampart,  
looking north.

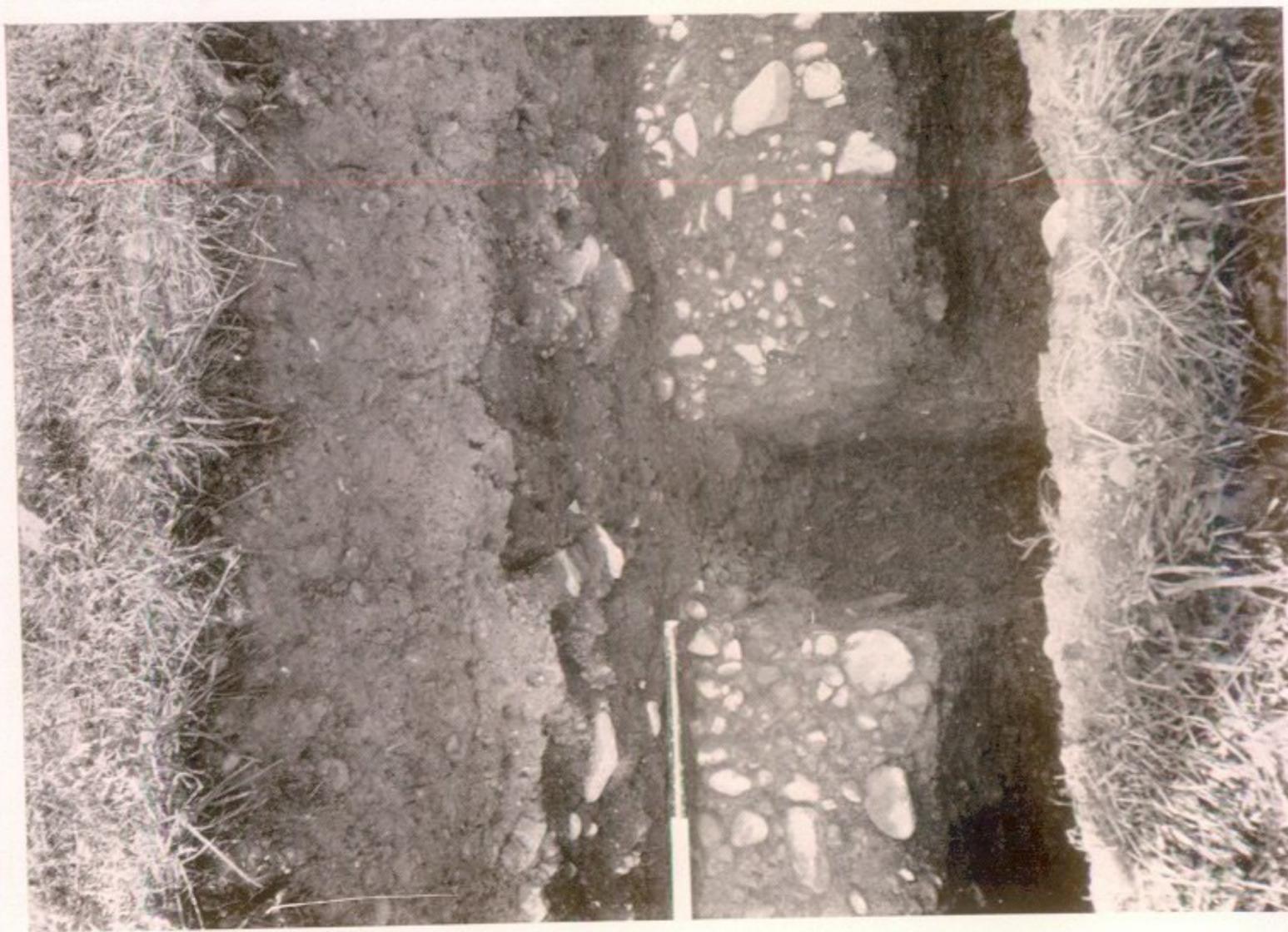


1. Agricolan inner ditch buried below late-Domitianic  
extension of rampart.

NEWSTEAD.



2. Agricolan sleeper-trenches, with stone foundation of late-Domitianic building in background, looking north.

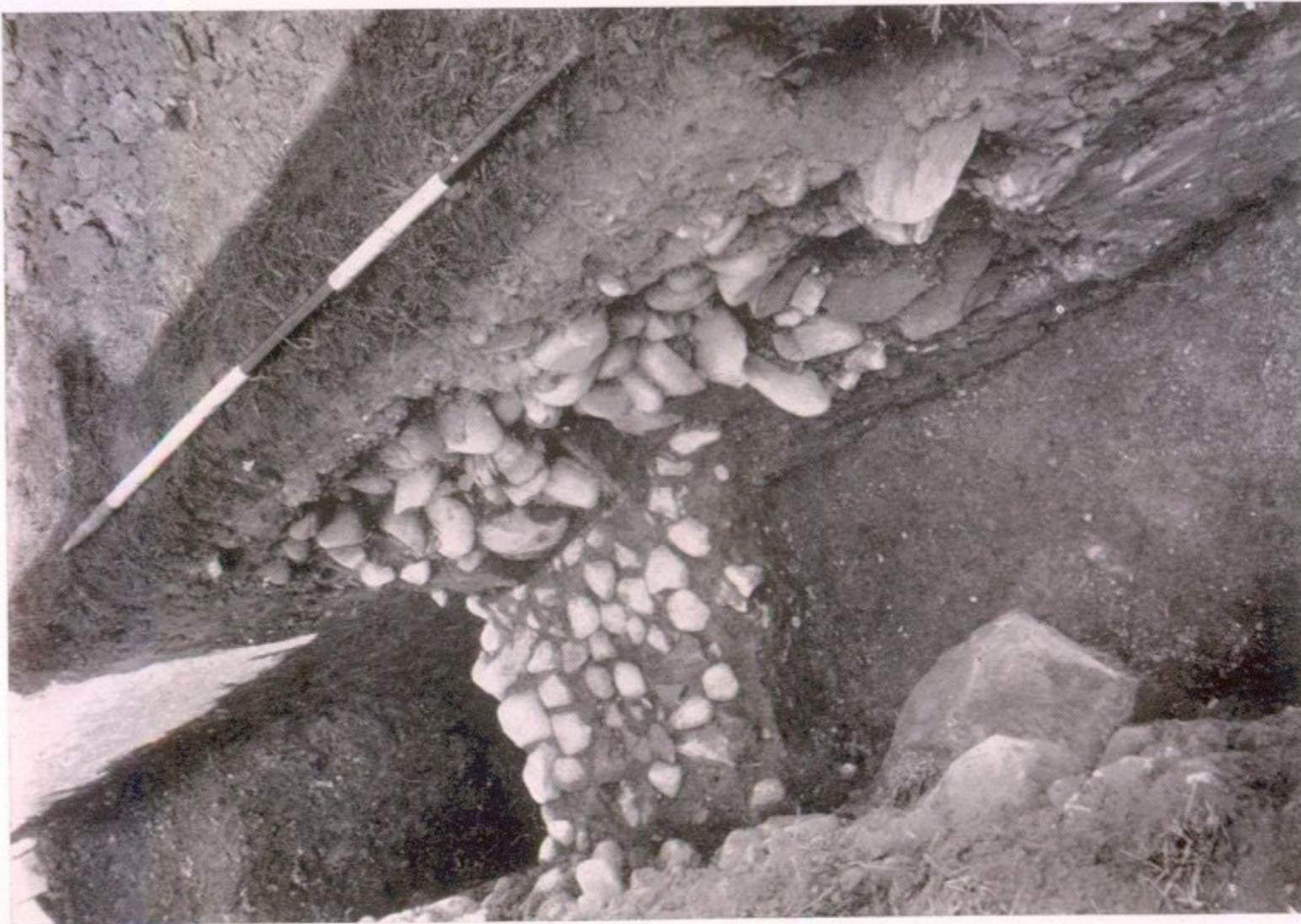


1. Agricolan sleeper-trenches with cobbled flooring, looking west.

NEWSTEAD.



2. Foundation of early Antonine cross-wall, looking west.



1. Foundation of early Antonine fort-wall (Period III), with cobbled foundation of front of late-Domitianic rampart below and inner Agricolan ditch in background.

NEWSTEAD.



2. North wall of early Antonine barrack-block, looking north.

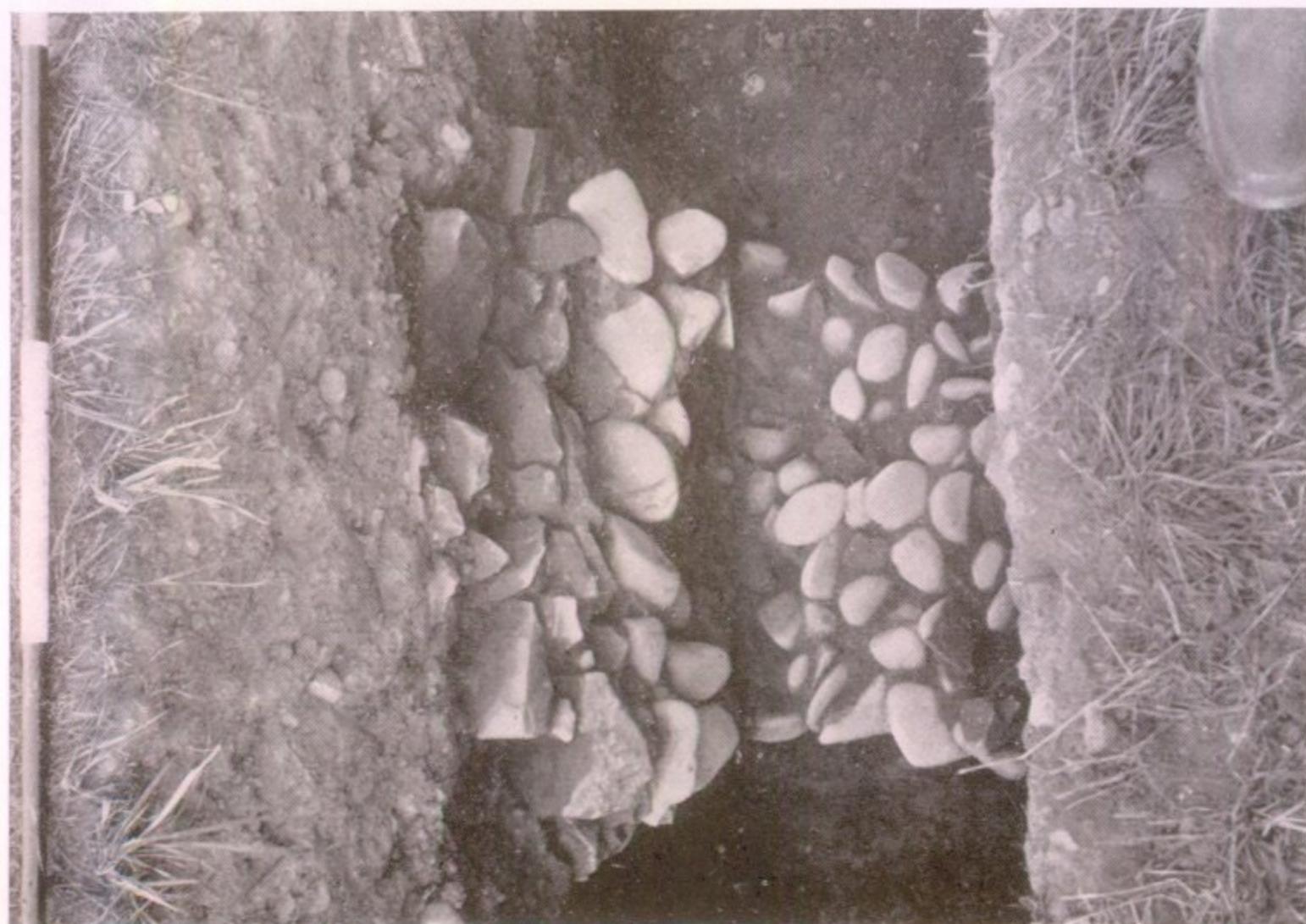


1. South wall of early Antonine barrack-block, resting upon late-Domitianic *intervalum* road, looking south.

NEWSTEAD.



2. North wall of early Antonine barrack-block and late-Domitianic foundation covering Agricolan sleeper-trench (on right), looking west.  
NEWSTEAD.



1. North wall of early Antonine barrack-block, covering late-Domitianic foundation, looking west.

Cf. *Chesterholm*, no. 14, A.D. 79-125.

In the present state of our knowledge the type cannot be dated more closely than from the time of Agricola until the early years of Hadrian.

3. Found, with No. 2, on the clay floor of the second Flavian barrack-building.

Fragment of a platter with incurved sides, in pinkish-buff fabric; the base has been supplied in the drawing.

Cf. *Corbridge*, 1911, no. 19, A.D. 79-125, and *Chesterholm*, no. 18, A.D. 79-125.

This type does not appear on Hadrian's Wall, and so had presumably gone out of use before A.D. 122.<sup>1</sup>

4. Found lying in black silt, on top of the second Flavian road south of the barrack-building.

The greater part of a mortarium broken into several pieces. More of this vessel survives than of any other from the present excavation. It has a flat rim, thickened on the underside where it joins the body, and slightly hooked at the extremity; the bead is rudimentary. The fabric is smooth and light brown throughout. Both the original surface and the fractures are covered by a fine network of cracks, as though after it was broken the vessel had been soaked in water long enough for the baked clay to soften, and had been attacked by frost. The grit is opaque, white and grey in colour, and sparse; in view of the condition of the fragments the sparsity of the grit is not necessarily evidence of heavy wear. A fair amount of grit survives on the upper surface of the rim.

After the mortarium was broken and thrown away it seems to have remained undisturbed on the surface of the road, where it became covered first by water which softened the clay, then by black silt laid down by the water, and finally by the levels of the first Antonine fort. It would thus appear to have been broken at the very end of the second Flavian occupation. It is therefore important to establish, as precisely as evidence will allow, the date when mortaria of this type went out of use.

The mortarium belongs to one of a small number of closely related forms which have these three features in common: (a) a broad flat rim with a rudimentary bead, (b) a yellowish-white or light brown fabric without a slip coating, and (c) grit set in the rim which was used as a rubbing surface. In his Wroxeter type series Mr J. P. Bushe-Fox illustrates three varieties of the type, numbering them 10, 14 and 18, and says that the "type hardly appears to last into the second century." This judgment has been generally accepted. It was based on evidence from three sites, one of which was Newstead, where Curle had found several mortaria of this type, all in early contexts. To accept Bushe-Fox's dating without further inquiry, and then to use it to obtain an indication of the date of the end of the second Flavian occupation at Newstead, would, however, involve a *petitio principii*.

Published examples of the type from dated deposits include: *Brecon*, no. 94, C5, Trajanic; *Brecon*, no. 96, C23, earliest occupation; *Caerhun*, no. 16, earliest level; *Caerleon*, 1926, nos. 102 and 104, initial structure; *Caerleon*, 1929, no. 227, initial structure; *Caerleon*, 1939, no. 69, Flavian layer; *Caistor-next-Norwich*, no. R.2, A.D. 70-110; *Caistor-next-Norwich*, no. R.3, lowest clay layer; *Caistor-next-Norwich*, no. R.5, A.D. 110-160; *Camulodunum*, no. 195 A, Neronian; *Corbridge*, 1911, nos. 12 and 13, circa A.D. 100; *Fendoch*, no. 1, Agricolan; and *Malton*, fig. 15, no. 7, and fig. 16, no. 7, pre-fort occupation.

In addition, a mortarium of this type was found by Dr K. A. Steer in the earliest level at Ebchester, and two have recently been found in the level of the first Flavian occupation at Corbridge.

Most stratified examples of the type are from first-century deposits. One of the examples from Brecon was found lying on a hard clay floor which contained, low down, a bronze coin of Trajan, minted probably between A.D. 104 and 110, lost while still in almost mint condition. The mortarium fragment could not have been deposited before A.D. 104 at the earliest. Professor Wheeler describes the piece as of a "distinctively first-century type which rarely survived into the first half of the second century." One of the examples from Caistor came from a pit dated by the other pottery it contained to approximately A.D. 110-160. Professor Atkinson comments that "the low bead and flattened top of the rim are

<sup>1</sup> The type appears on the Antonine Wall; cf. *Balmuildy*, xlvi. 21; the possibility that this example is Agricolan and not Antonine cannot be ruled out.

early characteristics which seem not to continue long after A.D. 100." In view of these remarks, of the wealth of evidence for a first-century date for the type, and of the fact that there was first-century occupation at both Brecon and Caistor, it is probable that these pieces had survived as rubbish. Mortaria of this type are absent from Gellygaer, Throp, Haltwhistle Burn,<sup>1</sup> and the milecastles of Hadrian's Wall—sites first occupied in the first quarter of the second century. Such flat-rimmed mortaria as do appear—*cf. Poltross Burn, milecastle 48, IV, 2 and 6*—are usually in local hard-fired red fabrics with cream slip, and do not have grit on the rim. Sir George Macdonald considered it possible that mortaria of Wroxeter types 10-18, found on the Antonine Wall (*cf. Mumrills, 91, 3-7*), belonged to the Agricolan occupation.<sup>2</sup>

Evidence discovered since Bushe-Fox wrote in 1912 has amply confirmed this conclusion. Though fragments are sometimes found in second-century deposits on sites that had already been occupied in the first century, vessels of this type appear not to have survived in use into the second century. It is therefore improbable that the mortarium No. 4 was broken much if at all later than A.D. 100. If this type of vessel, which hardly outlasts the first century, was the type in use at Newstead at the close of the second Flavian period, it would support an abandonment of the second Flavian fort *circa* A.D. 100.

### (c) *Antonine Vessels.*

5. Found below the clay fillet on the west side of the dividing-wall.

The greater part of a mortarium in hard brick-red fabric, with a blue-grey core and traces of white slip; the grit, which is brown and grey, is worn. A poorly impressed stamp has been identified by Mr Birley as from type "B" of the two dies recognised for DOCILIS, a potter who probably worked in the north-west of England.

The mortarium could only have found its way into the position where it was discovered at the time the dividing-wall was being built. The distribution<sup>3</sup> of other mortaria with the stamps of DOCILIS is as follows: Balmuildy; Birdoswald; Campfield, Cumberland; Cardurnock (6 examples); Carlisle (2 examples); Chesters (2 examples); Corbridge; Moresby; York.

Three of the six examples from Cardurnock—a mile-fortlet on the coast of Cumberland—came from the subsoil in the vicinity of the south rampart; this is evidence for their Hadrianic date. It is not unreasonable to suppose that the other three examples from the same site, which were not stratified, are also Hadrianic. Birdoswald, Chesters and Moresby were occupied in Hadrian's reign. There are thus ten examples of the wares of DOCILIS from probable Hadrianic contexts. Of the remainder one is from Balmuildy, which, like Corbridge, was not occupied during most of Hadrian's reign, though both sites were occupied in the reign of Antoninus Pius, while Carlisle may have had a similar history to Corbridge. Thus there are ten Hadrianic and four Antonine examples—those from Campfield and York are of no value in this connection—and the inference that DOCILIS was a potter of the Hadrianic-Antonine period, with the emphasis on Hadrian, seems not unreasonable. As there was no Hadrianic occupation at Newstead the present example almost certainly belongs to the very beginning of the Antonine occupation. Its condition shows that it is not a stray, though it is impossible to judge how long it remained in use after being brought to the site, before being thrown away at the precise moment the dividing-wall was built. While the mortarium does not exactly date the dividing-wall, its presence below the fillet is not inconsistent with the wall's being built *circa* A.D. 140.

6. Found with Nos. 7, 8, 9 and 10 west of the dividing-wall, below the bottoming of the Antonine road; this road was laid down immediately after the dividing-wall was demolished.

Rim and shoulder fragment of a black-fumed cooking-pot, burnished externally above the zone of decoration; there is a wavy line round the neck.

<sup>1</sup> I have examined the unpublished residue of the Haltwhistle Burn material.

<sup>2</sup> This type, like No. 3, appears at *Balmuildy*; *cf. pl. xli. 1 & 2*: it is possible that these examples are Agricolan rather than Antonine.

<sup>3</sup> *Cf. Corbridge, Mortarium stamps, AA.4, xxvi. p. 180, and Cardurnock, CW.2, xlvii. p. 119.*

Cf. *Balmuildy*, pl. xlv, no. 16, Antonine; *Cardurnock*, no. 2, secondary level; *Turret 50b*, no. 59, A.D. 130-140; *Turret 50b*, no. 83, A.D. 160-197.

This is a common and fairly long-lived type; it had emerged before the accession of Antoninus Pius, and was still current after his death. The wavy line is a feature found more frequently before A.D. 160 than afterwards.

7. Find-spot as No. 6.

Rim and shoulder fragment of a large and unusual jar in coarse sandy, dirty buff fabric, similar to that of certain *amphoræ*.

8. Find-spot as No. 6.

Rim fragment of large jar in coarse grey fabric with a rough reddish-brown surface.

9. Find-spot as No. 6.

Rim fragment of a plain-rim platter in black-fumed ware; traces of a wavy line are visible, lightly scored on an already burnished exterior surface, and are indicated on the drawing. The vessel belongs to the same class as No. 3, but is a distinguishable type, and the base has been restored accordingly.

Cf. *Balmuildy*, pl. xlviii, no. 19, Antonine; *Birdoswald*, no. 83, A.D. 125-197; *Old Kilpatrick*, pl. xxii, nos. 2 and 3, Antonine.

The fragment is not closely datable but would be at home in a deposit of the early Antonine period.

10. Find-spot as No. 6.

Rim fragment of an unusual platter in smooth red fabric with a grey core; it is possible that it may be a lid.

The above group of five pieces is made up of vessels in use between the beginning of the Antonine occupation and the demolition of the dividing-wall. Except that the cooking-pot belongs rather to the earlier part of the Antonine period than to the later, the group throws little light on the date of the demolition.

11. Found, with Nos. 12 and 13, in the make-up of the above road.

Rim and shoulder fragment of a dark grey cooking-pot; the surface is decayed.

Cf. *Balmuildy*, pl. xlv, no. 13, Antonine.

This high-rimmed piece is typologically more advanced than, for instance, Nos. 14 and 16.

12. Find-spot as No. 11.

Rim of a platter or bowl, in dark grey fumed ware; the surface is decayed, but it is still apparent that the vessel has been cross-hatched.

Cf. *Balmuildy*, pl. xlvi, no. 9, Antonine; *Corbridge*, 1938, fig. 8, no. 15 and fig. 9, no. 8, A.D. 139-163; *Slack*, 8-12, before A.D. 140; and *Turret 7b*, 6, A.D. 122-140.

13. Find-spot as No. 11.

Small fragment, about  $\frac{1}{4}$  inch thick, of a hand-made vessel in dark brown crumbly pitted fabric, probably of native manufacture. The fabric resembles that of vessels from the third-century shrine of Vinotonus, on Scargill Moor, near Bowes.<sup>1</sup> The occurrence of the present fragment in a dated context is noteworthy, as it provides a contrast between the products of the local native potters and those of the Romanised provincials during the second century.

The group of three pieces represents the kind of rubbish that was lying about on the site at the time the dividing-wall was demolished and the second Antonine road built. This could hardly have been much before A.D. 160 in view of the typology, and could well have been later, especially as there is no certainty that the pieces had not survived as rubbish.

14. Found in the structure of the oven built into the first Antonine rampart.

Several pieces of a vessel with the dimensions of a cooking-pot and the rim of a beaker; in dense black fumed ware, burnished on the neck, rim and shoulder.

Cf. *Balmuildy*, pl. xlvi, no. 1, Antonine; *Corbridge*, 1938, fig. 8, no. 15 and fig. 9, no. 8, A.D. 139-163; *Slack*, 8-12, before A.D. 140; and *Turret 7b*, 6, A.D. 122-140.

This is a typical early fumed-ware vessel which emerged as a type under Hadrian and barely lasted into Antonine times. In this it resembles the mortarium No. 5; it also resembles the mortarium in having been broken and thrown away at the time that a structure of the first Antonine fort was erected.

<sup>1</sup> *Yorkshire Archaeological Journal*, xxxvii, p. 111.

15. Found in the oven built into the first Antonine rampart; this vessel, of which a fair amount is preserved, was probably thrown away at the time the use of the oven was discontinued.

Several conjoining rim neck and shoulder fragments of a narrow-mouthed jar with cordoned shoulder and a lightly scored decoration in straight lines; hard whitish buff fabric with blue-grey surface.

"The forts built by Agricola—contain only potsherds of the Roman type; those built by Antoninus Pius contain only those of the new Romano-Celtic type." This statement by Collingwood<sup>1</sup> is so familiar that we rarely pause to consider its factual basis. It was Curle's excavations at Newstead that first made such a comparison possible by isolating Flavian and Antonine pottery. The present piece is of Antonine date, and it belongs to a class of vessels rare in the north before Antonine times, but not then uncommon. The parallels are to the general shape.

Cf. *Balmuildy*, pl. xlv, no. 1, Antonine; *Corbridge*, 1938, fig. 8, no. 12, A.D. 163-197; *Milecastle* 48, pl. iii, no. 11, A.D. 160-197; *Mumrills*, fig. 98, nos. 1 and 6, Antonine; and *Old Kilpatrick*, pl. xx, nos. 6-8, Antonine.

The origin of the shape in the Belgic south-east may be demonstrated by comparing various features of the present piece with the upper part of the pedestal urns of Iron Age C.

Cf. *Swarling*, Kent, no. 4, Iron Age C.

16. Found in the filling above the oven; the oven was sealed by the rampart of the second Antonine fort.

Rim fragment of a cooking-pot in black fumed ware; there is no wavy line on the rim.

Cf. *Milecastle* 9, no. 56, A.D. 160-197; *Corbridge*, 1938, fig. 9, no. 2, A.D. 163-197; and *Corbridge*, 1938, fig. 9, no. 9, A.D. 139-163.

This single fragment might be from a vessel broken some time before the oven was covered. It is from a typical cooking-pot of the second and third quarters of the second century. A close dating is not possible, but, as the parallels reveal, vessels of this type were in use in about A.D. 160.

The two pieces, 15 and 16, taken together, provide an approximate indication of when the oven in the first Antonine rampart was covered by the second Antonine rampart.

17. Found in the outermost ditch of the fourth and last phase.

Rim fragment of a cooking-pot in black fumed ware.

Cf. *Bewcastle*, no. 3, pre-Severan; and *Corbridge*, 1938, fig. 7, no. 27, A.D. 139-197.

This vessel is typologically later than either No. 6 or No. 16; it is of a type whose peak fell *circa* A.D. 180. It does not necessarily carry the occupation to the end of the century, but it indicates that the ditch was open in the last quarter of the century.

18. Found immediately below the ploughed earth behind the rampart.

Fragment of a small mortarium with flanged rim, in white sandy fabric; the grit, which was once present, has been worn away.

Cf. *Balmuildy*, pl. xlii, no. 36, Antonine.

This vessel would not be out of place in a third-century deposit, but as something very similar is found on Antonine sites, it does not prove a third-century occupation at Newstead.

#### (d) *Conclusion.*

Conclusions from the evidence of the coarse pottery may be stated briefly at this point; for the individual pieces have been discussed in detail, while the full significance of the pottery will only emerge in the context of all the other evidence. The end of the second Flavian occupation seems to have come hardly, if at all, later than A.D. 100. The dividing-wall and the oven in the first Antonine rampart are both datable to *circa* A.D. 140. Pottery alone will not date the beginning of the second Antonine period,

<sup>1</sup> *Roman Britain*, R. G. Collingwood, 1932, p. 100.

but it does give a rough indication—in or after A.D. 160. There is a hint that occupation may have continued until the end of the second century. There is no piece which we are obliged to date later than A.D. 200.

(e) *References and Abbreviations.*

- PSAS. *Proceedings of the Society of Antiquaries of Scotland.*  
 SAL. *Reports of the Research Committee of the Society of Antiquaries of London.*  
 AC. *Archæologia Cambrensis.*  
 AA. 3 and 4 *Archæologia Æliana*, third and fourth series.  
 CW.<sup>2</sup> *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, new series.
- Balmuildy *The Roman Fort at Balmuildy*, S. N. Miller, 1922, p. 76.  
 Bewcastle CW.<sup>2</sup>, xxxviii. p. 219.  
 Birdoswald CW.<sup>2</sup>, xxx. p. 187.  
 Brecon *The Roman Fort near Brecon*, R. E. M. Wheeler, 1928, p. 213.  
 Cardurnock CW.<sup>2</sup>, xlvi. p. 108.  
 Caerhun AC., lxxxix. p. 37.  
 Caerleon, 1926 AC., lxxxiv. p. 280.  
 Caerleon, 1929 AC., lxxxvii. p. 300.  
 Caerleon, 1939 AC., xc. p. 139.  
 Caistor-next-Norwich *Norfolk and Norwich Archæological Society*, xxvi. p. 197.  
 Camulodunum SAL., xiv. p. 202.  
 Chesterholm AA.<sup>4</sup>, xv. p. 222.  
 Corbridge, 1911 AA.<sup>3</sup>, viii. p. 168.  
 Corbridge, 1938 AA.<sup>4</sup>, xv. p. 266.  
 Fendoch PSAS. lxxiii. p. 146.  
 Malton *The Defences of the Roman Fort at Malton*, P. Corder, 1929.  
 Milecastle 9 AA.<sup>4</sup>, vii. p. 162.  
 Milecastle 48 CW.<sup>2</sup>, xi. p. 447.  
 Mumrills PSAS., lxiii. p. 523.  
 Old Kilpatrick *The Roman Fort at Old Kilpatrick*, 1928, S. N. Miller, p. 41.  
 Slack *Yorkshire Archæological Journal*, xxvi, p. 61.  
 Swarling SAL., v.  
 Turret 7b AA.<sup>4</sup>, vii. p. 151.  
 Turret 50b CW.<sup>2</sup>, xiii. p. 351.  
 Wroxeter SAL., i. p. 76.

NOTE ON A FRAGMENT OF A GLASS ARMLET FROM NEWSTEAD.

By W. BULMER.

Mr William Bulmer has kindly furnished the following note upon a fragment of glass armlet found in the earlier Flavian level of the barrack-blocks in Section I.

Portion of glass armlet  $2\frac{3}{4}$  inches long, of D-shaped section ( $\frac{1}{2}$  inch  $\times$   $\frac{1}{4}$  inch) and  $2\frac{3}{8}$  inches internal diameter.

The armlet has been made by folding a colourless glass rod of circular section round a mandrel, as is shown by the resulting cross-section of the armlet and surface of its inner side. The glass is of good quality, but is interspersed with sheets of exceedingly minute bubbles, evidently due to imperfect fusion. The sides and outside of the ring are "flashed" with a coating, about 1 mm. thick, of transparent glass of deep sapphire blue, evidently coloured by cobalt as it shows no trace of the greenish blue derived from copper or iron salts. It is of unusually fine quality and colour, and its use as a "flashing" on the body of commoner glass implies that it was a scarce and valuable article at the time of manufacture.

Into this blue glass are inlaid two threads of white opaque glass about  $1\frac{1}{2}$  mm. wide and  $\frac{1}{2}$  mm. thick; they are not quite concentric with the armlet but the deviation is very slight.

The armlet has been ground on the sides and outside and afterwards fire polished; after the polishing was completed the two remaining patches of opaque yellow glass were added *en barbotine*. There seems to be no doubt, particularly in view of the shape of the shorter patch, that these formed, or were intended to form, an elongated trumpet spiral, the most usual decoration of these armlets. There is no evidence that the thread of yellow glass, which should have joined the two patches and formed the elongated spiral, has ever adhered to the surface of the armlet. Probably it was allowed to get too cool in the course of manufacture, and only at the ends, where there was more metal to retain the heat, has adhesion taken place.

Glass armlets of Roman date seem to be confined almost entirely to northern England and southern Scotland (a list of examples, including others from Newstead, is given in *PSAS.*, lxxii, 366-395), although one specimen wandered as far south as Wroxeter.

They usually show considerable artistic ability, particularly in the arrangement of their patterns and in the choice of contrasting colours, as might be expected from their Romano-Celtic origin. But what is more notable is the high technical skill shown in their manufacture.