

## V.—SIX TURRETS ON HADRIAN'S WALL

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### *Introduction*

Turrets 18b, 25b and 26a were excavated for the Durham University Excavation Committee in the summer of 1959 as part of a programme of detailed study of minor structures on Hadrian's Wall which was intended to be carried out by that body, in view of the paucity of published evidence. Turrets 45a and 51b were excavated for Durham University Excavation Committee and for the Ministry of Public Building and Works in the autumns of 1959 and 1958 respectively in advance of consolidation by them. Turret 35a, Sewingshields, was excavated by Miss Janet Birch in the summer of 1958, also in advance of consolidation, and as there seemed otherwise no immediate prospect of the publication of her findings it was decided to include this with the other reports. In view of the terms of the brief these turrets have been recorded in considerable detail, and sections and plans of the successive internal arrangements (where they survived) in turrets are published here for the first time.

## TURRET 18b, WALLHOUSES WEST

The site of this turret had been made available in part for examination some two years previously by the demolition of the toll cottage in advance of projected road widening. This threat, and the need for information further to work already done on the length of occupation of turrets east of the North Tyne decided its excavation in August, 1959. Only the southern third of the turret was accessible. The turret had been located in 1931, when the junction of its east wall with the Great Wall had been examined.

*Construction of the turret.* The external dimension of the turret was 21' 8" from west to east and 15' 2" internally. The south and east walls averaged 3' 1" wide, though the area occupied by the entrance in the south wall was some 2" narrower. The west wall measured 3' 3" to 3' 4". The width of the doorway, which was at the west, was 2' 10". All measurements exclude the offset foundation. This offset, of one course only, occurred internally and externally, but varied considerably. It disappeared altogether along the south-east external face, but was as wide as 7½" internally at this point. The builders of the wall here had presumably corrected a mistake in the layout of the foundation, and the offset was probably intended as 2" to 3". The type of construction of turret 18b is that normally associated with the Sixth Legion. The turret was trench built, but it was in fact hardly possible to make out the original shallow 6" to 1' cut for the trench in the natural clay. The foundation course was covered with clay, which had concealed it from the stone robbers, and the mortared courses and core of the walls were laid on this, though for some reason (there was nothing to indicate rebuilding) the core of the slightly thicker west wall was laid in clay, as also its internal facing stones. The turret survived to a maximum height of five courses at the



Fig. 1. *Turret 18b*. Robbed west wall with rubble core, and flags at west of turret in IA.2



Fig. 2. *Turret 18b*. Rough paved area in S.E. corner and associated ash level in IA3



south-east internal corner, but was much robbed along the southern external face, being in parts reduced to the foundation only. The east wall of the turret had an exceptionally thin fourth course externally (see section) which ran the whole length of the exposed east face of this wall. In the absence of any evidence in the level representing the ruin of the turret for a tile or stone covered pitched roof, it should perhaps be assumed that the roof was flat. However a very small portion of a possible imbrex found in the rubbish and cobbling outside the south wall of the turret raises the question whether the roof might not have been stripped when the structure was dismantled or went out of use. The mass of stone in the south-east corner laid shortly after the first clay floor had been put down possibly represents a platform. If so it was soon to disappear completely under ash, but the rough stone which appeared again in this area at the end of IA may represent a rebuild of it. If there was a door there is no evidence to show how or where it was hung. The doorway was, however, disturbed along its south face by stone robbing. The build-up to the surviving top floor level in the doorway from the threshold was 1' 10".

*Period IA. 1.* The foundation for the first floor consisted of tips of clay and mortar over the natural clay. A hearth had been made when the foundation was partly laid at the centre of the south side, close to the south wall. The floor itself consisted of rather dirty yellow clay mixed with ash. Laid on it shortly afterwards to produce a roughly flat surface was a mass of stones. These were not flags, the average depths of the stones being 7". There were no indications that they had ever been mortared. It is just possible that this represents the remains of a platform, and this south-east corner would be the normal position in a turret of this type. However in the next phase of IA these stones disappeared under ash, and the working height of this stony area above existing floor level can never have been more than 5". If this is a platform the conventional interpretation as a landing to reduce the length required in a movable ladder giving access

to the upper floor seems inapplicable. A curious feature was the initial use of the doorway as a hearth. There was some 8" of fired and ashy material in the doorway belonging to this initial phase of IA, including a heavily fired well laid cobbled hearth. It is hardly credible that there was any sort of door in the turret at this stage. For some reason a stone was placed just inside the doorway against the west wall. It was mortared to a smaller stone below, which was in its turn well set in the floor clay. The small area delineated by stones which were some 7" in depth in the north-west corner of the exposed interior of the turret appeared to represent a small coal store. This area was intensely black with a deposit of some 2" of coal dust. (Before the next alteration, however, both the hearth and the coal store were covered with yellow sand, with unfired cobbling in the doorway.) Finally in this phase most of the floor area of this part of the turret had been dug away to make an ash pit. The edge of this pit was quite clear on plan and its east edge on section, but its western edge on section was confused, perhaps due to contemporary trampling, and the insertion of the stones making the later gully. The pit had quickly filled up with many layers of multicoloured tipped ash.

Later in period IA. 2 the ash pit appears to have been filled up flush with the floor and then to have spread over all the exposed area of the turret though it was very thin, and in places non-existent, over the yellow sand strip some 2' to 3' wide along the western wall. Very shortly some flags were laid in this area along the west wall associated with a gully lined with more or less upright stones the largest being 1' 9" by 1' by 5". At the same time some rubble, mixed with mortar and clay was thrown down in the south-east part of the turret to provide a firm surface. A second layer of 2 or 3 big flags seems to have been added shortly afterwards to the earlier strip at the west, the average thickness of all this flagging being  $2\frac{1}{2}$ ". One of the flagging stones was shaped as an ellipse, 19"  $\times$  17", with a circular depression of 2" depth and 10" circumference centrally. This suggested

some sort of grinding or powdering use. A flagged hearth also appeared at this phase in the south-east corner of the turret. A second layer of cobbling now also appeared at the doorway, to provide a hard paved passage through from outside to the back of the turret.

During the next phase 3 in period IA the need for a hard stone covered area in the south-east of the turret seemed to have reappeared. These stones again were fairly massive and not thin flags, being 5"-7" in thickness. They were laid on a thin (1" to 2") layer of, and surrounded by, a very fine, soft, dark, rich brown sand with flecks of charcoal, the colour being apparently due to the presence of a considerable quantity of iron oxide. The trench just included the southernmost few inches of an intensely fired flagged hearth which seems to have been placed west of centre in the turret. Over the rest of the interior there was a trampled dark ashy floor. The vertical stones of the gully still projected through an inch or so, and yellow sand and clay had again been thrown down along the path from the door along the western wall into the centre of the turret, and more stones had been added in the doorway. At this stage the blackness of the charcoal, coal and ash deposit round the outside of the turret was very noticeable.

Before the laying of the IB floor the western part of the turret was covered with a layer of rubble some 8" thick against the western wall, thinning to some 2" in the central area and not appearing in the east. This was an extremely clean deposit of light coloured mortar and lime and rubble. It appeared to be material from demolition, and possibly represents some repair and rebuilding. Its presence appears to have caused the IB floor level to tip up some inches out of horizontal to the west. This floor was of a very hard dark material, containing small stones, many of them fired, and mortar and lime with coal and charcoal. It had set to a concrete-like hardness. Four flagstones survived in place at the south-east corner, and an *as* of Antoninus Pius of 154-155 was found under them, as indicated by a star on the section.

The building of the cottage had removed the upper parts of this layer.

*18th century toll house:* The easternmost room of the toll house, some 15' 6" long overlay the south-east part of the turret, with its doorway just over the turret's eastern wall. No 18th century material, apart from a horseshoe, was recovered.

With a frontage to the road of 27' 6", and a depth of over 5', and in view of the frequent passage of heavy lorries and tanks some inches from the edge of the trench, it was thought safer not to remove the balk.

### Pottery

The layer numbers are excavation numbers, and are retained for ease of reference to locate the exact position of pottery on plans and sections. They have no chronological significance in relation to the history of the turret.

#### IA. 1.

*Layer 16*, floor foundation. Clay with tips of coal.

1. Cooking pot or jar in hard smooth light grey fabric, *cf.* Gillam 111, 110-130.

2. Cooking pot in light grey fabric with slightly darker finish. *cf.* No. 1.

3. Cooking pot in light grey ware with brownish burnished finish. Resembles Gillam 116, Hadrianic+.

This layer also produced some 43 sherds grey jars or cooking pots, 4 sherds of black burnished ware, 1 sherd grey rustic ware, and 1 or 2 sherds, apparently of a pink flagon. *Samian*. 2 sherds, probably part of Dr. 27, Hadrianic.

*Layer 18*, yellow sand and rubble—builders' debris outside turret.

8 sherds of 1 thick grey jar, and 1 black burnished sherd. *Samian*. 1 rim chip, unidentifiable.

*Layer 21*. Ash under cobbled hearth in doorway. *See plan*.

13 sherds light grey jars and a small sherd of black burnished ware.

*Layer 17*. Brownish yellow clay floor, with associated flagging. Largely dug away by later ash pit. *See plan*.

4. Cooking pot in sandy grey fabric, showing scorch marks from fire. Possibly originally black burnished. *cf.* Gillam 122, Hadrianic+. This floor also produced 15 sherds of light grey jars and cooking pots, a small sherd of black burnished ware, and a sherd from a white, and a sherd from a pink flagon.

*Layer 20.* Ash associated with cobbled hearth in doorway.

3 sherds of light grey jars or cooking pots.

*Layer 13.* Mixed layer of ash, clay, etc., overlying original floor.

This layer produced 1 black burnished cooking pot rim (not drawn) and 1 sherd grey ware.

*Layer 15,* the ash pit. Tips of pink fired sand, coal, grey ash and clay.

5. Cooking pot or jar in hard grey ware, with traces of burnishing on shoulder. ?*cf.* Gillam 115, 120-140.

6. Cooking pot in hard grey ware, *cf.* nearest Gillam 115, 120-140.

7. Cooking pot in black burnished ware. Gillam 122, variant. Hadrianic+.

8. Part of handle of flagon in pink self-coloured fabric.

9. Amphora sherd with part of incised inscription. Mr. R. P. Wright reads this ]XI, and says the balance of the letter indicates that this is the lower half, and reads as eleven and not nine. It may be complete, or may have been preceded by other numbers.

The ash pit also produced some 20 sherds of grey jars or cooking pots, and some half dozen sherds of pink ware, probably representing flagons. Hadrianic. *Samian.* Samian chip, unidentifiable. Base of Dr. 33, undatable.

*Layer 11.* Ash deposit overlying floor, becoming sandier to west (doorway).

10. Cooking pot in pinky brown fabric with matt dark grey external surface. A sharply cut diagonal cross has been incised on the neck of the pot before firing. *cf.* Gillam 115, but different fabric.

11. Cooking pot in black burnished ware, *cf.* Gillam 127, 130-170.

This layer also produced some 70 sherds representing grey and black burnished cooking pots and jars, and 4 to 5 sherds possibly representing a flagon. *Samian.* 2 sherds of cup Dr. 33. Undatable.

*Layer 10.* Tip of rubble, dirty mortar and clay, apparently demarcating IA. 1 from IA. 2.

12. Wide-mouthed jar in a pinky brown corky fabric, containing white shelly grit. The external surface is dark grey/black, the internal light grey. The pot bore a band of incised lines round its shoulder.

## IA. 2.

*Layer 9.* Ashy level, with associated hearth, stone edged gully, and large flags at west. *See plan.*

13. Cooking pot in light grey ware, with two bands of burnishing round shoulder.

This level produced 85 sherds of assorted cooking pots and jars, including some black burnished ware, and 7 sherds and the base of one thick grey Hadrianic jar. Also three sherds probably of the same red flagon with white slip, and one hard light grey sherd of rustic ware.

## IA. 3.

*Layer 8.* Flags in brown ash containing much diffused iron and iron oxide. *See plan.*

14. Cooking pot in black burnished ware, *cf.* Gillam 123, 125-160.

This layer also included 18 small sherds in grey and black burnished wares.

*Layer 9a.* Intensely fired hearth area with flagging, apparently associated with layer 8. *See plan.*

15. Cooking pot or jar in grey ware. *cf.* Gillam 117, 125-150.

16. Cooking pot in greyish brown ware, with slaty grey slip. *cf.* Gillam 123, 125-160.

This layer also included some fifteen sherds of assorted cooking pots and jars.

*Layer 19.* Flagging set in yellow sand in doorway. *See plan.*

17. Narrow-mouthed jar in hard sandy grey fabric. Similar to Gillam 28, 120-170.

## IB.

*Layer 7.* Layer of clean rubble and mortar apparently demarcating end of IA and beginning of IB.

18. Cooking pot in hard grey ware. *cf.* Gillam 134, 160-230.

This layer produced only this one rim.

*Layer 3.* Last surviving floor of turret composed of very hard black material, coal, charcoal, small fired and unfired stones.

19. Bowl in pinkish brown fabric, with highly burnished noticeably silky surface, dark grey to brown in colour. Fragments of wall sherds indicate a deep bowl rather than a shallow dish, although this vessel might in fact have been slightly shallower or deeper than indicated. Many small fragments of this bowl were distributed throughout this layer. *cf.* Gillam 222, there dated 170-210. This vessel is wholly typical in both form and fabric. The type is very

common on the Antonine Wall, for example in the rich deposit in the outer west ditch at Murrills. It is also common in the destruction deposit of the close of Antonine II at Corbridge. It is extremely rare in turrets and milecastles.

20. Cooking pot in hard grey ware. *cf.* Gillam 134, Antonine.

21. Small cooking pot in lightish grey ware. Hadrianic/Antonine.

This layer also contained 99 sherds of assorted cooking pots in grey and black burnished wares (very little black burnished). There was also one sherd of a buff rough cast beaker. None of the recognizable pottery was later than the Antonine period. *Samian*. 4 sherds of a Dr. 31, Antonine.

*Layer 6.* Final rubbish deposit outside turret, overlaid by the ruin of the turret walls.

22. Jar in dark grey sandy ware.

The undrawn pieces in this layer, where they can be identified are second century. These are some 40 sherds grey and black burnished jars and cooking pots, and some 3 or 4 sherds of a white and a pink flagon. *Samian* 2 sherds of a Dr. 31, undatable. 1 sherd of ? Dr. 27, Hadrianic. Sherd of base angle of Dr. 31, Antonine.

#### IA and IB.

*Layer 2.* Occupation debris outside turret. Tips with much charcoal and coal.

23. Cooking pot or jar in brick red fabric. Hadrianic.

24. Cooking pot in sandy black burnished ware. *cf.* Gillam 132. Antonine.

25. Bead rim cooking pot, in burnished black sandy fabric. *cf.* Gillam 118. Hadrianic/Antonine.

26. Small cooking pot in light grey ware. Early Hadrianic.

27. Jar in grey fabric, with burnished dark grey surface.

28. Similar jar in black sandy fabric. Possibly same pot refired.

29. Wide-mouthed jar in light grey fabric with very fine dark grit. Hadrianic.

30. Base of jar with definite foot ring, in dark grey/red sandy ware.

31. Dish with beaded rim in grey fabric.

32. Base in white fabric, perhaps base of flagon. There are faint indications of a pinkish slip externally.

There were also some 120 sherds representing grey jars and cooking pots and black burnished cooking pots. There were three sherds of grey rustic ware, and three sherds of a thick, and 1 sherd

of a fine, rough cast beaker. There were 30 sherds of pink, white and buff wares, apparently representing at least half a dozen broken flagons, and two of a dark pink ware with cream slip. *Samian*. 1 unidentifiable sherd. 1 base angle of a Dr. 31?, Antonine.

*Layer 1.* Foundation trench for 18c. cottage wall, dug into ruin of turret.

This level produced some ten sherds of Roman, but no later, pottery.

*Layer 4.* Robbing of west wall of turret.

33. Cooking pot in grey ware, *cf.* Gillam 115-117. Hadrianic.

This layer also produced 18 sherds of grey and black burnished cooking pots and jars, and 1 white and 1 pink flagon sherd.

*Unstratified.* Pottery from topsoil and debris at south of turret.

34. Cooking pot in hard grey fabric with darker external finish. Related to early cooking pots 120-150, but no exact parallel in Gillam.

35. Bowl in black burnished fabric with wavy line decoration and tall oval bead. This is in a similar fabric to pottery appearing in the west ditch at Mumrills. Late Antonine.

36. Cooking pot in soft self coloured buff fabric. *cf.* Gillam 140. Late Antonine.

37. Sherd of pinkish grey ware with dark surface decorated on ? shoulder with stab marks from a blunt round headed blade or possibly finger nail.

9 pieces of amphorae were found in period IA levels, but only 1 in IB levels.

#### *Small finds*

IA. 1.

*Layer 22.* Built in to south wall of turret.

Sheet bronze attachment with forked end with holes for fixing, broken at other end. A.

*Layer 16.* Floor foundation. Clay with tips of coal.

Dupondius of Vespasian (A.D. 69-79) Lugdunum. Much worn. Corrosion has preserved impressions of heather above and below the coin. These have been treated and preserved. Not illustrated.

Fragment of slightly saucer-shaped bronze disc of  $1\frac{3}{4}$ " diameter.

Three unidentifiable iron objects of oval section approximately  $2\frac{1}{2}$ " in length.

Piece of brick approximately  $6'' \times 3'' \times 1\frac{1}{4}''$  thick with chipped out hole  $\frac{3}{4}''$  in diameter.

Fragments of coal.

*Layer 17.* Clay floor above 16.

Fragment of mussel shell.

Fragments of coal and shale, some being burnt.

*Layer 21.* Ash under cobbled hearth in doorway.

Iron nail with round head approximately  $\frac{7}{8}''$  diameter and shank of square section approximately  $2\frac{3}{8}''$  long overall. Also other iron corroded into small fragments.

Pieces of coal.

*Layer 20.* Ash associated with hearth in doorway.

Iron stud?

*Layer 13.* Mixed layer of ash, clay and mortar, overlying original floor.

Broken iron nail.

Piece of burned coal shale.

1 fragment oyster shell.

*Layer 15.* The ash pit—tips of pink fired sand, coal, grey ash and clay.

3 pieces of much corroded iron representing an object of  $\frac{3}{8}''$  square section, about  $4\frac{1}{2}''$  in length.

3 shoe studs.

Broken iron nail  $1\frac{5}{8}''$  long.

Fragment of oyster shell.

Fragments of coal.

*Layer 11.* Ash deposit overlying floor, becoming sandier to west.

Iron object with right-angled end,  $3\frac{1}{2}''$  long.

10 iron shoe studs representing parts of one shoe. The size seems variable probably due to corrosion but the better preserved have a square pyramidal head  $\frac{3}{8}''$  across and  $\frac{3}{8}''$  tapered shank.

3 iron nails of indeterminate length, one with head.

Coal fragments.

1 fragment oyster shell.

*Layer 10.* Tip of rubble, dirty mortar and clay, apparently demarcating IA. 1 from IA. 2.

2 fragments of mussel shell.

Portions of stone with highly vitrified green surface, perhaps from lime kiln.

IA. 2.

*Layer 9.* Ashy level with associated hearth, stone edged gully and large flags at west.

Fragment of bronze sheet  $\frac{3}{4}'' \times \frac{3}{8}'' \times \frac{1}{32}''$ .

Fragment of corroded iron from shoe.

16 shoe studs representing a disintegrated shoe. Three layers of leather are discernible on some studs.

Coal fragments.

#### IA. 3.

*Layer 8.* Flags in brown ash inside turret containing much diffuse iron and iron oxide.

Eight corroded shoe studs, with diameter of head between  $\frac{5}{8}$ " and 1", and one preserving shank to length of  $\frac{3}{4}$ ".

*Layer 9a.* Dark sand and ash associated with flagging in western half of turret.

Shield boss, approximately  $8\frac{1}{4}$ " diameter, with perforation on flange for attachment. Fragmentary. A shield boss was noted at Turret 29b, Limestone Bank. B.

9 shoe studs with heads approximately  $\frac{5}{8}$ " diameter and circular. Part of one shoe?

Iron nail 2" long (broken) with shank of square section.

Fragments of coal.

*Layer 19.* Flagging in doorway.

Piece of Rhineland lava.

#### IB.

*Layer 3.* Last surviving floor of turret composed of very hard black material.

COIN. *As* of Antoninus Pius. Obverse: ANTONINUS AUG PIUS PP TRP XVIII. Reverse: BRITANNIA COS IIII S.C.

Corroded, but showing little wear. Possibly in circulation for some ten to twenty years. A.D. 154-5. M. & S. 934, Cohen 117, B.M.C. 1971. Found below the level of the flags projected on to section, but still in layer 3. A star indicates the find place.

Iron object of flat or oval section of  $\frac{1}{4}$ "  $\times$   $5\frac{3}{4}$ " long. Perhaps a tie.

Round headed nail  $\frac{5}{8}$ "  $\times$   $\frac{3}{4}$ " shank.

Parts of 2 oyster shells. Shell is scarce and fragmentary on this site.

Finely flaked leaf-shaped flint arrowhead with incurved sides. Neolithic/Early Bronze Age form. C.

Fragments of coal.

*Layer 6.* Final rubbish deposit outside turret.

Iron shoe stud.

Nail?, approx.  $1\frac{1}{4}$ " but broken.

Quantity of coal.

1A and 1B. Occupation debris outside turret.

*Layer 2.* Black tips with charcoal and much coal.

Bronze disc brooch with *à jour* decoration. The surface of the brooch was inlaid with blue enamel, the raised centre boss being inlaid with red enamel. D.

Portion of iron blade, perhaps from dagger or spear head. Length  $4\frac{1}{4}$ " ,  $1\frac{1}{2}$ " wide, tapering to rounded end  $\frac{3}{8}$ ". Traces of wood survive on the point. E.

Iron shoe stud, length  $\frac{5}{8}$ " , thickness of head  $\frac{1}{4}$ " , diameter of head  $\frac{3}{8}$ ".

Fragments of two nails. They are too corroded to assess their original form.

Piece of thin curved tile, thickness  $\frac{1}{2}$ " , widening slightly to its bottom edge. This appears to be part of an imbrex. 2 small portions of flat tile, also  $\frac{1}{2}$ " thick, came from the same layer. These seem to be related to the rough cobbling that occurred outside the turret, and are not sufficient to indicate a tiled roof.

Pouring of aerated vitreous slag.

Considerable quantity of high grade coal.

*Layer 5.* Ruin of turret externally.

Square shanked nail approx.  $2\frac{1}{2}$ " long with square head.

*Layer 4.* Robbing of west wall of turret.

Two shoe studs, head of one in form of four sided pyramid approx.  $\frac{3}{8}$ " across.

Struck flake of flint with part of cortex. Not illustrated. No secondary working.

*Layer 1.* Foundation trench for 18c. cottage wall, dug into ruin of turret.

Bone plaque,  $1\frac{1}{2}$ "  $\times$   $\frac{3}{4}$ "  $\times$   $\frac{1}{4}$ " , chamfered at edges, and perforated at corners for attachment. Not necessary Roman. F.

Iron nail, length  $2\frac{3}{4}$ " with round head, c.  $\frac{1}{2}$ " in diameter.

*Unstratified.* Topsoil and debris at south of turret.

Broken length of square section iron nail approx. 3" long.

Part of eighteenth century horseshoe of constant  $1\frac{1}{8}$ " width and incorporating two nails. From foundation of cottage wall.

### Summary

The excavation of this turret confirmed the suspected existence of other turrets east of the North Tyne to have gone out of use by the end of the second century in addition to the published evidence for turret 19a. A blocking wall at

Wallhouses West may exist under the road, for at 19a a rough wall was found across the recess. Although the building of the cottage had removed the upper part of the first IB and any subsequent floor levels, it should be noted that outside the turret the last rubbish level was sealed by a spread of rubble and mortar which, east of the turret, on section, can hardly be interpreted as anything other than the ruin or demolition of the structure. This latest rubbish deposit did not indicate any occupation after the end of the second century, so there is no reason to assume the erosion of 3rd and 4th century floors within the turret.

During period IA the turret seems to have been used, rather exceptionally, as a workshop. The section showed about 3' of varied deposits of ash. Some 60 shoe studs were found throughout IA, as well as other iron objects, including a shield boss, and the impression strongly remains of some sort of iron working (probably particularly related to hob nails) rising to a peak in IA. 3, where the ash was particularly heavily impregnated with iron oxide, and associated with a high temperature hearth. This activity does not seem to have been resumed in period IB.

There was no stratigraphical indication (wind blown silt, or squatting activity) of a twenty year gap in the occupation of the turret. This implies at least sufficient policing to maintain boarded up doors and windows. However the subsequent IB reflooring is quite definitely marked in this turret whereas at turrets 26a and 51b the IA occupation seems to slide into the IB, and the exact point at which the change came is not clear. The presence of vessel no. 19 in the primary IB floor may indicate a longer period of disuse than normal here.

The disappearance and reappearance of a paved area or possible platform in the south-east corner of this turret, and its height of only a few inches above the associated floor levels, rather militates against the idea of its having any constant and fixed use, especially in relation to a presumed fixture like a trapdoor or stair well. It is difficult to make

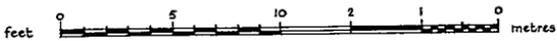
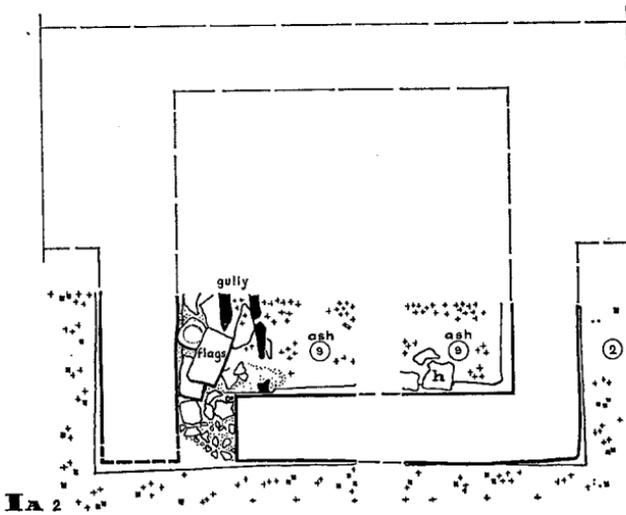
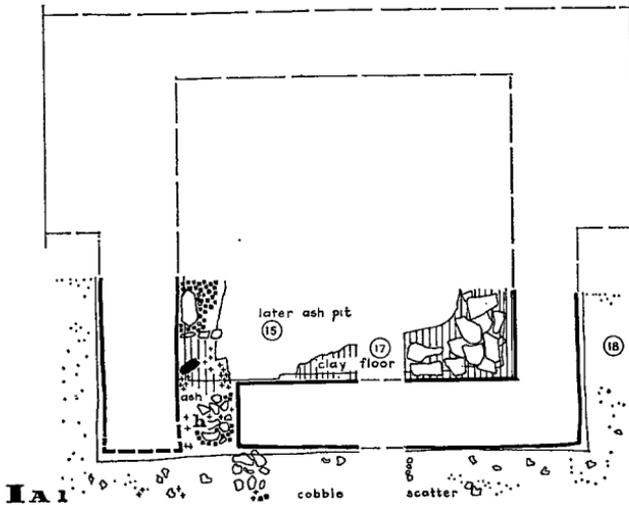
any very convincing alternative suggestion, but in view of the evidence for the amount of firing that went on in the turret both in connection with the amount of food that was obviously prepared and consumed on the premises and with the working of iron, it may have provided a drier storage place for kindling and fire wood than the surrounding floors. It could have also been used for the storage of food.

The finds probably throw some light on the men garrisoning the turret. The diet seems to have been a barbarian one. There were no mortaria, and though some amphorae sherds were found (5 in IA. 1, 2 in IA. 2, 2 in IA. 3, and 1 only in IB) they indicate an absolute minimum of wine drinking. Fragments representing about one dozen flagons were found in IA. 1, but only 1 flagon sherd in IA. 2, and none subsequently. On the other hand a large number of animal bones were found, indicating a high proportion of meat in the diet. As to their comparative wealth, Samian was in a very small but constant supply (some half dozen sherds from both IA and IB). Only one coin was found. Standards of tidiness inside the turret seem to have declined towards the end of IA, and the floor of IB, especially considering that it survived only partially, contained a noticeable amount of rubbish, particularly bone.

No general conclusion can be made about the history of this and other minor structures in this particular Wall sector, as there is no published evidence, other than that for turret 19a, for the period of occupation of milecastles 18 and 19, or turrets 17b, 18a or 19b.

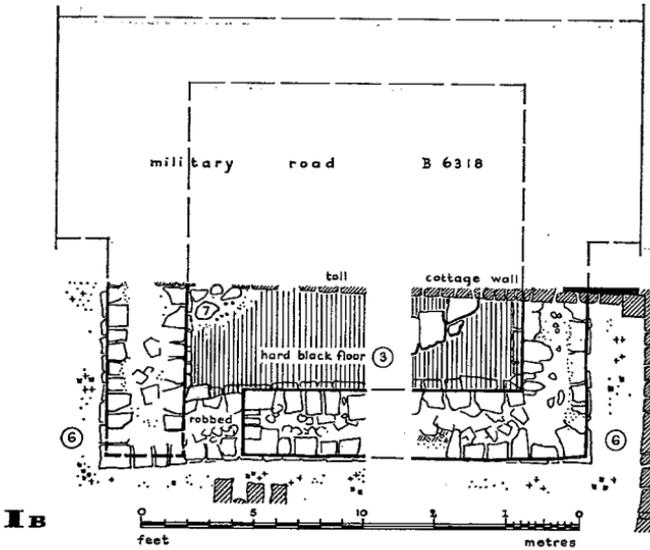
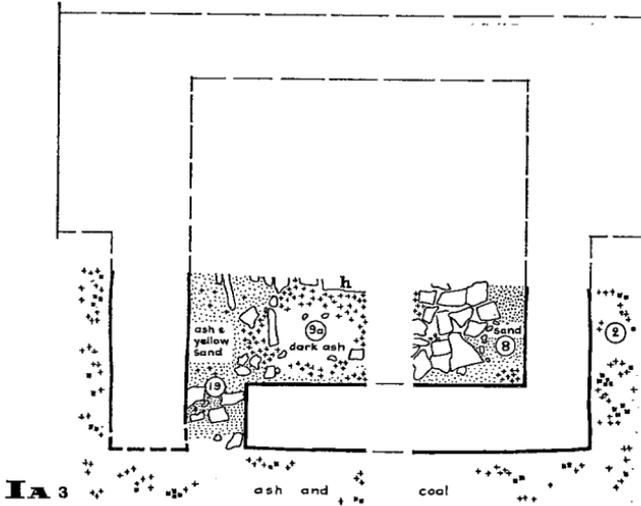
Acknowledgements are due to the County Surveyors' Department for giving permission for the excavation to take place, and for the loan of signs, barriers, and danger lamps. The heavy digging was done by Mr. Hindley, who also filled in single-handed. Thanks are due to the volunteers who helped on the excavation, and in particular Miss B. Gobel and Mr. J. Coombs. Mr. J. P. Gillam gave much valuable advice on the coarse pottery, and Mr. B. Hartley identified

the Samian. Mr. R. P. Wright commented on the graffito, Mr. A. Thompson of the Ashmolean Museum on the coin. Mrs. Askew gave a preliminary identification of the animal bones, which later went to the Passmore Edwards Museum. Mr. C. T. P. Woodfield drew most of the pottery and small finds.



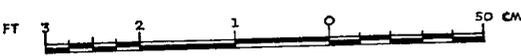
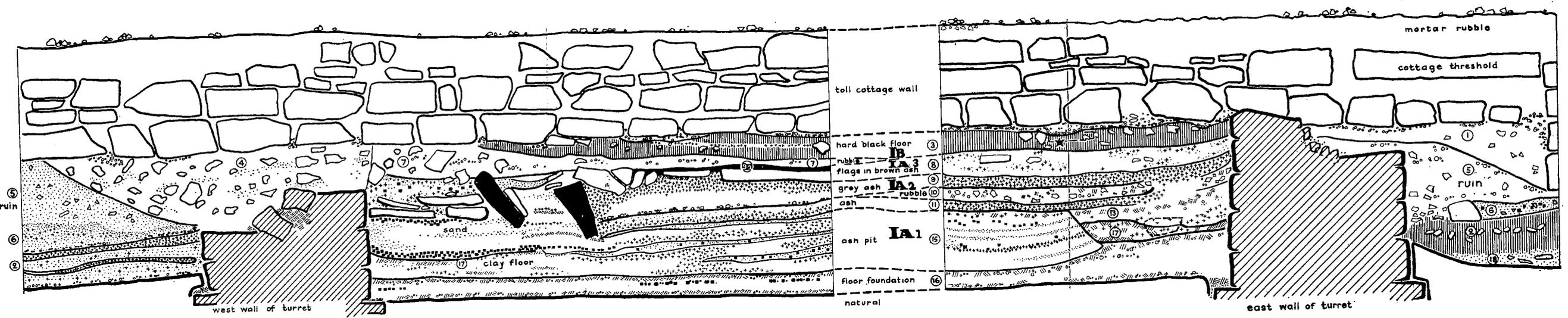
CW = PW

18b



CW•PW

# TURRET 18 b



## KEY

all drawings

|             | plan | section |          |          |
|-------------|------|---------|----------|----------|
| clay        |      |         | ash      |          |
| sand        |      |         | charcoal |          |
| mortar      |      |         | coal     |          |
| turf        |      |         | rubble   |          |
| occupation  |      |         | hearth   | <b>h</b> |
| veg. matter |      |         | ~ sect.  |          |

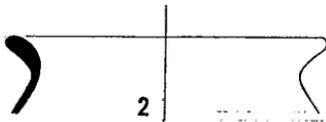
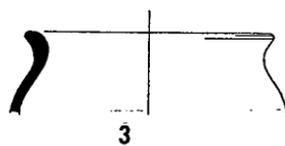
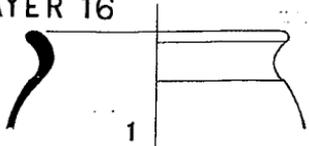
CW·PW



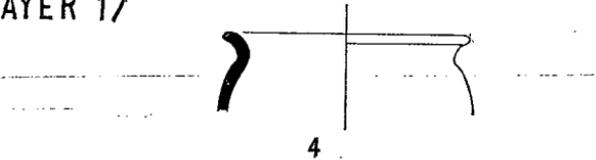
1a.1

18b

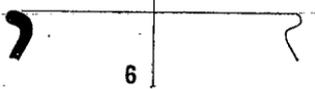
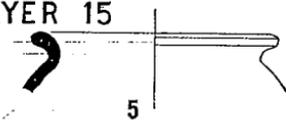
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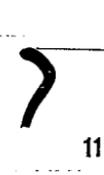
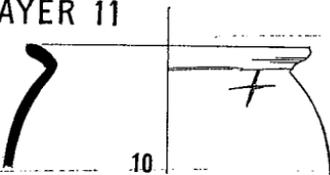
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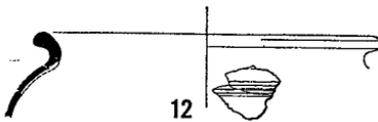
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LAYER 11



LAYER 10



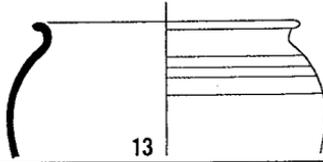
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**1a2**

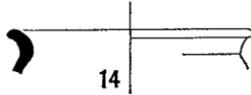
**18b**

LAYER 9

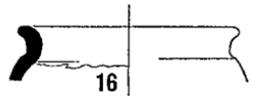
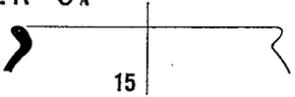


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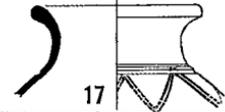
LAYER 8



LAYER 9<sub>A</sub>



LAYER 19

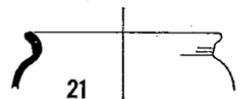
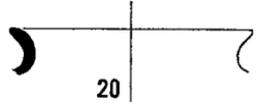
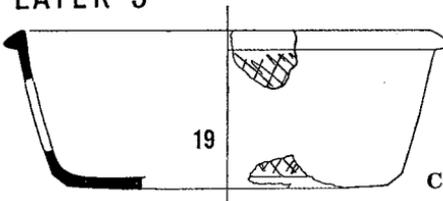


**1b**

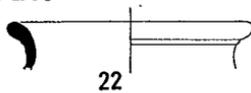
LAYER 7



LAYER 3



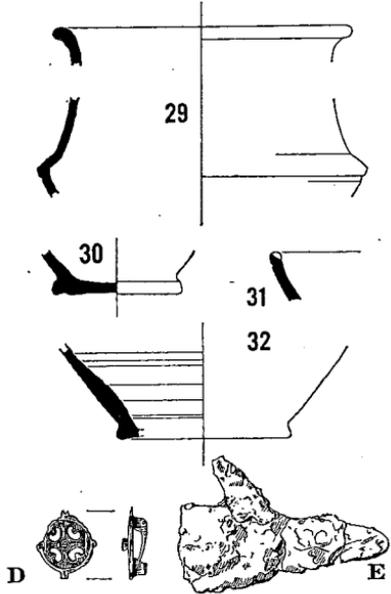
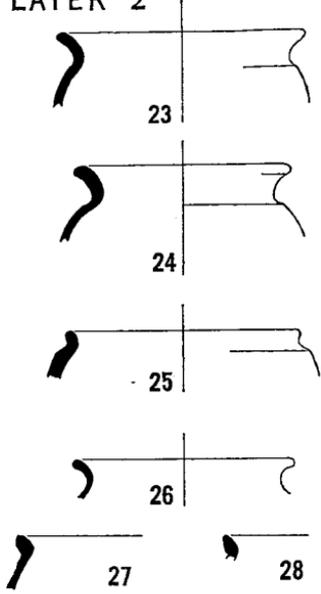
LAYER 6



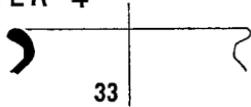
**1a&1b**

**18b**

**LAYER 2**



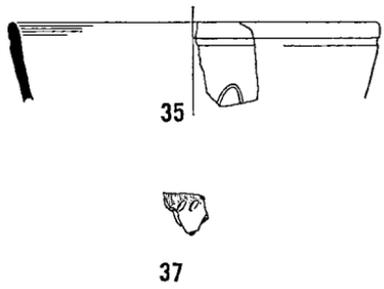
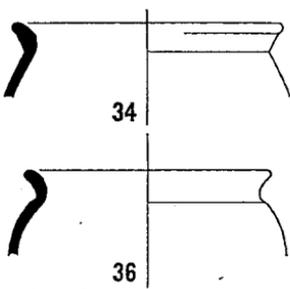
**LAYER 4**



**LAYER 1**



**UNSTRATIFIED**



## TURRET 25b, ST. OSWALDS

This turret was located by Thomas Hepple on January 29th, 1930. His notebook states that the turret walls were left fairly high all round and would well repay excavation. Three or four courses of the south face were stated to be left, and the position was given as 138' west of the fence west of St. Oswald's church. The turret was located without difficulty. Its centre was, in fact, 135' west of the fence mentioned, and 30' 9" south of the stone wall bordering the field to the north at this point.

The excavation of this turret was undertaken in the summer of 1959 subsequent to the excavation of turret 26a, which had raised the question whether more turrets east of the North Tyne might not have gone out of action at the end of the second century than had previously been supposed. Information from the farmer at Hill Head also indicated that the turret and Great Wall were being reduced rapidly by deep ploughing. This turret was inspected in detail by the members of the eighth Roman Wall Pilgrimage on September 10th, 1959.

*Construction of the turret.* The internal dimensions of the turret are 11' 4" north to south and 13' 7" west to east. The west, east and south walls are 3' thick, and the north wall is 5' 3" thick. The width of the Great Wall varies between 9' 6" and 10', and the depth of the recess of the turret into the Great Wall is 4' 6". The foundation of the turret was offset about 2½" to 3", and was rather intermittent in its appearance. The foundation course of both turret and Great Wall consisted of one course of flags laid on or just into the natural clay or rock, and were covered with solid yellow clay, which incidentally prevented their being seen by the stone robbers. The first course was offset internally along the east wall some 2", but not elsewhere in the turret. The first course



Fig. 1. *Turret 25b*, St. Oswald's, from the north-east



Fig. 2. *Turret 25b*, St. Oswald's. Detail of doorway, showing alterations



of the Great Wall was offset 3" along both north and south face. The core of the turret walls was mortared, but the core of the Great Wall was dirty yellow clay and small rubble (stones about 7" square or less). A puzzling feature about the construction was the amount of material, dumped clay and occasionally mortar, placed round the turret and the Great Wall to the west, east and south, to a maximum depth of 2' 6". The makeup for the floor inside the turret was also unusually thick, consisting of some 18" to 22" of dumped clay and mortar. It is possible that as the north face of the turret and Great Wall were sitting on rock, and the rest of the Great Wall and the turret on clay, that there had been a tendency for the whole structure to tip to the south, and the angle of the surviving first course of the south face of the Great Wall shown on section 2 rather confirms this. The clay and mortar tips were extremely heavy and hard packed and may have acted as buttressing, or been thought to have done so. The turret construction is of the type generally associated with Leg. XX.

In general the turret was structurally reasonably preserved, except for the north-west corner, which was robbed out to foundation level. The north face of the Great Wall survives to the height of one course above foundation, this course consisting of noticeably large stones, and one stone only of the course above that remains. The south face of the Great Wall survives two courses above foundation in part at the east, and one course above foundation at the west. The west and south walls of the turret survive in the main to a height of three courses above foundation, but the east wall is reduced to two courses at the point where Mr. Hepple's digging was identified, and there therefore appears to have been a loss of one or two courses here. The plough soil was in places only 4"-5" thick above the masonry, and it seems likely that more of the turret will be lost in the near future. The turret produced no window glass and no roofing tiles either of stone or fired clay. There were a considerable number of nails. There was a spread 2' 6" thick of white

lime along the north-west face of the turret directly overlying the natural rock and clay, which indicated lime burning in the vicinity, presumably just before the time of building. This was overlaid by a loose deposit of very bright reddish purple fired material which contained a noticeable number of bright red fired sandstone flags. However it also contained unfired clay and stone and may represent the destruction and levelling of the lime firing area.

*Period IA.* A pinky brown sandy floor had been laid over the thick clay foundation tips in the turret. Even this, the earliest floor, had been in places destroyed by the plough, though in part it does survive to a depth of 5"-8". There was only the barest trace of it in the north-west corner of the turret, and no trace at all in the north-east. This floor dipped towards the doorway and generally sloped towards the south.

The south-west corner of the turret appeared to have been marked off from the beginning as a separate "working area". Boulders (of an average size of 8" x 12" x 15") had been used to demarcate its limits, and it had its own floor of brown clay and stones laid directly on the yellow foundation tips, most noticeable at the north of this area, but continuing to the south and under the later platform. The area contained three hearths (simple blackened highly fired areas) and a general deposit of pink fired sand, ash and coal.

Initially there had been a deposit of rather rough stone paving laid along the south face of the turret from the south-east corner to about 3' inside the south-west corner. This was at a lower level than the floor inside the turret. After a short period of occupation, during which some 4" of fired material and rubbish had been deposited on it and, in fact, burying it, a small wall, with a rough foundation some 1' 3" wide and a thin course of flags below this, had been built to windward of the entrance, presumably to act as a windbreak, and a paved path coming from the doorway at a sharp diagonal had been laid. Pink fired material had built up then noticeably to the east of this wall. The paved path was continuous with paving laid in the doorway, and it appeared

that alterations carried out inside the entrance were contemporary with this new external work. Inside the entrance a pit had been dug, removing presumably the previous floor and some 12" of the clay foundation. It was more or less a 4' square on plan, and had been repacked with sand, clay and paving in that order. This new entrance was several inches lower than the main floor level, but the purpose of the alteration is rather obscure. It may simply have become difficult to shut the door. The gap on the east side of this paving in the doorway is very regular and looks as if masonry, or perhaps a monolithic door jamb had been removed at some later date. This door jamb, if it existed, would, like the surviving stone to the north of it, have been secondary, the original entrance having no return. The face on the west side of the entrance is rough and uneven, and appears to have been damaged, perhaps here too, by the later partial removal of a door jamb. Probably at the same time as the alterations at the entrance were made, a platform, which lay along the internal south face of the turret, had been constructed. The stones forming the eastern edge of the platform had been inserted into a cut made into the sand floor, but west of this there were no signs of any cut into earlier floors, rather the brown clay working area floor, together with 2" to 4" of occupation material on it, ran under the platform. This platform was 7' 6" long, and 2' to 2' 4" wide. The stone work was rough, but as its top levels were overlaid by a mortar, earth and rubble spread, which was plainly plough disturbance, it doubtless carried at least another course.

Any other occupation levels inside the turret had been destroyed by the plough, but it should be noted that after the top soil had been removed a very definite strip of mortar, some 6' long and 2' 6" wide showed clearly running west to east across the turret, along the line of, and some 12" to 18" south of the south face of, the Great Wall. At the eastern end of the strip there were some half dozen stones, apparently set in this mortar. (This strip is shown on section 1, and, as can be seen, the stones were laid directly on the sand floor.

Again on the plan these stones are shown just west of the 1930 trench. The mortar strip, however, is not shown, but it extended from these westwards, covering the area of brown clay and stones marked on the plan.) The thick bright red fired deposit outside the turret to the south and east, which seems to represent clearings out from it, contains no material later than period IA, the later rubbish deposits having been ploughed off, but the dump of mortar and yellow clay which surrounded the turret to the west and south west, and gave out just before reaching the diagonal wall outside the turret entrance, did contain pottery of a later date (to late Antonine). There is no evidence from the large mass of unstratified material for occupation later than this.

### Pottery

The layer numbers are excavation numbers, and are retained for ease of reference to locate the exact position of pottery on plans and sections. They have no chronological significance as regards the history of the turret.

#### Period IA.

*Layer 10b.* Brown clay dumped against external turret walls to south of Great Wall.

1. Neck of flagon, orange ware with white slip. *cf.* Gillam 5, Hadrianic. *See* No. 7.

This level also included 1 base? and 1 grey jar rim.

*Layer 10.* Blue and yellow clay dumped against turret walls over 10b.

2. Jar in light grey hard ware, with fluting on the body, and burnished shoulder; (there were several fragments of the same vessel burnt to a bright yellowish pink on the outer surface.) Development of Camulodunum 218, date there given as post-conquest. An unusual vessel in these parts. This is not the first occasion on which a vessel has been found on Hadrian's Wall and on the Antonine Wall to which the closest parallels are vessels of an earlier date in the Belgic regions of Britain, whatever the explanation of this phenomenon may be.

3. Straight necked narrow mouthed jar in grey ware. Hadrianic.

This level also contained some 30 sherds of grey jars, apparently representing largely one vessel; 15 sherds of black burnished ware apparently representing 2 vessels, and 4 sherds representing 2 flagons.

*Layer 11.* Yellow clay foundation for floor.

4. Jar in pale grey ware. Version of Gillam 108, 80-130.

5. Jar in hard grey ware. Version of Gillam 115-117.

6. Flagon in grey ware with flared rim.

7. Flagon handle with two ribs, orange ware with white slip.

This is almost certainly from the same vessel as No. 1.

This layer also included 10 sherds and base of jar No. 4, 4 flagon sherds and 1 black burnished sherd. (In three of the turrets now reported on fragments of quite typical black burnished cooking pot fabric have been found in construction levels. As the turrets are among the first things to be built on Hadrian's Wall in or soon after A.D. 122, this suggests that black burnished wares began to reach Hadrian's Wall a year or two earlier than the date 125 suggested in Gillam.)

*Layer 6.* Fired sand and stones along north face of Great Wall.

8. Jar in light grey ware. Possibly a surviving pre-Hadrianic vessel.

This layer also included 25 sherds of grey jars, 2 rustic sherds, 1 grey and 1 pink (refired?), 4 flagons and 3 black burnished sherds.

*Layer 8.* Pink fired sand outside turret to south west.

9. Jar in very pale grey ware. *cf.* Gillam 111, 110-130.

This layer also produced 8 sherds of grey cooking pots, 2 black burnished sherds, and 2 flagons.

*Layer 3.* Pink fired sand outside turret to south and east, runs west as far as screen wall.

10. Cooking pot in grey ware. *cf.* Gillam 117, Hadrianic.

11. Cooking pot in pale grey fabric. *cf.* Gillam 116, Hadrianic.

12. Dish in pitted soft grey fabric.

13. Jar or cooking pot in pitted pale grey fabric and darker surface with burnished bands. *cf.* Gillam 115.

14. Cooking pot in hard pale grey ware, fired red. Similar to Gillam 115.

15. Flagon or small flask in grey ware with red-brown slip.

16. Ring necked flagon in orange ware. *cf.* Gillam 4, 90-130.

17. Vessel in pale grey ware with darker surface. Possibly related to Gillam 218, Hadrianic.

18. Flagon or ? candlestick in orange ware with red slip. Resembles Jewry Wall, fig. 57, No. 4, there not stratified.

19. Ring neck flagon in orange ware. Variant of Gillam 2, 70-110.

20. Rough cast beaker with cornice rim. *cf.* Gillam 72, 80-130.

21. Cooking pot in grey ware, with brick red base and brick red core.

22. Cooking pot in black burnished ware fired grey externally.

23. Bead rim cooking pot in black burnished ware, with high burnish on shoulder. *cf.* Gillam 118.

This layer also contained 5 sherds of a black colour coated rough cast beaker of fine quality (Hadrianic), some 90 sherds cooking pots and jars in grey ware, some 10 sherds of black burnished ware, 1 grey rustic sherd, some 20 flagon sherds—many representing 1 flagon in brick red ware. *Samian*. 1 chip of unidentifiable Samian rim. This level also produced in its upper levels, just below the topsoil, some 25 sherds grey cooking pots or jars, some 18 sherds black burnished ware, some 25 sherds apparently of flagons, mostly from one red flagon, but there were fragments of other vessels including one with cream slip.

*Layer 9.* Floor material (pink brown sand) containing occupation debris.

24. Dish of pale grey ware with grey/brown finish, and trellis. Probably originally black burnished. *cf.* Milecastle 50 TW no. 42. Hadrianic.

25. Cooking pot in pale grey fabric. *cf.* Gillam 115, 120-140.

26. Cooking pot in pale grey fabric. *cf.* Gillam 115, 120-140.

27. Rough cast beaker in brown fabric. *cf.* Gillam 72, 80-130.

This layer together with 9a also contained some 40 sherds representing grey jars and cooking pots, some 4 sherds black burnished ware, some 4 sherds grey rustic ware with low relief, sharp and linear, and some 4 or 5 flagon sherds.

*Layer 16.* Brown clay, directly overlying yellow clay 11, with large stones embedded in it, forming "working area". It ran under the platform.

28. Rough cast beaker in light orange self-coloured fabric. Large version of Gillam 75. Hadrianic.

29. Cooking pot or wide mouthed jar in hard pale grey ware, with high lattice and burnished lines around neck.

This layer also contained some 6 sherds probably of 1 grey jar, and 1 flagon sherd.

*Layer 9a.* Working area, hearths, ash and sand, runs under platform.

30. Jar in cream fabric, fired from pink clay.

31. Small cooking pot in black burnished fabric. *cf.* Gillam 121. Hadrianic.

*Layer 17.* Occupation under platform. 1 sherd hard grey jar, sharp rustication, 1 flagon sherd.

*Layer 1.* Hard sand and mortar surface, with noticeable coal scatter, overlying 9 surviving in part only.

32. Flagon in pink ware.

33. Lid in self coloured pale grey ware, or may be narrow mouthed jar.

This layer also produced 26 sherds of grey jars and cooking pots, 2 sherds grey rustic ware, 2 sherds pale buff rustic ware, 2 white flagon sherds, 7 sherds and a very weathered rim fragment of a jar in pink fabric apparently trellised of Gillam 117 type, and 8 sherds of black burnished ware.

*Layer 14.* Sand in doorway. 2 sherds grey jar, 1 flagon sherd.

#### Period Ib.

*Layer 2.* Clay and mortar outside south and west faces of turret.

34. Cooking pot in pale grey sandy ware. *cf.* Gillam 115-117.

Residual.

35. Cooking pot in grey ware, probably originally black burnished. *cf.* Gillam 120. Hadrianic/Antonine.

36. Bowl in black burnished fabric. *cf.* Gillam 223 variant. Late Antonine.

37. Bowl in black burnished fabric. *cf.* Gillam 225. Late Antonine.

38. Jar in grey ware, same general character as Gillam 115-117. Hadrianic. Residual.

39. Mortarium in orange buff ware with white slip and white grit. Resembles Gillam 244 in form. Hadrianic/Antonine.

This layer also contained some 110 sherds of assorted cooking pots and jars in grey and black burnished wares, and 3 sherds probably representing flagons. Most of the pottery in this level was Hadrianic/Antonine, but there were some later second century sherds.

*Layer 5.* Mortar and soil—plough disturbed level associated with stones set in mortar east of balk.

40. Bead rim cooking pot in black burnished ware. *cf.* Gillam 118. Hadrianic/Antonine.

41. Cooking pot or jar in grey ware. *cf.* Gillam 115-117. Hadrianic.

42. Mortarium, orange buff ware with white slip and multi-coloured grit, fabric probably Hadrianic Antonine. Mr. R. P. Wright reads the graffito as XLI with the L cut a second time. There is insufficient evidence, he says, to show the purpose of this figure 41, or more.

This layer also produced 12 sherds of grey jars or cooking pots, 4 black burnished sherds and 1 flagon sherd.

*Layer 7.* Robbing trench for north wall.

This layer produced 3 bases of grey jars or cooking pots of Hadrianic types, and 8 other sherds, 2 showing different trellis. *Samian.* Base of Dr. 18/31, Hadrianic.

*Unstratified.* Topsoil.

43. Cooking pot in black burnished ware, altered and now matt. *cf.* Gillam 137. Late Antonine.

44. Cooking pot in black burnished ware. *cf.* Gillam 136. Late Antonine.

45. Pot in orange sandy ware.

46. Cooking pot in black burnished ware, refired light grey and red. Gillam 130, variant.

47. Cooking pot in black burnished ware. *cf.* Gillam 123. Hadrianic.

48. Small bowl in grey fabric. *cf.* Jewry Wall Fig. 44, No. 8, pre 160.

49. Small bowl in black burnished ware. *cf.* Gillam 222. Late Antonine.

50. Part of Dr. 37 with ovolo. Antonine.

Unstratified pottery also included some 140 sherds grey cooking pots and jars, 2 sherds of grey rustic ware, some 65 sherds of black burnished wares, some 40 sherds flagons in assorted white and pink wares, 6 sherds of 1 reddish buff rough cast beaker, 1 small sherd black colour coated ware with pinky buff fabric, and 1 piece 15th century pottery. *Samian.* 1 unidentifiable chip, and 1 chip of unidentifiable form, ware Antonine.

Nos. 43, 44, 46 and 49 probably all derived from a Ib deposit.

### *Small finds*

#### *1A. Layer 10.*

Iron studs from sole of shoe. On flagging laid on top of clay. *A.*

Iron nail, length 4 $\frac{3}{4}$ ". *B.*

Coal, not illustrated.

#### *Layer 11.*

Iron shoe stud,  $\frac{3}{4}$ " long. Not illustrated.

Struck flint, no secondary working. Not illustrated.

#### *Layer 6.*

Thin bronze disc. *C.*

*Layer 8.*

Iron nail, some 6½" long. D.

Sandstone pot lid, ¾" thick, with firing round outside. E.

Oyster shell. Only the isolated shell fragment occurs on this site.

*Layer 3.*

Fragment of bronze sheathing, presumably from shield or sheath. I.

Iron nail, length 2½", head ⅜" square. Also part of another large nail. Not illustrated.

Piece of bone sharpened as pointed tool. H.

Sherd of pottery with parallel barbotined white lines. The sherd is of a thin hard brown ware, and the surface appears to have a rough grey glaze. G.

Small fragment of thin glass, ⅛" thick. Dull surface on both sides, but glass itself almost colourless. Not illustrated.

Coal.

Oyster shell.

*Layer 9.*

Some 8 to 9 iron shoe studs, probably part of the same shoe. The rust preserves the remains of 3 thicknesses of leather. Also some 20 shoe studs, apparently all part of another shoe from just inside the turret entrance. Again rust preserves three thicknesses of leather.

Flake of struck flint showing bulb of percussion. No secondary working. Not illustrated.

1 piece of amphora with secondary hole surviving in part, diameter some ½" to ¾".

Coal.

Oyster shell.

*Layer 16.*

Some half dozen iron shoe studs, rather corroded. Not illustrated.

Part of a substantial iron nail. Also iron disc, 1¼" in diameter, original thickness probably c. ¼".

*Layer 9a.*

Iron arrow head.<sup>1</sup> J.

Fragments of 2 large nails, and 2 smaller nails, length about 1".

Base of glass bottle, pale green glass. Bases of glass bottles occurred also at turret 26a and turret 35a. Perhaps used for starting fires. K.

<sup>1</sup> Carmuntum. (*Der Römische Limes Oesterreich*, Vol. 2 (1899) Taf. 22, Nos. 16 to 24.)

*Layer 1.*

Fragments of some 2 or 3 iron nails, and an unidentifiable piece of iron strip, much bent,  $\frac{1}{2}$ " wide and some 2" long.

Part of sandstone pot lid, 1" thick, central portion blackened by fire, broken across straight edge. L.

Coal.

*Layer 12.*

Some 30 iron shoe studs, apparently part of same shoe, on flagging in entrance. Also part of a substantial iron nail.

Oyster shell.

*IB. Layer 2.*

Fragment of iron nail.

5 gaming counters, made respectively from a piece of decorated Samian, a piece of plain Samian, light and dark grey pottery and a bone button, with central hole. M.

*Layer 5.*

Iron nail of rectangular section, length  $1\frac{1}{4}$ ", tapers from 5 mm. to  $2\frac{1}{2}$  mm.

*Unstratified.*

Small bronze fastener. N.

Small piece of cut bronze. O.

Bronze stud. P.

Piece of sheet bronze, silvered. R.

Iron shoe stud. Q.

Also one other rather corroded shoe stud, and various fragments representing 10 nails.

Piece of lead from the core on top of the Great Wall west of the turret. Sheet lead  $2\frac{1}{4} \times 1\frac{1}{2}$ ". There are 9 small stabbing marks on one side of it. Only 1 or 2 mm. thick. Not illustrated.

Sandstone pot lid 1" thick, with traces of firing round the rim. S.

Struck flint flake, no secondary working. Not illustrated.

Fragments of mussel shell.

*Mortar samples*

Fragments of yellow/white mortar with very heavy admixture of lime, some quartz and very small fragments fired tile occurred in layer 3 and unstratified, but the mortar associated with layer 5, perhaps a Severan blocking, was hard, yellow and sparkling, with the admixture of much fine quartz particles. This also occurred unstratified, but in less quantity, than the other.

Irregular lumps of fired clay (largest  $2 \times 2 \times 1$ ") were built in with mortar at the angle of the east wall of the turret and the Great

Wall. Lumps of fired clay were also present in the dumped clay inside the turret (11) up to sizes of about 3"×2"×1".

A sample of the partly fired limestone from the spread to the north of the turret was also preserved.

### *Summary*

Excavation confirmed that an adjacent turret in this wall sector to the recently excavated 26a also appeared to have gone out of use in the 2nd century. (It also unfortunately confirmed the suspected denuding of turret 25b by ploughing. At least two courses seem to have gone since 1930, and deep ploughing will accelerate this destruction.) The mortar strip found running across the turret from west to east in line with the south face of the Great Wall may be the remains of the foundation of a blocking wall across the recess, but not enough of it survived for any convincing interpretation. However the stones set in mortar were definitely *in situ*, and it is difficult to know what else this feature would represent. While it is not easy to argue conclusively from negative evidence, the complete lack of pottery assignable to the third and fourth centuries out of over 250 sherds recovered from the plough soil would seem a very strong indication that the turret was not occupied during those periods.

The excavation did make it apparent that in order to have any real idea of the scale of occupation that had taken place and the amount of material, pottery and so forth in use in a turret, it is necessary to clear an area of some size outside it. In fact the trench still left untouched what was patently an extensive further stretch of rubbish continuing beyond it.

It seems likely that this turret was constructed near the site of an earlier lime kiln, presumably lying just to its north. The presence of a pre-Hadrianic vessel (no. 8) in the deposit, apparently representing the levelling of the lime working area, spread along the north face of the turret, rather confirms this. Not much can be said about the use of the turret with so little surviving internally, but it is clear that cooking

was an important activity. (Here the platform seems to form one side of the working area, and its function is probably related to it, perhaps being food or fuel storage.) The diet of the garrison seems to have been rich in meat, and mortaria were scarce on this site, only the two drawn sherds being found. There was an exceptionally large number of flagon sherds from this turret, apparently representing at least fifty flagons and presumably a considerable thirst on the part of this particular garrison. There was also a slightly larger number of amphora sherds than usual (not plentiful at any of the turrets excavated), some 18 in IA. The garrison does not seem to have been able to afford much Samian, only four sherds being recovered. No coins were found, but five gaming counters were discovered in a little group in the angle of the west wall of the turret and the Great Wall. This would be beneath the accepted position for a window, and they were perhaps thrown out in a quarrel, or to avoid detection if gambling was not a proper occupation for a turret garrison. (Draughts boards were found at Limestone Bank and Willowford East, so these may have been draughts.)

Obviously a considerable amount of cleaning went on inside the turret to provide the mass of material outside, but the immediate purlieus of the building cannot have been very savoury, nor indeed was the interior kept entirely free of rubbish. A minor but curious fact observed was that shoes, or parts of shoes, seem to have been abandoned just outside, just inside, and on the flagging of the entrance at various times during period IA.

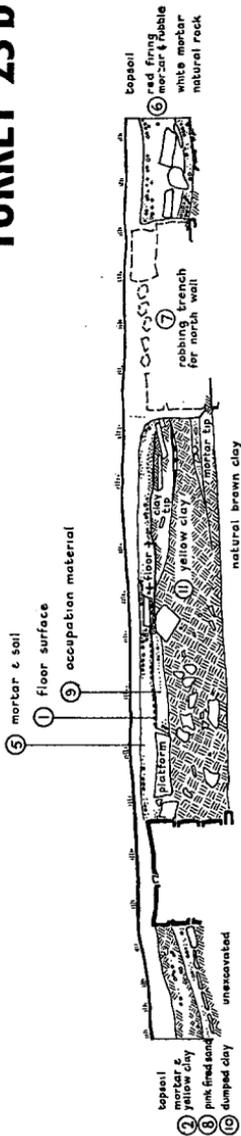
In this immediate Wall sector it should be noted that a search was made for turret 25a in the position recorded by Mr. Hepple. His notebook gave the position as "28 feet west of the first fence east of Hill Head", the date being 31st January 1930. The position was also stated to be 40' from the south lip of the Wall ditch. A ten foot square over this measured point taken down to natural at a depth of some 4' (the area has been raised by modern tipping) revealed no structure and no Roman material whatsoever. A scatter of

big sandstones lying in clayey sand just above the natural might have been mistaken in Mr. Hepple's small trench for a laid wall, some overlying others. Mr. Hepple verbally confirmed this position as being where he remembered to have dug, but did not recall what he had actually found. The position of this turret should probably be considered as still unknown. Further, there is no published evidence for the length of occupation of milecastles 26 or 25, or turrets 26b, 25a and 24b, so it is not possible to make any general conclusion about the history of this wall sector. The fact that two turrets in one wall mile are now seen to have gone out of occupation at the end of the second century raises particular interest in the history of milecastle 26. As the history of occupation of milecastles is known for only some half dozen, and the detailed published history of the occupation of turrets for something less than twenty, of which a good many appear to have ceased being occupied in the second century, it may well be that the Severan modifications were very much more drastic than had been thought.

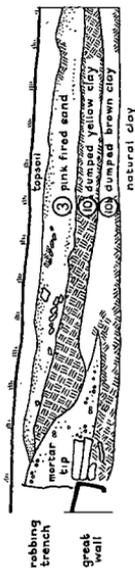
Acknowledgements are due to the Inspectorate of Ancient Monuments, Ministry of Works, and to the tenant of Hill Head farm for permission to carry out the excavation. The heavy digging was largely done by Mr. Thomas Hindley, who also filled in single-handed. Thanks are due to the volunteers, particularly Miss Betty Gobel, Miss Mary-Jane Mountain, Mrs. O'Driscoll, Miss Dorothy O'Driscoll and Mr. Paul Woodfield. Mr. Charles Anderson organised the equipment, Mr. Peter Wallace gave photographic advice and assistance. The pottery and small finds were largely drawn by Mr. Paul Woodfield. Mr. J. P. Gillam gave much valuable advice on the coarse pottery, and Mr. B. Hartley identified the Samian. Mrs. Askew gave a preliminary identification of the animal bones, which later went to the Passmore Edwards Museum. Dr. Graham Webster supplied the reference for the arrowhead.



# TURRET 25 b



section 1



section 2

feet 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

CW-PW

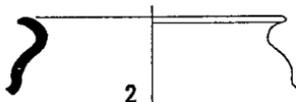
**1a**

**25b**

LAYER 10<sub>B</sub>



LAYER 10

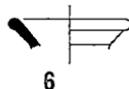
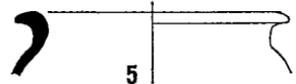
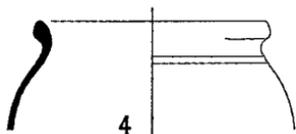


**A**



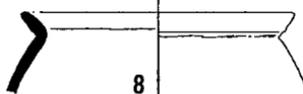
**B**

LAYER 11



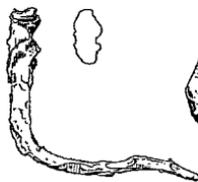
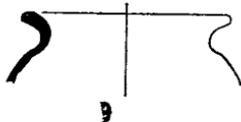
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LAYER 6

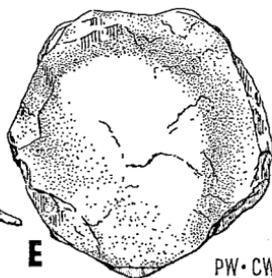


**C**

LAYER 8



**D**



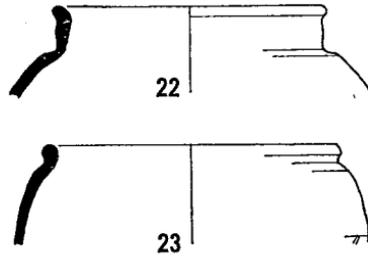
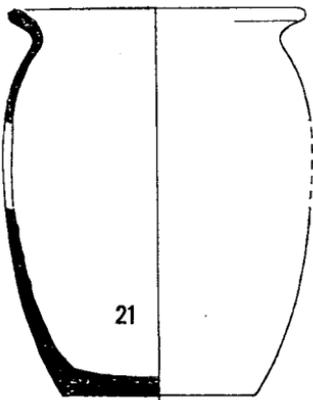
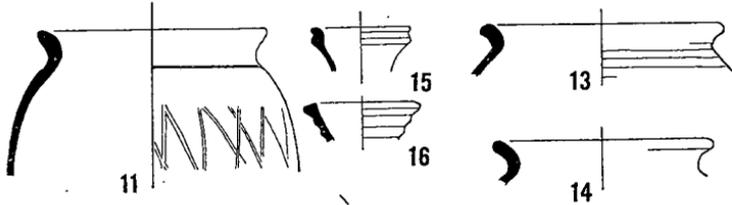
**E**

PW·CW

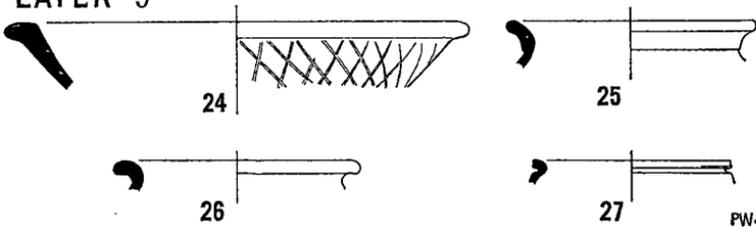
**1a**

LAYER 3

**25b**



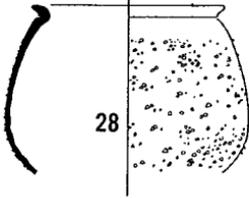
LAYER 9



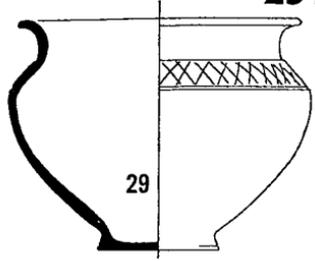
PW-CW

**1a**

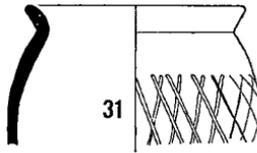
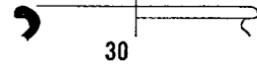
LAYER 16



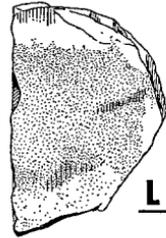
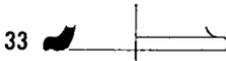
**25b**



LAYER 9A

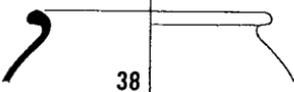
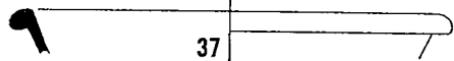
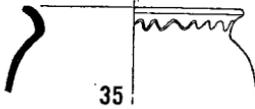
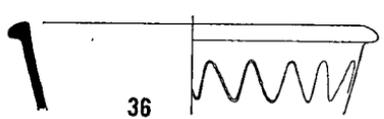
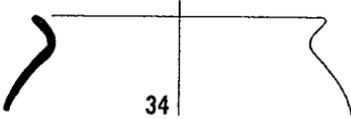


LAYER 1



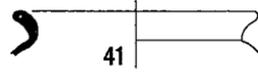
**1b**

LAYER 2

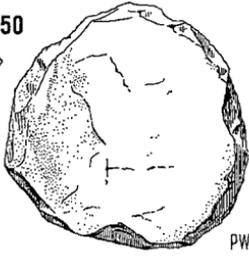
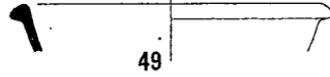
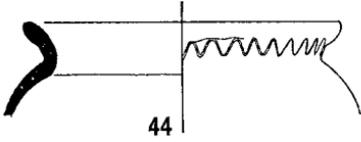
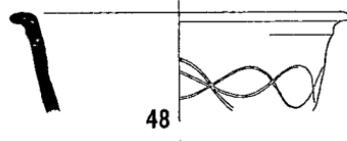
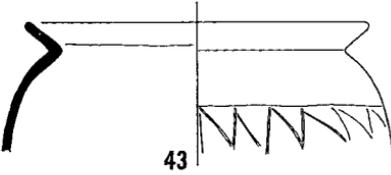


CW · PW

LAYER 5



UNSTRATIFIED



PW

## TURRET 26a, HIGH BRUNTON

The excavation of this turret was decided on in the early summer of 1959 by the Durham University Excavation Committee. It had previously been located by Mr. Thomas Hepple on January 24th, 1930. He had found the foundation of the south wall and its return at the east, indicating an eastern entrance. He also found some pottery. The position was given as 196' west of the first fence east of Brunton cottages, and this measurement is marked by a star, just inside the turret entrance. Mr. Davison, the farmer, kindly gave permission for excavation, but specified that no damage had to be done to the hawthorn hedge, which covered the main body of the south wall, the oat crop which overlay the presumed external face of that wall, or to the timber within the wood where the main body of the turret lay. An oak tree of 6' girth was growing on the south-eastern third of the turret by Mr. Hepple's measurement, and an elm tree on the southern face of the Great Wall to the west, and part of the west wall of the turret. The turret was, therefore, only partially available for excavation.

*Construction of the turret.* The internal dimensions of the turret are c. 12' 6" north to south and 11' 9" to 12' east to west, taken from the foundation course. The offset above the whin and sandstone foundation, set in and covered by grey clay, where it survives, varies from nothing to 6", but was probably intended as from 2" to 3". There was no evidence for any other internal offsets. It was not possible to expose either the west or east walls of the turret completely at any part, but Mr. Hepple gave the thickness of the south wall as 3' 10" at foundation level. The thickness of the north wall was presumably about 5' 3" across the foundation. The width of the Great Wall was 10' east of the turret taken across the first dressed course above the whin foundation, but on the south face there was an offset above

this of 4" to 5", and another offset of 3" to 4", giving a probable width of the Great Wall of some 8' 8". The core of the Great Wall was rubble (sandstone and whin) set, often sparsely, in rather dirty yellow clay. (This core often projected in the wood above modern ground level.) The whin foundation to the Great Wall was observed in this easternmost trench to project some 14" south of the Great Wall (not drawn) and some 2" to 3" to the north, and west of the turret this whin foundation only survived, at a depth of 2', under a mass of robbing debris. It measured 10' 9" to 11' across, was set in blue grey clay, and indeed totally covered by it, and consisted for the most part of whin boulders, sometimes split, though some of the smaller stones were red and yellow sandstone. Underlying the whin boulders was a smaller rather intermittent thin foundation of smaller stones set in sand and laid on the hard brown clayey sand which was the natural subsoil. These were much more obvious in the north of the trench. There was no trace of the 6' wall which can be seen 12' 6" east of turret 26b, or in the western part of the wall where it is preserved at Planetrees, and certainly no point of reduction had occurred 16' east of turret 26a, in a comparable position to the occurrence of the 6' wall at Low Brunton turret. The robbing in this area was on such a scale—presumably for the building of Brunton cottages opposite, that the question of the width of the Wall in this sector was not pursued further. However the Wall did survive to a height of 26", three courses, above the whin foundation immediately to the east of the turret, and the north-east corner of the turret survived to a height of 2', two courses above foundation. The make-up for the first floor of the turret, which was laid directly on the natural sand without trace of an old ground surface, consisted of tips of grey clay and mortar, varying in thickness from 3" to 10", and there was a hearth in the extreme south-west corner of the turret laid directly on the mortar foundation, which consisted of a red sandstone flag about one foot square, overlaid with grey and orange fired clay.

*Period IA. 1.* The first floor in the turret consisted in part of brown clay, and in part of very solid dumps of stone on about 1" of clay of varying character. In the north part of the turret, the stone was particularly thick and close packed, in the north-east corner being so tight and firm that it seemed to have been rammed in, and packed neatly against the wall. The extreme north-west corner of the turret was almost entirely free from stone, and this area was divided from the stony area to the east by a little kerb of vertical stones. This consisted of three triplets of stones, the central one in each case being a yellow sandstone flag of 1' x 9" x 1½" backed on each side by a smaller flag about 9" in length. This feature came to an end 5½" from the section, but the star on the drawn section marks where the top of this feature would have come if projected on to it. Just west of the turret centre was a hearth area, constructed of big flags and massive whinstones. The south-west corner of the turret seemed to have been disturbed, but there was a patch of small red sandstone flags in rather earthy material. The extreme irregularity of the stones and the angle of setting in the north of the turret, and their unworn appearance makes it unlikely that this was actually a flagged, but rather a reinforced clay floor.

*IA. 2.* The brown clay and stone floor was resurfaced with sand, which gave a noticeably good rather yellow floor in the south part of the turret, but the main difference was one of texture and density and this reflooring was barely visible on section or in the north-east part of the turret, where it could not be identified with real certainty. This reflooring was, however, sufficiently radical to cause the disappearance of the earlier rather substantial hearth, and the appearance of a new hearth, lying to the south of the earlier one, consisting of one big flag cracked with firing, and covered with clay which was burnt brilliant orange and purple. (Part of a hearth was picked up in the north-east part of the turret, but it is possible that this related in fact to IA. 3.) The little partition of kerbing was still in evidence, projecting

some 3" above the surface. There was a scatter of small flat flags in the south of the turret, and in the north the earlier rubble protruded somewhat through the surface producing an effect similar to small flags. The two stones exposed at the south of the turret were somewhat like wall facing stones in appearance and were laid in sand. They projected some three inches above the general level and the disturbed stone lying diagonally to the west of them was of a similar character (depth of stone some 7"). It seemed possible that they might represent the remains of a platform, but they were not mortar set.

*IA. 3.* This last floor was succeeded by another re-flooring in sand, but this time the floor material was fired, and was a definite red colour. The hearth was now moved again to a position slightly north of centre. It had had a succession of firings piling up inside it on top of its clay floor, and apparently being raked out to the north, where there was a slight scoop filled with ash initially but building up into a gradually spreading mound over the occupation material of brightly coloured fired clays, shaley coal and ash about a foot in thickness. The stake hole seen on section seems to relate to this phase because its insertion appears to have pushed material identical to this red sand floor to the bottom of the hole. It is of course possible that this stake hole related to an earlier phase and the red sand trickled down from the side of the hole at the removal of this stake sometime late in *IA. 3.* The little partition kerb continued in evidence, though it now projected only about 1", again making a division between the thin, but recognisable red fired clayey sand floor to the west, which gave out some  $\frac{3}{4}$ " that side of the division, and the brown clay to the east. In the south of the turret the query platform was still in evidence, and there was an isolated patch of flagging some 18" to the north of it. West of this flagging was a patch of cobbling set in brown clayey material, which overlay in part a big flag, presumably representing intermittent patching of worn floor areas. A thin red layer lay immediately under these, and

although they were subsequently overlaid by other flagging, they may represent the earlier flagging of the next layer which had sunk into the soft occupation material below.

*IB.* Subsequently the turret received a rather more definitely "flagged" floor than hitherto, the flagging being associated with a fired red sand, which completely covered it in the last stages, but which gave out towards the edges of the floors to brown clay. This flagging appears to have been laid after some four inches or so of fired occupation had built up on the last floor, which presumably represents IA occupation, and some of the later flagging seems to have sunk into the earlier layer, and it was in fact difficult to separate the two periods of occupation one from the other. The little mound of highly coloured fired clay seems to have been flattened off, and was sealed off with  $\frac{1}{2}$ " of brown clay (not drawn). At this stage the partition in the north part of the turret had completely disappeared, and also the query platform in the south of the turret. However a structure, perhaps a working or storage area, was constructed centrally against the west wall of the turret. It consisted of two courses, a top course of two noticeably big flags set in very thick clean grey/yellow/pink clay, which projected slightly above the level of the other flagging. The northmost one was in part overlaid with pink clay. Underneath them was a foundation of rough stones and whin boulders set in mortar. Immediately to the east of this was an area of stone and small flags also set in clay, but somewhat lower in level, and these became totally covered in fired sand. There were hardly any flags in the north-east sector of the turret, only rather thin red sandstone, although in the north-east corner, at any rate, this was due to later cutting away.

*IB.? 2.* Subsequently the turret was reflagged in brown clay, but this level had been ploughed off in the western part of the turret, and could only be examined in the north-east quarter of the structure. It consisted of substantial flagstones, in part of two layers, set in brown clay, and related to it was what appeared to be a small platform or working

surface, apparently associated with butchery as one of its uses. The big flag that formed the surface of this structure was slightly blackened, and was laid on a course of small stones set in brown clay. There were three clearly defined courses and a fourth and fifth very rough rubble one. The fifth course was laid directly on the clay and rubble level 7. The whole structure was about 1' 3" deep. It had probably continued right into the north-east corner of the turret (the fourth course clearly did) and there were indications that it had done on the second course, but the area was disturbed by stone robbing. There was a gap of about 6" between this platform and the east turret wall, which was stuffed with butchered ox bones, 46 pieces, apparently cut through with a cleaver.

*IB.?* Of the next level in the turret an even more reduced area survived only some 2" to 3" below modern ground level in part. The remains consisted of a hearth apparently associated with bronze working, which contained up to 6" of black ash and coal, many fragments of cut bronze, and a small fragment apparently of a crucible. It does not appear, however, that this particular hearth could have been used for bronze melting, because no traces of molten bronze or slag were found. The hearth had a bottoming of clay laid on flat stones. The stones to the east of the hearth stood about 2" higher than it, and were big stones of some 7" in depth. They were set in brown clay. So little was left of this feature *in situ* that its original extent and purpose must remain in doubt.

There was no evidence to indicate that there had ever been occupation in the third or fourth centuries.

### *Pottery*

The layer numbers are excavation numbers, and are retained for ease of reference to locate the exact position of pottery on plans

and sections. They have no chronological significance in relation to the history of the turret.

*IA. 1.*

*Layer 9.* Clay and mortar initial foundation to floor in turret.

1. Pot lid in hard light grey ware, *cf.* Corbridge 1951, No. 50, early Hadrianic.

2. Jar in hard light grey fabric. *cf.* Gillam 107, 80-130.

3. Jar in red ware with black internal and external surface. Probably altered in refiring. *cf.* Colchester, fig. 54, No. 18, there dated 100.

This layer also included two light coloured jar sherds.

*IA. 1 and IA. 2.*

*Layer 7.* Brown clay with associated hearth and rough stone flooring and

*Layer 7f.* Sand floor with 2 hearths and possible platform. This sand floor was barely visible on section, but was very clear in plan.

4. Mortarium in light creamy buff ware with white quartz grit and low internal bead, *cf.* Gillam 242-3, early Hadrianic. Fragments of this mortarium came from both 7 and 7f.

5. Rim? of ? mortarium in grey fabric, probably refired. (*Layer 7f.*)

6. Cooking pot in black burnished ware refired grey. *cf.* Gillam 125. Hadrianic.

7. Jar in hard grey fabric. Resembles Gillam 28. Hadrianic.

8. Rim of jar in very hard light grey fabric. *cf.* Gillam 112. Hadrianic.

9. Cooking pot or jar in hard light grey fabric, *cf.* Gillam 113, early Hadrianic.

10. Large jar in thick hard grey ware with burnished outer surface.

11. Cooking pot or jar in light grey ware, with reduced dark grey external surface. *cf.* Gillam 117. Hadrianic.

12. Cooking pot in black burnished ware with wavy line round neck. *cf.* Gillam 119. Hadrianic.

13. *Samian* fragment of Dr. 37. Lower frieze. Hadrianic.

This layer also included some 30 sherds grey jars and 4 sherds of grey jar No. 10, 6 sherds of black burnished ware, 7 sherds of one trellised cooking pot with pronounced parallel ridges internally, and two buff trellis sherds, 1 flagon sherd with cream slip, and some 14 sherds of red ware, probably a flagon.

## IA. 3.

*Layer 8.* Red sand floor with patches of associated flagging and a new hearth. There was no trace of this level in the north-east corner of the turret.

14. Cooking pot in hard grey material burnished on shoulder, with a deposit of hard water scale internally. *cf.* Gillam 117. Hadrianic.

15. Jar or cooking pot in hard light grey material with very pronounced wheel marks internally, and a marked sag in the rim. *cf.* Gillam 117. Hadrianic.

This level also produced 3 sherds of a thick red jar.

## IB.

*Layer 2.* Flagging floor in pink fired sand.

16. Head of amphora in buff ware with very fine black grit, both handles incised. One handle is incised as the illustration, the other is incised with the diagonal cross, only, and no trace of the cross bar.

17. Rim of bowl in very smooth highly burnished pinky buff ware (may be refired); see No. 18 below.

18. Bowl in very smooth highly burnished grey ware (some sherds refired pink and buff). The rim appears to have been deliberately chipped off all the way round. Fragments of 3 different rims in related fabrics were found (the two drawn as Nos. 17 and 18, and a third small rim not illustrated).

19. Dish in black burnished ware. *cf.* Gillam 318. Antonine.

20. *Samian*. Fragment of Dr. 37, upper frieze. Mr. Brian Hartley dates this late 160-ish. This sherd came from immediately above the flagging.

21. Cooking pot in black burnished ware, *cf.* Gillam 122. Hadrianic/early Antonine.

22. Cooking pot in grey fabric, probably originally black burnished. *cf.* Gillam 127, 130-170.

23. Cooking pot in hard grey fabric. *cf.* Gillam 117. Residual.

24. Cooking pot in light whitish fabric, with very polished dark grey external surface. The burnishing has not entirely removed the trellis work, which can be seen under it going up into the neck of the pot. This seems to be a product from a different centre to that normally producing black burnished cooking pots, the appearance of which this is presumably imitating.

This layer also produced some 18 sherds of grey jars, some 7 sherds of pot 24, 42 sherds of black burnished ware, and the base of a jar in flagon type ware (pink with cream slip) and no foot ring.

*IB. 2?*

*Layer 5.* Working bench and associated brown clay.

This layer produced the base of a black burnished cooking pot, and two sherds of grey jars, all undatable.

*IB?*

*Layer 4.* Bronzeworking hearth. Very much disturbed by tree roots and rabbit burrows, and mingled with top soil. 4 sherds of the pot ridged internally found in layer 7f came from the area of the hearth, probably brought up by the robbing trench. There were also joins with the pottery of layer 2. In any case there was no datable pottery in the 5 other sherds found.

*Late IB? II.* Hearth outside turret, in angle of east wall and south face of Great Wall.

25. Cooking pot in black burnished ware, *cf.* M/C 9, No. 13, there in a Period II level. The possibility remains that this sherd could be late Antonine. In any case an external hearth need not prove occupation of the turret, but rather indicates the reverse.

26. Bowl in buff sandy fabric, *cf.* Gillam 291. Early Hadrianic. Residual.

*Layer 1.* Robbing trenches of turret walls.

27. (Rim sherd). Jar in red ware with a white slip decorated in red paint. A small patch of burning has turned exterior surface grey, and the paint purple, closely resembling the cordoned sherd below.

(Cordoned sherd). Portion of cordoned vessel in brick-red fabric with white slip internally. The exterior surface is now fired to a grey colour, and the paint, originally red, to a purple colour. *cf.* Excavations at Elmswell 1938 (Hull University 1940) P. Corder, there dated 70-110. A most unusual vessel.

28. Cooking pot in light grey fabric, *cf.* Gillam 116, 125-150.

29. Cooking pot in black burnished fabric, *cf.* Gillam 125. Hadrianic/Antonine.

Layer 1 also produced some dozen sherds grey jars and cooking pots, 7 sherds of black burnished ware, and 1 flagon sherd with cream slip.

*W.E. 1.* The robbing debris level over the Great Wall to east of the turret.

30. Cooking pot or jar in hard light grey ware. Gillam 115, early Hadrianic.

Also 2 sherds of a grey jar.

W. 1. The robbing debris level over the Great Wall to the west of turret.

31. Bowl in black burnished ware. Resembles Gillam 222, 170-210.

This layer also produced 14 sherds grey jars and cooking pots, and 5 black burnished sherds.

*Unstratified.* Topsoil and root and burrow disturbance.

32. Bead rim bowl in light grey sandy ware, *cf.* Gillam 318, Antonine.

33. Sherd of very fine hard reddish brown ware.

This level also produced 1 brick-red mortarium sherd, with cream slip and white grit, some 40 sherds grey jars and cooking pots, 31 sherds black burnished ware, and some 3 or 4 sherds of flagon ware. There was no pottery which could be dated to the 3rd or 4th century.

### *Small finds*

#### *IA. 1. Layer 9*

Handled iron tool much corroded. Traces of a handle, probably wooden, survive. Length  $7\frac{1}{2}$ ". Corrosion on blade preserves marks of apparently straw. A.

Part of a substantial iron nail, and also a 2" nail, not illustrated.

#### *IA. 1 and IA. 2*

##### *Layer 7 and 7f*

Bronze stud. B.

Portion of bronze sheathing for shield or sheath. D.

Bronze darning needle. E.

Hollow bronze knob weighted (with lead?) at the top. The central channel widens almost at once after the top aperture, and is  $\frac{1}{2}$ " wide at the bottom with a very thin bronze wall to it. Dr. Webster suggests it might be a sword pommel with a centre piercing for the tang, and a sleeve to fit the grip. He suggests as a parallel Wiesbaden (ORL No. 31, X, No. 5). F.

Bronze mount in fragmentary condition. G.

Five pieces of an apparently flanged, dished, circular iron object, diameter about 7", retaining traces of wood under the flange, and vegetable matter, apparently heather, on upper surface. Probably a shield boss, like that from 18b, lettered B. Not illustrated.

Iron nail, length 3". Not illustrated.

Iron nail, length  $4\frac{1}{2}$ ".

3" nail, originally with large squared head, and part of another nail.

Iron shoe studs, preserving shape of toe of shoe. H.

Base of glass bottle,  $3\frac{1}{2}$ " across. Fragment just includes turn for side. Clear light blue-green glass. C.

*IA. 3. Layer 8*

Coin under flagging above pink sand, marked on plan by \*. Illegible and corroded. ?2nd century, possibly a Greek provincial coin of Trajan or Hadrian.

Iron nail, length  $2\frac{1}{4}$ ".

Coal.

*IB. Layer 2*

Bronze tack, original length probably rather over  $\frac{1}{2}$ " and clipped roughly circular head, diameter  $\frac{1}{4}$ ". Not illustrated. Very crumpled.

Remains of bronze stud original diameter about 1". Very damaged. Not illustrated.

Iron nail, length  $2\frac{1}{2}$ ".

Whetstone in fine green grey micaceous sandstone, burnt or weathered in black spots on surface. I.

Piece of sandstone,  $5" \times 3\frac{1}{2}"$  more or less triangular. One surface very smooth and silky, apparently used for fine polishing.

2 oyster shells.

Coal.

*IB. 2? Layer 5*

Portion of substantial iron nail.

Charcoal.

*IB? Layer 4*

33 small pieces of bronze, some illustrated *J* apparently representing clippings from bronze working. This level also produced fragments of coal and a piece of a curved vessel of  $\frac{3}{8}$ " thick in a buff coarse ware with white grit, fired black and in places vitrified on the surface. Probably a fragment of a crucible.

Piece of bone tool, the pointed end broken, the wider end having had a little tang which had snapped off. K.

*IB. ?II. Hearth outside turret.*

3 oyster shells.

1 very large incomplete common mussel shell more than  $1\frac{1}{2}$ " across at widest point. Total surviving length 3" but must have been originally at least 5" long. Not apparently a horse mussel.

#### *Layer 1*

Roughly circular piece of sandstone, red and yellow,  $1\frac{1}{4}$ " thick, with hole cut more or less centrally. Probably a cover. L.

*W.E. 1.* Iron blade, length  $5\frac{1}{2}$ ". M.

*W. 1.* Two fragments of sheet bronze.

Three portions of bronze moulds in sandy dark grey clay fired white in part on the the bottom of the mould. See *O A Romano-British Bronze Worker's Hearth at Heronbridge, Chester, Chester Arch. Soc. J. Vol. 41.* The turret moulds resemble the class 2 moulds at Heronbridge, and it was there thought the product was used to decorate leather work. It was not at all easy to make out from these moulds just what was in fact being cast, but it was probably some decorative perforated flat piece of metal, of which the piece of bronze *Q* found unstratified was probably an example. The mould *O* shows the pour-hole.

#### *Unstratified*

Bone c.  $4\frac{1}{2}$ " long grooved around one end. R.

*Mortar.* Mortar samples were taken from the various robbing levels. The mortar was noticeably pale yellow with pieces of white lime about a  $\frac{1}{4}$ " across scattered in it, giving it an unusually speckly appearance. Only very small and infrequent fragments of admixed burnt clay were noticed. Layer 2 produced samples of a very white mortar packed with white quartz grit.

#### *Summary*

It was unfortunate that excavation of this turret was not postponed until after the timber being grown as a commercial crop had been felled, and the whole turret could have been examined, especially as its condition was not deteriorating, nor was there any threat to it. However the balks were left in, and should provide a means of keying the rest of the structure in to the features found by the present excavation if further work is undertaken. An obvious problem is why

the stratification remained more or less static and unworn throughout most of IA in the north-east corner, that area so curiously delineated by its little kerb, and packed so hard with stone. Did some semi-permanent, perhaps heavy, perhaps wooden structure stand here? Another vertical flagstone was found just south of the hearth, and the answer to the extent, and perhaps the purpose, of this feature must lie under the big oak tree.

A main activity in the turret seems to have been the preparation of food, and a large amount of food bones were found. There was again a general increase in untidiness as at Turret 18b, more bone and general rubbish being scattered about in Period IB, and an astonishing collection of beef bones being stuffed behind the work table in what appears to be a secondary phase of IB. There had been a lot of firing in the turret, and the IA. 3 hearth in particular produced a multicoloured mass of bright fired material. Sometime however, apparently during period IB, the use of the turret as a workshop, as seen in turret 18b, seems to have commenced, though the working was not connected with iron in this case. It is unlikely that actual melting of the bronze would have gone on inside the turret because the process involves the giving off of noxious fumes. The bronze half moulds found came from the robbing debris over the Wall to the west of the turret, and perhaps the actual hearth where the melting was done was in this area. It is probably unlikely that any smelting of ore was done in the neighbourhood of the turret. The clippings perhaps relate to finishing off processes which might well be carried on inside the turret, or they might be scrap collected for melting. There is very little evidence in Roman Britain for bronzeworking on military sites, although it has been noted elsewhere in the Wall area at Stanwix, apparently here associated with the *vicus*. By an odd coincidence bronzeworking is suspected at Elmswell, Yorks, apparently the source of pot no. 7, but there is a discrepancy in the apparent dating of this pot and the bronzeworking activity.

At this turret and at 51b it was difficult to distinguish between the end of IA and the beginning of IB, and if it were not for the historical evidence no suggestion of a break of occupation would have been made. This must imply at least efficient policing to prevent squatting and to ensure that the building was weathertight and doors and windows shut and in repair, as there was not the slightest trace of blown silt, leaves and vegetation etc. to mark off one period of occupation from another 20 years later.

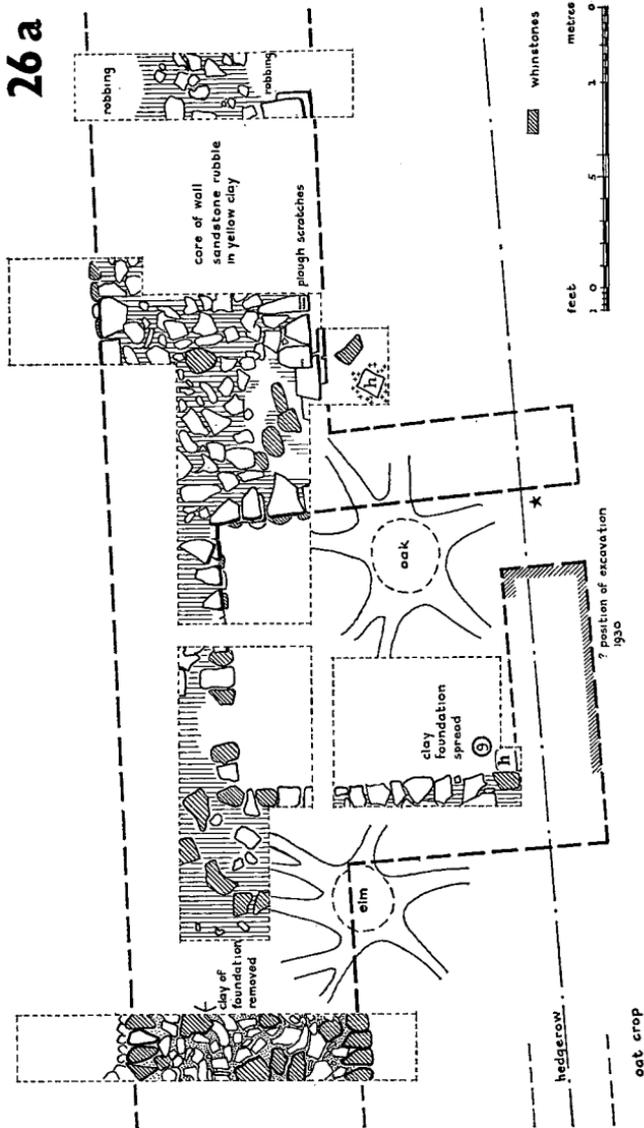
The picture of the garrison and its habits is the usual one. Mortaria are rare, only the one drawn vessel, and the unstratified sherd of another, being recovered. The diet was high in meat, but low in wine. 12 sherds representing the top and handles of one amphora were found in Period IB, but none in Period IA, and only two unstratified sherds. Only sherds apparently representing 2 flagons were found in Period IA. *Samian* was particularly sparse, there being one sherd in Period IA, and one sherd in Period IB. However a handsome piece of military equipment (lettered *F*) was found, and a darning needle, so the garrison may have taken pride in their personal appearance, even if their immediate surroundings were shabby, a barbarian phenomenon well known today.

It now appears that turret 19a, an apparently isolated example of a turret east of the North Tyne going out of action at the end of the second century, may represent the rule rather than the exception, as it has now been joined by turrets 18b, 25b, and 26a. (Here, too, no pottery definitely later than the second century was found, out of some 130 sherds of unstratified pottery.) In actual fact there is practically no published information on the length of occupation of any other turrets east of the North Tyne, except 7b, where Period II and III occupation is definitely attested. Other turrets have only been cursorily examined for the most part with a view to determining their types, and at a period when the interest was almost entirely confined to elucidating the initial problems of the building period, and not much attention was

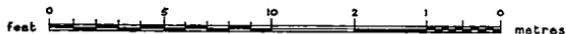
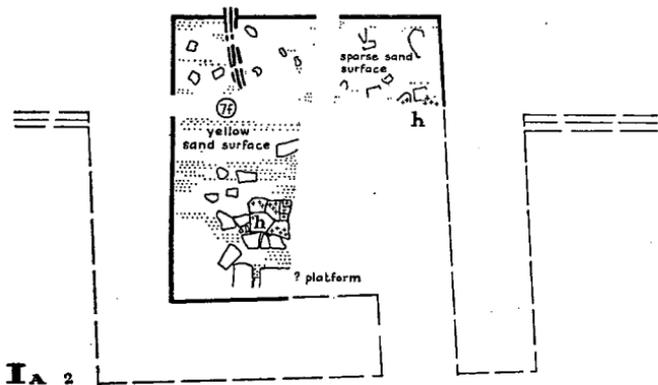
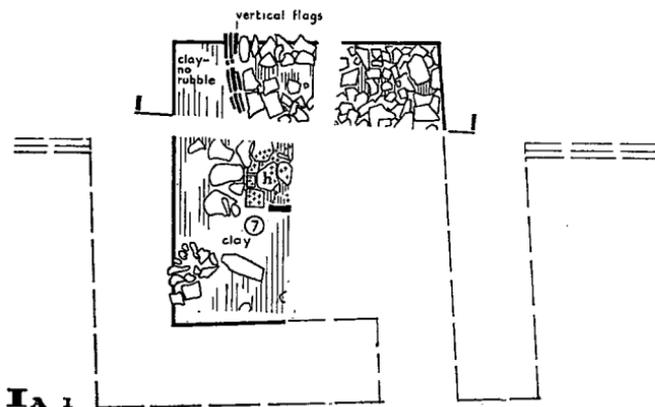
given to length of occupation. Pottery is rarely discussed or published, and before any further excavation on turrets is undertaken in this area, it would seem vital that any material still surviving from excavations on any of these structures should be published and worked on, if any comprehensive picture of the function of the Wall and its minor structures in this area is ever to emerge.

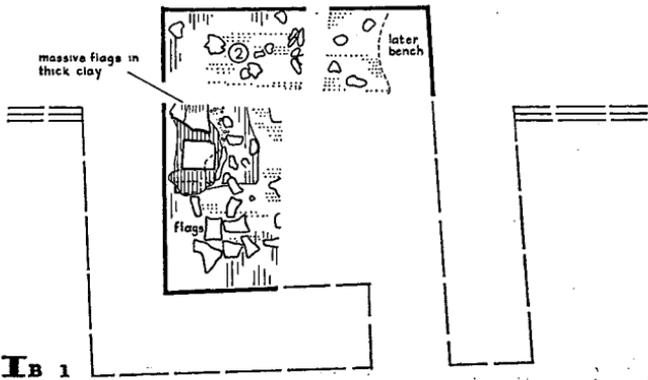
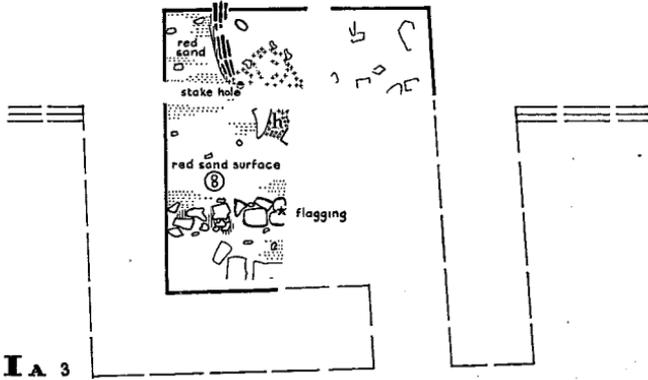
Acknowledgements are due to Mr. Davison for permission to excavate on his land, Mr. Charles Anderson for the provision of equipment, Mr. Raymond Hall who did most of the earlier heavy digging, and Mr. Thomas Hindley who took over from Mr. Hall when he became ill. Mr. Hindley also filled in single-handed. Mr. J. P. Gillam gave much valued assistance with the coarse pottery, Mr. Brian Hartley identified the Samian and was the source of the information on bronzeworking. Mr. A. Thompson looked at the coin, Mr. Stephen Bartle helped with the drawing on site and Mr. Paul Woodfield drew most of the pottery and small finds. Mrs. Askew gave a preliminary identification of the bones which later went to the Passmore Edwards Museum.

26a



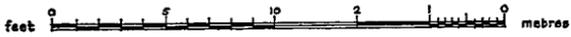
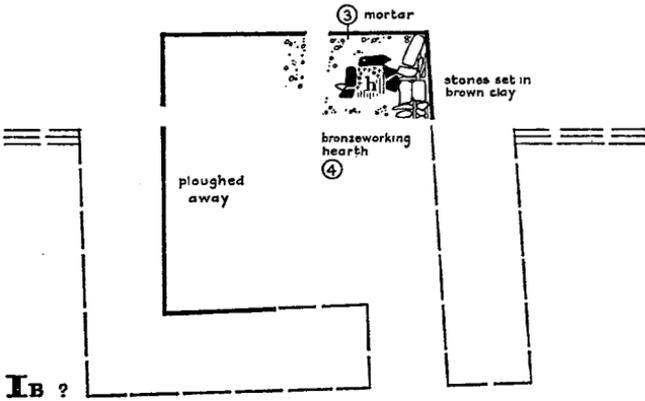
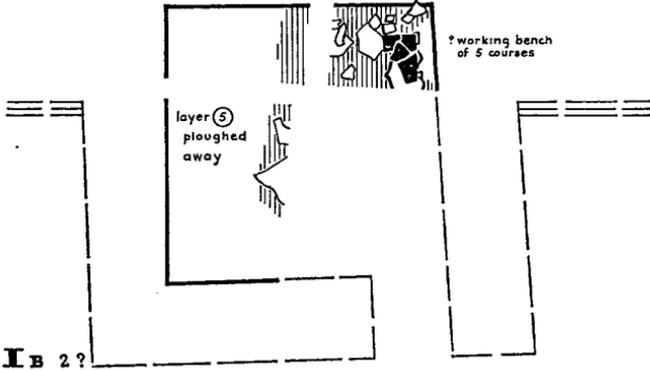
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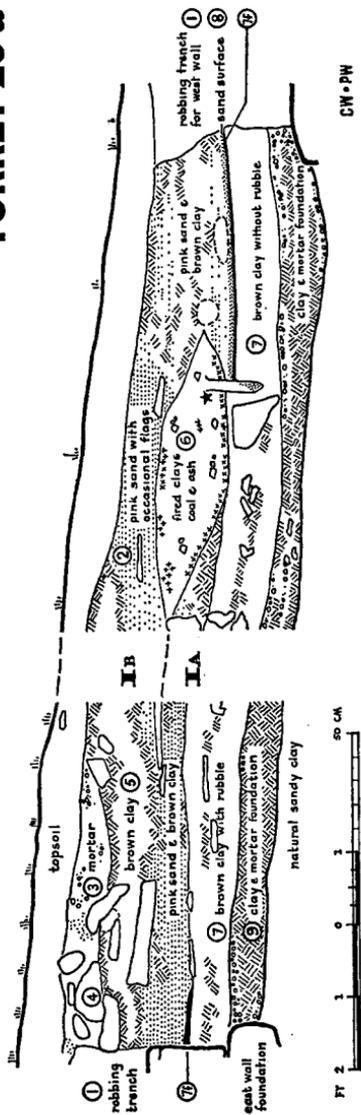


CW-PW

L



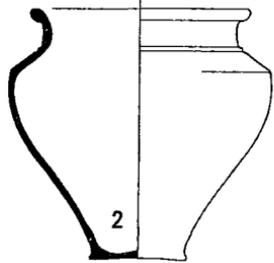
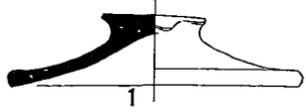
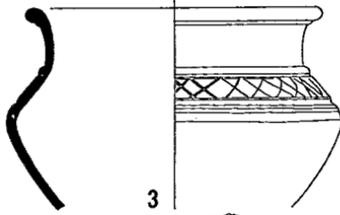
# TURRET 26 a



Ia.1

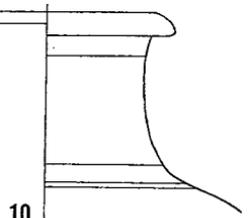
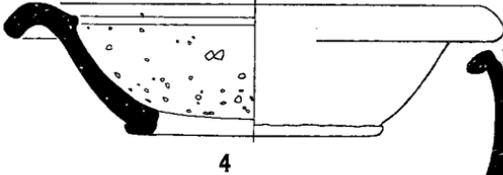
LAYER 9

26a

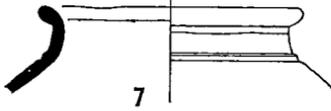
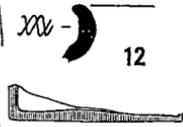
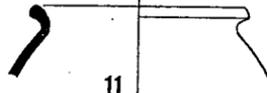
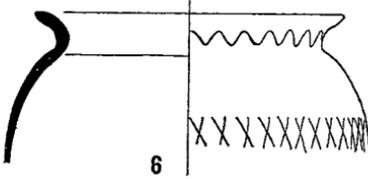


I&2

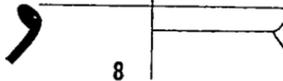
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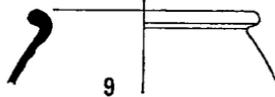
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C



D



F

G

H

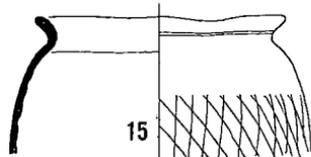
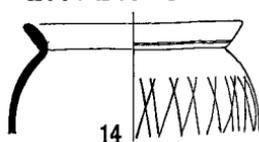


PH

1a.3

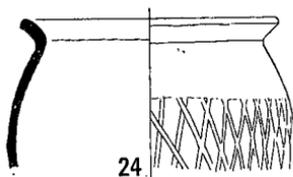
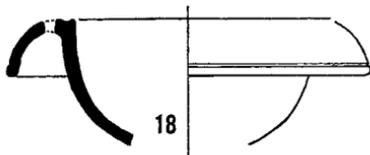
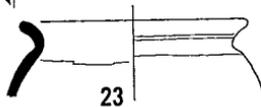
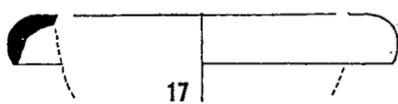
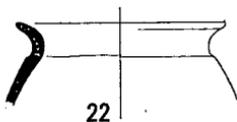
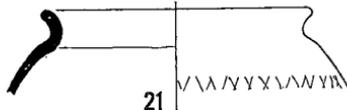
LAYER 8

26a



1b.1

LAYER 2



1b? LAYER 4

J



K



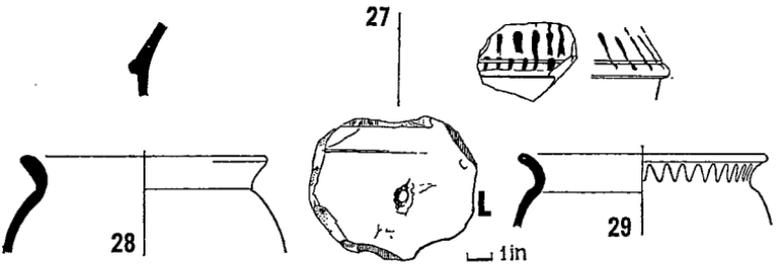
CW·PW

Ib?II

26 a

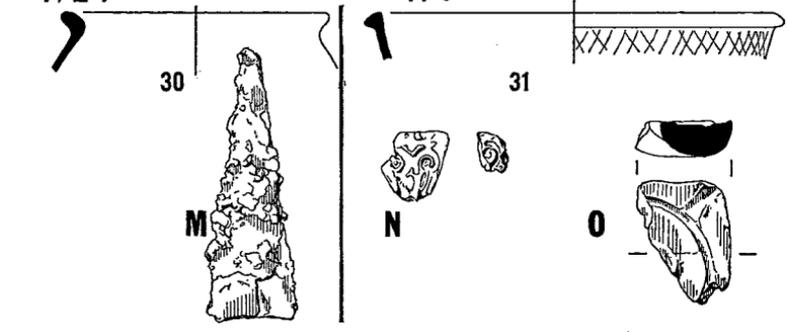


LAYER 1

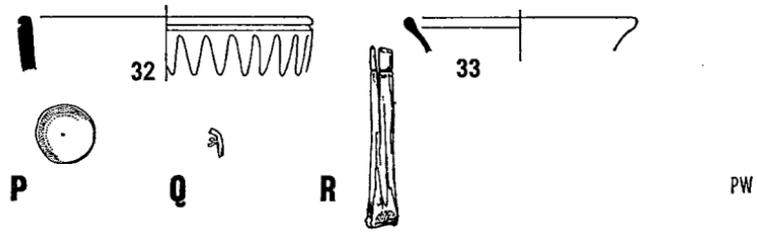


WE 1

W 1



UNSTRATIFIED



## TURRET 35a, SEWINGSIELDS

This turret was excavated for the Durham University Excavation Committee in July and August 1958 by Miss Janet Birch (now Mrs. Jacobson) in advance of consolidation work by the Ministry of Works. Emergency domestic difficulties prevented Miss Birch preparing a report from this material and in order to ensure its publication it has been included with Mrs. Woodfield's further work on turrets in the following year. The turret had previously been examined by Mr. C. E. Stevens in 1947 with a view to discovering its type. (J.R.S. XXXVIII, 84.) The narrow walls and the south-east doorway indicate the work of Leg. XX as at 33b, 34a, 35b and 36a.

*Construction of the turret.* The external dimensions of the turret are 19' 6" west to east, and 19' 2" north to south. The internal dimensions are 12' 6" west to east, and the measurement after blocking is 8' 0" north to south. These measurements include the offsets. The west, east and south walls of the turret are 3' 6" wide at offset level. There is an internal and external offset to these walls of 3", reducing their thickness to 3'. Their maximum survival is 2 courses above the offset in the south-east corner. The north wall of the turret (including later blocking) is 8' 1" thick at offset level, reducing to 6' 6", the offset averaging 9" to the north and 10" to the south. The external (presumably original) north face of the turret has a rough whin course as foundation under the offset, but the later blocking face inside the turret was unmortared and laid directly onto occupation earth. Outside the turret to the west only the offset course of the south face of the Great Wall survived, but at the east one additional course survived on this face, giving an offset of 6". A rough whin footing was also noted here, and it appears that the turret had a similar whin foundation. The core of the Great

Wall was lime mortar and rubble. It survived 5 courses above offset at its highest point north-west of the turret. The width of the Great Wall was 9' 9" including offsets. The doorway lay at the east of the turret, but apparently some 18" west of the corner. It did not survive in sufficiently good condition for its width to be certain, but the indications were that this was probably some 2' 10" originally. The presence of the little clay and stone box just inside the doorway rather indicates that the door opened outwards.

No evidence for a platform was noted by the excavator, but it is probably significant that the rough cobbling and clay described in the west half of the turret apparently gave out some 3' from the south wall. A rough unmortared platform in this area might not have been distinguished from the mass of rubble representing the ruin of the turret.

*Period IA.* A builders' spread of stone chippings seems to have covered some two thirds of the excavated portion of the turret to the north, and to have overlaid a dark peaty level which probably represents an old ground surface. This last level was completely excavated in the eastern part of the turret, where it was apparently sterile, but west of the balk it was only removed in the north-west corner, where it produced three sherds. A similar dark level was also noted in the external angle of the west wall of the turret and the Great Wall. It overlay an apparently natural level of decayed whinstone.

A flooring of clay and rough cobbles was noticed in the western part of the turret, apparently laid directly onto the stone chipping level. (No plan.) It gave out, as did the stone chipping level, some 3' north of the south wall of the turret. In the south-eastern part of the turret rough flagging and clay patches were recorded, presumably the same floor. These were, it appears, laid directly on the layer of mason's chippings. A hearth was found half-way along the east wall of the turret backing directly onto the wall, and some 18" to its south there was a little stone box some 1' by 1' 2" made of two flags set upright and bonded together with clay. (Simi-



Fig. 1. Detail of rough foundation of blocking wall laid on occupation material at turret 35a. Turret east wall at right.

*Phot: Charles Anderson*



Fig. 2. Turret 35a from south-east, showing entrance and recess built over

*Phot: Peter Wallace*



lar boxes were noted at turrets 7b and 51b.) It appears to have had a flag bottom, and it contained two black burnished sherds and some burnt wood. The rough flagging consisted in part of whin boulders, and in part of flags, and seemed to be levelled up with a packing of sand, gravel and small stones. These features occurred in a level of occupation earth, a rich, dark brown material containing occasional patches of burnt clay.

A path was also noted outside the door in the north-east external angle of the turret and the Great Wall and off the south face of the south turret wall. It was very rough, and consisted of a cobbling of small and medium sized stones.

J.B. and C.W.

### Pottery

#### Period IA.

*Layer 6.* Peaty earth, old ground level.

This level produced 1 jar base, 1 sherd of grey ware, and 1 black burnished sherd.

*Layer 5.* Stone chippings.

This layer produced 6 grey jar sherds, and 1 black burnished sherd.

*Layer 3.* Occupation inside turret.

1. Cooking pot in black burnished ware, *cf.* Gillam 119, Hadrianic+.

2. Cooking pot in ? black burnished ware with four holes drilled for riveting. *cf.* Gillam 120, Hadrianic+.

3. Bowl with grooved rim, *cf.* Gillam 234, 140-200. The possibility cannot be ruled out that this pot reached the site before the end of Hadrian's reign. It came from the top of level 3. Conversely it might have been dropped by the builders of the blocking wall. It is slender evidence on which to build a whole IB occupation.

4. Cup in pinky red ware, with a burnished grey surface. Camulodunum type 212c.

5. Pot lid in light grey ware, *cf.* Gillam 339, Hadrianic.

This level also produced 1 sherd of the cup, some 35 sherds grey

jars and cooking pots, some 30 sherds black burnished ware, and 1 red flagon sherd with white slip.

*Layer 1.* Occupation material outside turret. Not a sealed deposit.

6. Cooking pot in smooth grey ware, *cf.* Gillam 115, Hadrianic.

7. Cooking pot in grey fabric, *cf.* Gillam 117, Hadrianic.

8. Cooking pot in smooth dark grey fabric, *cf.* Gillam 115-117, Hadrianic.

9. Cooking pot in light grey fabric, *cf.* Gillam 116, Hadrianic.

10. Cooking pot in light grey fabric, *cf.* Gillam 116, Hadrianic.

11. Neck of narrow-mouthed jar in light grey fabric, *cf.* Gillam 28, Hadrianic.

12. Narrow-mouthed jar in grey fabric, probably Hadrianic, *cf.* Gillam 28.

13. Dish with flat rim, in light grey sandy fabric. Unusual.

14. Tankard in pinky buff ware with bead rim, *cf.* Gillam 182, Hadrianic +.

15. Tankard in brick-red fabric with bead rim, *cf.* Gillam 180, Hadrianic.

16. Neck of flagon in light grey ware.

This layer also produced some 30 sherds grey jars and cooking pots, 8 sherds black burnished ware, 1 sherd? indented beaker or rough cast beaker in red ware, some half dozen tankard sherds in red ware, 2 ? flagon sherds, 1 white and 1 red with cream slip.

*Period II.* Blocking.

*Layer 2.* Ruin of blocking wall.

17. Bowl in cooking pot fabric, black burnished. *cf.* Gillam 222, 170-210.

18. Rim of large bowl of uncertain form. Ware probably Hadrianic.

This level also contained 38 sherds grey and black burnished jars and cooking pots, and 1 piece red flagon sherd with cream slip.

*Unstratified.* Topsoil.

19. Cooking pot in light grey ware, *cf.* Gillam 115, Hadrianic.

20. Cooking pot in grey fabric, *cf.* Gillam 116, Hadrianic.

21. Bowl in cooking pot black burnished fabric, *cf.* Gillam 222, 170-210.

22. Mortarium in creamy white fabric containing much fine light greyish brown grit. The grit is noticeably as thick in the fabric as it is on the surface of the vessel. Colchester type 498, late 2nd and 3rd century.

Not illustrated. Portion of amphora, apparently cut below neck and the cut tidied into a neat rounded rim. A hole had been drilled

through just over half an inch below the neck of some  $\frac{1}{4}$ " diameter, and the rim was marked above this with a cord cut.

Unstratified pottery included some 65 sherds grey and black burnished wares, 1 red flagon with white slip, 1 fragment of a mortarium rim, red with small white grit, 2 sherds red flagon ware.

*Small finds*

*IA.*

*Layer 5.* Stone chippings.

Iron strip, 4" long, some  $\frac{1}{2}$ " wide and  $\frac{3}{16}$ " thick. Not illustrated.

*Layer 3.* Occupation inside turret.

Part of bronze cup. Dr. R. F. Tylecote, Department of Metallurgy, University of Newcastle upon Tyne, kindly reported on this cup, which had an unusual greyish finish, as follows: "This is a piece of cast tin-bronze containing a little lead. It has a cored structure and shows the  $\alpha + \delta$  eutectoid, proving that it contains more than about 7% tin. Marked intergranular corrosion is present and there is some precipitation of copper globules which is a fairly common feature of the corrosion of bronze in aqueous conditions. The X-ray fluorescence analysis showed zinc is virtually absent." *A.*

Bronze wheel-shaped brooch decorated alternately with red and green enamel. The central stud is much damaged, and probably held enamel originally. The pin and spring are missing. *D.*

Iron knife blade, and tang. *E.*

Iron implement, possibly a bolster. *F.*

Iron blade, perhaps a piece of door furniture. Found with it was a piece of 3" iron strip, curved, and of triangular section, the sides of the triangle being  $\frac{1}{2}$ " each. Both preserve traces of wood. Strip not illustrated. *G.*

Small nail, wood adhering, length  $1\frac{1}{4}$ " (incomplete). Part of substantial nail length  $3\frac{1}{4}$ ".

Piece of glass, probably part of base of bottle. Light green. *C.*

1 piece of thick ( $\frac{3}{8}$ ") bright blue-green glass probably part of a base with 45° angle wall. Much distorted by fire. Not illustrated.

1 piece of light green glass  $\frac{1}{4}$ " thick much crackled and distorted by fire. Not illustrated.

Circular pebble, presumably from a river bed or sea shore, of the kind usually described as a sling stone. *B.*

*Unstratified*

Coin, present whereabouts unknown. It was apparently identi-

fied on site by Dr. J. Kent, as a dupondius of Trajan, c. 114, appreciably circulated. He suggested a date of about 140 for its loss. It was found in the turf overlying the turret wall.

- |  |           |
|--|-----------|
| Bronze binding for scabbard or shield.   | <i>I.</i> |
| Base of glass bottle with upright angle. | <i>H.</i> |
| Bronze scabbard chape.                   | <i>J.</i> |

### *Summary*

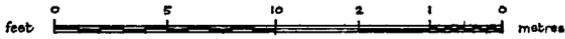
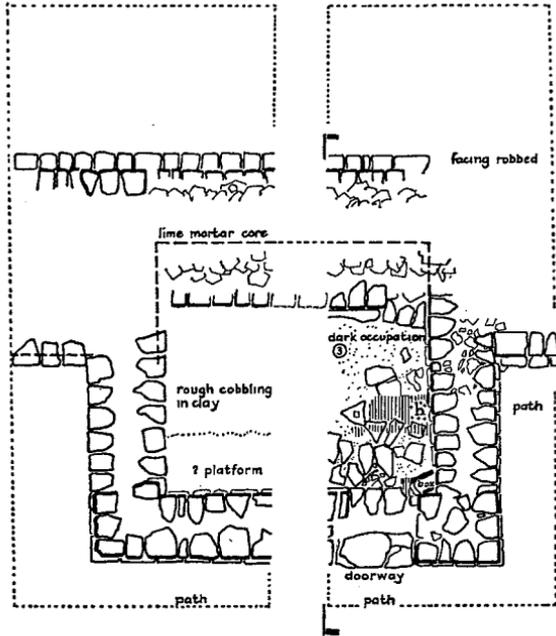
The general picture of the garrison and of the occupation is a less pronounced one than in that of the other turrets considered. There was not a great deal of pottery, and only a small number of food bones; in fact, the indications are of a much thinner occupation and of less preparation of food and other activities (a state of affairs more in line with the conventional view of turrets as more or less sentry boxes than that obtaining at turrets 18b, 25b, 26a and 51b). There was the usual scarcity of mortaria, 2 vessels only being represented. However there was an unusual number of amphora sherds, some 60 from the occupation level inside the turret, and some 30 from elsewhere. A small proportion of these must represent secondary use, probably as night vessels, and the exposed situation of the turret would doubtless account for the increased number of amphorae both in their primary and secondary capacities. (Amphorae in secondary use were also found in turrets 25b and 51b, and elsewhere.) At Sewingshields the garrison apparently were not only unable to purchase any Samian at all, but they were also driven to riveting cooking pots. However a handsome brooch and chape indicate that they had resources for personal adornment and equipment, and an unusual find was the remains of an elegant bronze cup or bowl.

Very little is known about the history of turrets on the crags (which is here taken to mean turrets 33b to 45b inclusive). Mr. Stevens showed that turret 35b and the present turret had gone out of use in Roman times. Mr. F. G. Simpson found that turrets 39a and 39b had gone out

of use in the Roman period, but a full report, and the pottery, have never been published. The pottery from Mucklebank was never published nor, apparently, does it survive, though the stratification reported there indicates some considerable period of occupation. The question of length of occupation in general with turrets on the crags is very much brought to the forefront by this excavation as the finds from turret 35a are not inconsistent with the turret going out of use in the middle years of the second century, though it would appear that the blocking wall was probably not built over the structure till Severan times, in view of the occurrence on the site of unstratified late second and early third century pottery. The section shows that the north and south walls of the turret stand high enough to have preserved later floor levels (it is unlikely that the Severan working party would have reduced the level inside the turret lower than that of the south wall when levelling the site) and there is no evidence that any trace of a reflooring was found. This in itself would seem to preclude a IB reoccupation. When further work is carried out on the crags this possibility should be borne in mind, and the lack of a IB floor should not be too lightly written off as erosion.

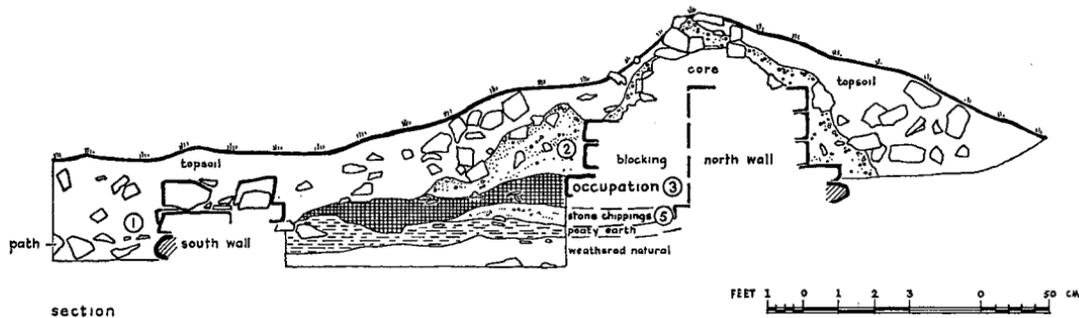
C.W.

35 a



JB·PW

# TURRET 35 a

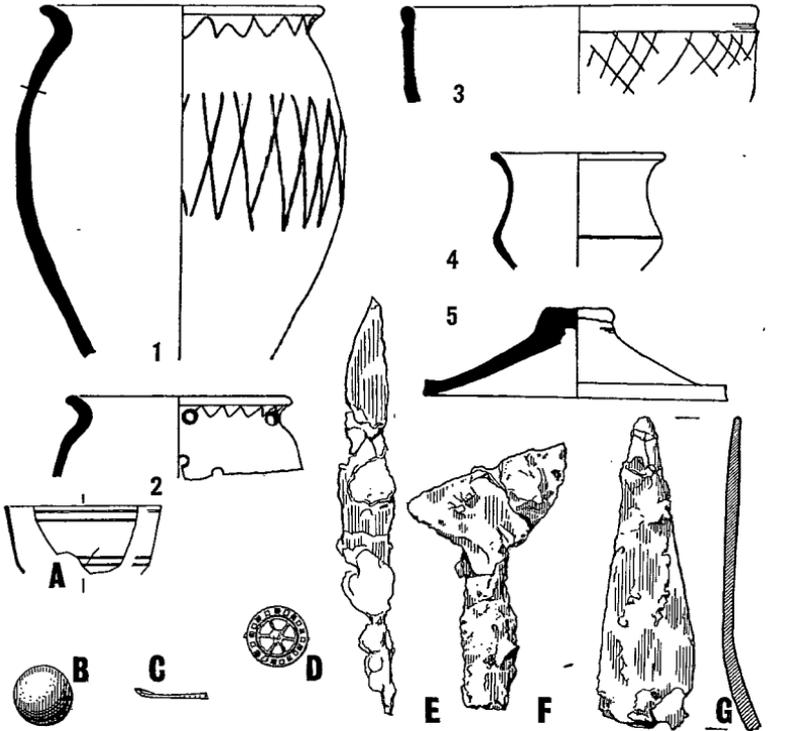


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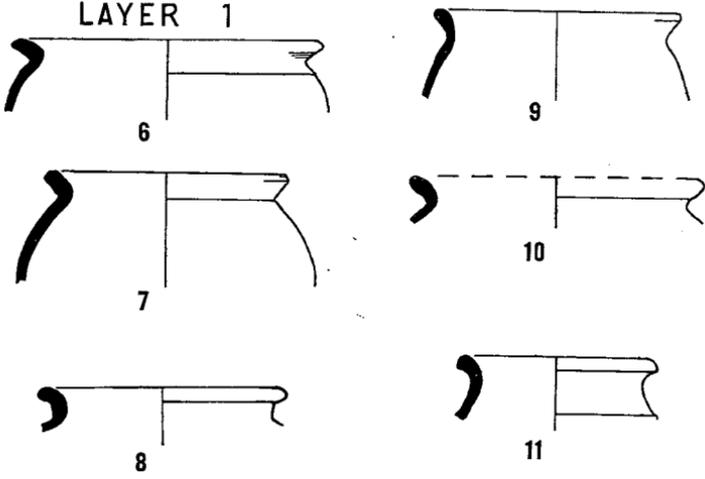
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LAYER 3

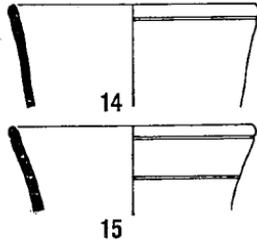
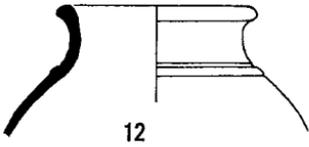
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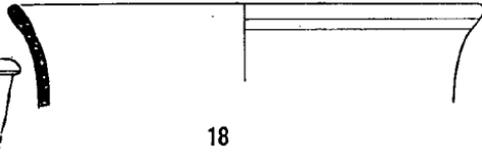
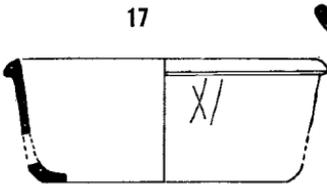
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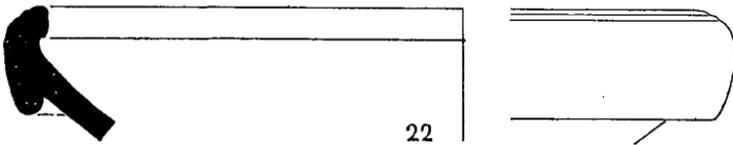
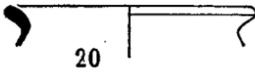
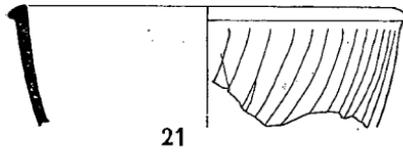
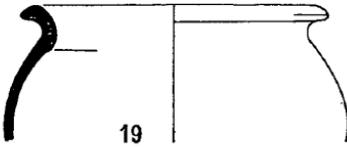
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LAYER 2



UNSTRATIFIED



J



M

## TURRET 45a, WALLTOWN CRAGS

This turret was located in 1883 by John Clayton and partly exposed for the occasion of the second Pilgrimage in 1886. In 1912 it was cleared and planned by Mr. P. Newbold. It was re-examined in the autumn of 1959 before consolidation by the Ministry of Works.

*Construction of the turret.* The external dimensions of the turret are 19' 2" west to east along the north face, and 18' 7" west to east along the south face. The west face of the turret measured 18' 3" externally, and the east face 18'. The internal dimensions were 13' 6" (north face), 13' 1" (south face), 12' 8" (west face) and 12' 5" (east face). These measurements do not include the offset foundation which was very irregular both as to the amount it projected, if at all, from the main mortared face of the walls, and to its depth. The width of the walls was slightly variable, even disregarding the vagaries of the foundation. The south and west walls were 34" wide, the north wall a little less, averaging 33", and the east wall was 34" wide at its north end, and 32" at its south end, with a noticeable taper. There was no projecting foundation at the north external face of the turret, the first dressed course being laid directly on the natural rock. At the west external face of the turret the foundation projected some 2½" at the junction with the Great Wall, at which point it had three courses and was some 2' deep. It widened out as it ran to the south-west corner to 9", reaching a depth of 3' (four and five courses). It varied in width on the south face from some 3" to 7", rising slightly to a depth of 32", and with the number of courses dropping from five to four. The foundation reached a maximum depth of 3' 8" just west of the drain, and its masonry was noticeably larger on this south face at the south-west corner than elsewhere, the face of the stones averaging 1' × 1' 9". The foundation was at its



Fig. 1. *Turret 45a*. Interior of turret, showing natural slope of rock to south. The ranging pole rests on the third course above the projecting foundation



Fig. 2. *Turret 45a*. Junction of turret and narrow wall at north-west corner showing butt joint and differences in character of masonry



widest externally on the east face with a maximum offset of 16", and it rose again to a 2' depth at the junction with the Great Wall at the east. On the internal north face of the turret at the extreme north-east angle the walls rested on the rock over a mortar spread without foundation, but this commenced some 9" from the corner with a projection of 6" and a depth of one course. This dropped to two courses in the centre of the north wall moving westwards, and three to four courses towards the north-west corner. The rock rose again in this corner and there was a very small projecting foundation along the internal face of the west wall. This dropped from one course at the north to five courses in the south-west corner, the southern five feet of this foundation being laid in clay. There was very little projection again on the internal face of the south wall, and what there was occurred at the level of the bottom course of the foundation laid directly on the natural rock. This course was laid in clay for its full length along the south wall (the foundation being, of course, normally mortared). Along the east wall the foundation projected an average of 6" and gave out some 18" from the corner, having risen from three courses. A mass of clay and rubble some 2' deep occurred outside the south face of the turret. It was built in with the foundation and appeared to relate to a natural drainage channel in the rock inside the turret at this point and presumably enabled the interior, and the tips of make-up material under the turret floor to drain away to the outside. (As the turret was to be filled up again to the presumed original early floor level the drainage arrangements were left undisturbed.) The foundation was composed very largely of whin boulders.

The turret survived to a maximum height of eight courses on the north-west external corner, and the north part of the turret was reasonably well preserved in general. In the southern part the turret barely survived to a height of more than two courses. There were indications of a doorway in the south-east corner where three flags (two of split whin) of an average depth of 2½" to 3" appeared to indicate a paved

entrance. The usual depth of the turret facing stones was about 8", and these dressed stones were noticeably smaller than those used in the Great Wall. The masonry of the turret walls, however, was rather irregular and the use of whin stones to such an extent (about 50%) in a dressed stone wall seems unusual. The core to the turret walls was mortar.

The narrow wall butted onto the turret at the north-west and north-east corners to make a continuous north face. Very little of it was visible at the time of the excavation because it had already been remortared and was covered with bracken and netting to protect it from the frosts. It had a foundation of flags laid in clay which projected some 10" to 1' from the south face of the Great Wall only. There was then a small offset course which projected some 3" to 5" and the main south face of the Wall rose above this without further offset to a maximum surviving height of four courses. The north face of the Great Wall was laid directly on natural rock without foundation, except for one projecting flag by the north-west corner of the turret, and rose without offset to a maximum surviving height of five courses at the west. The width of the Great Wall above offset level was 7' 4".

It appeared that the whole area had been stripped down to the rock, and the foundation built following the irregularities of the rock surface (as indeed had been done with the Great Wall in this sector). The turret foundation was laid on clay at the deepest and steepest part (south wall and south-west corner) presumably to give greater stability, and the interior made up with tips of red clay, mortar, ashy and burnt material. This had been to some extent cleared at the north of the turret by earlier excavation, but survived, at varying depths to 2', over the southern part of the structure. It was unfortunately sterile. There had been a builder's fire on the natural rock just inside the north wall, and a spread of stone rubble and mortar survived, apparently in its original position, in the north-west corner of the turret. All other original levels had been removed by earlier excavations. The turret was surrounded externally by natural peaty earth

and stone, disturbed in its upper levels. It was sterile in the lower levels round the foundation and the external faces of the turret walls were probably trench built.

### Pottery

#### IA.

*Layer 1.* Clay packing round external foundation to south wall.

1. Rim of cooking pot in light grey ware, *cf.* Gillam 117, Hadrianic.

This level also contained 2 sherds of a grey jar.

#### *Unstratified*

Disturbed material and topsoil inside and outside turret.

2. Black burnished cooking pot refired grey, *cf.* Gillam 127, Hadrianic/Antonine.

3. Cooking pot in light grey burnished fabric, *cf.* Gillam 134, 160-230.

4. Cooking pot or jar in light grey fabric, *cf.* Gillam 115, Hadrianic.

5. Cooking pot in black burnished fabric, fired pinkish brown, *cf.* Gillam 122, Hadrianic/Antonine.

6. Cooking pot or jar in light grey fabric.

7. Flat rimmed dish in black burnished fabric, *cf.* Gillam 308, Hadrianic/Antonine.

8. Dish in light grey ware with bead rim, rather worn, *cf.* Gillam 316, Hadrianic/Antonine.

9. Dish in greyish ware, very worn. Late Antonine.

10. Handle to handled beaker in black burnished fabric. Hadrianic/Antonine.

11. Base of 18/31 with stamp of Saxamus and graffito beneath the base. Mr. R. P. Wright says, "The stamp is SAX[AM]I·M. The graffito reads: MOELAS. The letter S is sometimes cut with three strokes, though here it has only two."

Not illustrated. Rim sherd of Dr. form 27? probably Hadrianic. Also 1 Samian chip.

Unstratified material also included 1 sherd of Derbyshire ware, some 60 sherds grey jars and cooking pots, some 15 sherds black burnished ware, some 41 flagon sherds probably not representing more than 3 or 4 flagons, and 1 mortarium sherd, brick red fabric with white grit.

*Small finds*

Socketed iron gouge, *cf.* Curle, *Newstead*, pl. LIX, No. 13. *A.*

Iron strip of some  $6\frac{1}{2}$ " in length, thickness of  $\frac{1}{8}$ ", and width of  $\frac{1}{2}$ ". Perhaps a tie.

Fragments of 2 iron nails, 1 fairly substantial (length  $3\frac{1}{4}$ ").

*Mortar.* Samples were taken from the turret wall of a rather yellow sand and lime mortar containing a fair proportion of pink fired clay. (N.B. There was no fired clay in the mortar of the Great Wall here.)

*Summary*

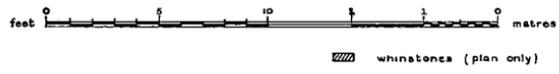
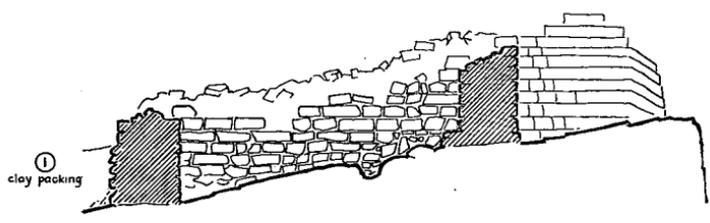
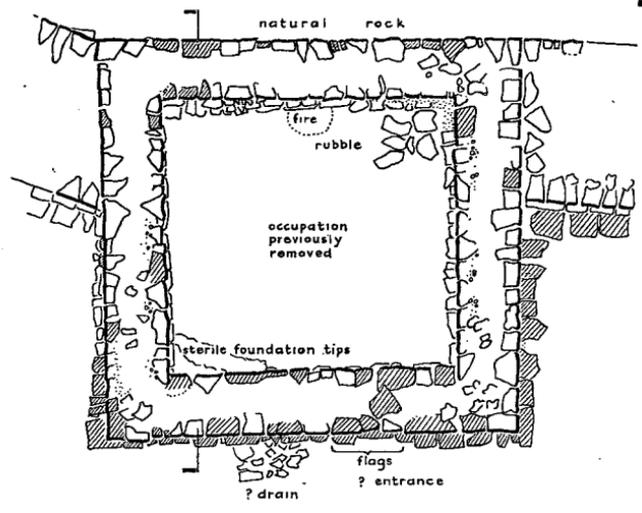
This excavation showed that the structure was in fact Hadrianic, and not Trajanic, as has been suggested. Some 150 sherds were found, a Hadrianic cooking pot in the foundation clay from the outside edge of the south wall, and unstratified sherds suggesting an occupation coming to an end late in the second century.

The turret is just in view of the small fort at Haltwhistle Burn some  $2\frac{1}{2}$  miles to the east, and if this fortlet and the turret are both connected with the early stages of the building of Hadrian's Wall, as seems most probable, turret 45a would provide it with a much needed outlook to the north-west, west and south. (The fort at Throp, a similar distance to the west, is not in sight.) However it appears that the turret in its original form would also just be in view of the fort at Carvoran,  $\frac{3}{4}$  mile to the south-west. This would be a very similar situation to that of the relationship of the earlier signal station at Barcombe (now known to be apparently not in occupation at the same time as turret 45a and not therefore part of the same system) to the fort at Chesterholm, and if the purpose of the fort at Carvoran was to guard the junction of the Maiden Way and the Stanegate, it may be noted that the dominant physical relationship of Barcombe signal station to the Stanegate is paralleled by the dominant

relationship of turret 45a to the Maiden Way, to the north as far as Gillalees Beacon some 7 miles away, and to the south up the valley of the South Tyne for some 10 miles nearly to Whitley Castle (not of course directly in view). The view of the west includes the tower at Pike Hill some 6 miles away, and the great expanse of the Solway estuary in fine weather, but it would be interesting to know on how many days of the year even Pike Hill was actually in sight. (It may be unwise to postulate signalling systems in regular watchguard use over distances of much more than 3 miles). This tower parallels turret 45a in some ways, being also built as a free standing tower, but it is supplementary to the normal system, lying between turrets 51b and 52a. Turret 45a, however, was adapted into the main turret and milecastle system, although some manoeuvring of the normal spacing was necessary, as indeed elsewhere on the crags. It is 347 yards west of milecastle 45 and 578 yards from the site of turret 45b. This position, of course, puts it at a fine view-point, whereas the normal measured position would put it in a hollow. It may be in any case that it was built before the milecastle and turret positions were fully worked out. It appears, then, to have been built as an early look-out for this always active military area (there are some 13 temporary camps within a radius of 3 miles, and the Tipalt gap carries 2 mediaeval castles emphasising the continued military importance of this spot), but with the turret and milecastle system in mind generally if not in detail. Its obvious associations would seem to be with Carvoran and Haltwhistle Burn, in the very early days of the planning and building of the Wall.

Thanks are due to the Inspectorate of Ancient Monuments, Ministry of Works for organisational help, particularly to Mr. Croser. Mr. J. P. Gillam, Mr. C. M. Daniels and Mr. D. Greenhorne kindly helped clear the site and photograph. Mr. J. P. Gillam looked at the coarse pottery, Mr Brian Hartley at the Samian, and Mr. R. P. Wright at the graffito.

45 a

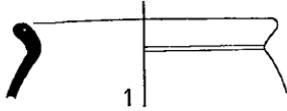


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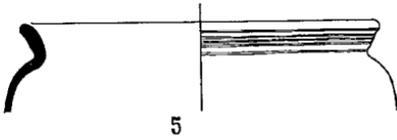
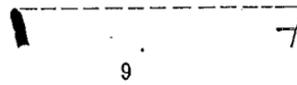
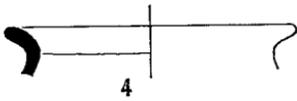
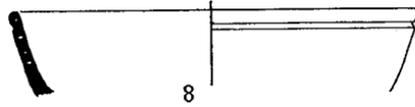
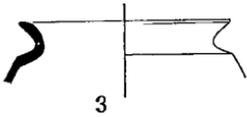
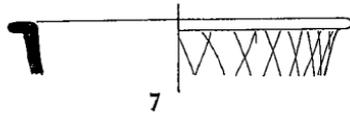
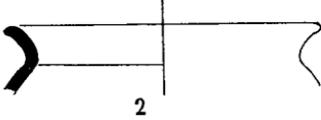
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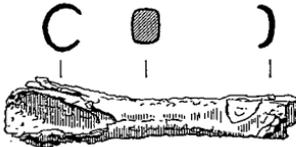
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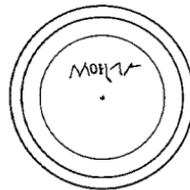
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10



A



11

CW•PW

## TURRET 51b, LEA HILL

This turret was discovered and examined externally in 1927, and its south face and doorway at the east have been visible, since road widening, in the north verge of the public road.<sup>1</sup> In 1958 the interior was excavated in advance of consolidation work by the Ministry of Works. The turret was visited by the Eighth Pilgrimage on September 7, 1959.

*Construction of the turret.* The external dimensions of the turret are 19' 9" from north to south and 19' 7" from east to west. The internal measurements are 13' 8" from north to south, and 14' 6" from east to west. The north and south walls are therefore 3' and 3' 1" wide respectively, and the west and east 2' 7" and 2' 6" respectively. There were no internal or external offsets, except for a very small external offset, probably accidental, along the south face of the turret, which was about 2" wide at the west, disappearing entirely before it reached the south-east corner of the turret. The turret walls were laid, as far as could be seen internally, in a small construction trench on a foundation of small pebbles and stones set in red clay. Externally the turret was surrounded by the excavator's trench of some 30 years previously. In view of this no attempt was made to try and elucidate the replacement of the Turf Wall by the Stone Wall. All that was in fact left of the Turf Wall was a slight scatter of turfy material to east and west of the turret, which was overlaid by several inches of later occupation material. Apparently the Turf Wall had been removed right down to original ground level. The Stone Wall was robbed right down to its foundation (big irregular flags set in red clay) to the east of the turret, but some two or three courses survived in position to the west. It was 8' wide. The turret itself survived to a maximum height of nine courses along

<sup>1</sup> CW<sup>2</sup> xxviii, p. 382.



Turret 51b from west. The vertical flags and upper level of platform are visible in the north-west corner

*Phot: Brian Blake*



the south wall. The north and south walls had a solid mortar core, but the west and east walls had a core of small pitched stones set in clay. In effect the core rather resembled a sandwich of clay between layers of mortar, because the mortar from the facing stones had spread over the clay core at the setting of each course. The small area of Stone Wall exposed to the west of the turret appeared similarly to have a clay core, and the robber trench for the Great Wall east of the turret contained a good deal of clay. A kerb of stones, not set into the Wall but backing on to it, lay along the north face of the turret. It should be recorded that there is widespread local memory of the finding of a skeleton lying along this external north face of the turret by the earlier excavators. The turret produced window glass, but no evidence for roofing. The finding of an apparent merlin coping stone suggests that the roof was flat or perhaps had a shallow pitch. There was no evidence whatsoever for tile or stone roofing materials otherwise, so a normal pitch roof seems to be out of the question. However the possibility of turf, or reed or heather thatch should not be overlooked. Some dozen nails, mostly  $2\frac{1}{2}$ " to  $3\frac{1}{2}$ " in length (but especially one of  $6\frac{1}{2}$ " in the final ruin) were found, and these probably indicate something more substantial than ordinary joinery work. The platform in this turret was set more or less centrally against the north wall. This position does not appear to be paralleled elsewhere exactly, though at turret 52a, Banks East, there was a platform against the north wall but it was continuous up to the west wall and not free standing on three sides. The platform measured about 6' north to south and 8' east to west during period IA, and 4' north to south and 6' east to west during period IB. It was irregular in shape and was wider at the west at both periods. At no time does it appear to have been more than 6" higher than the surrounding floor level. Its function is far from clear. The turret projected about 1' 10" north of the Stone Wall.

*Period IA. 1.* The make-up for the first clay floor of the turret was very varied. In some places the clay was laid

directly on the old turf line. In the western half of the turret a certain amount of rough flagging was laid, and in the eastern half the levelling off was done largely through tips of mortar. The mass of rough flagging just south-east of the platform is of one build with it. It is similar to the flagging under the clay elsewhere in the turret, and was presumably relaid at this higher level when the platform was built. The clay floor was particularly well preserved and unworn in the north-east corner of the turret, where it overlay a thick, black, sterile vegetable material, which also underlay the platform, and was exposed as a sort of gully when the cut was made in the clay to insert the platform. This clay was only in use as a floor long enough for 1" to 2" of occupation earth to form on it, and it was then covered by a stone and grey turfy packing (not shown on plan for clarity), this turfy material being the same as that on which the platform flags were laid. As well as the hearth shown on the plan against the west wall of the turret, there was an earlier hearth directly on the yellow clay floor under the stone hearth, separated from it by  $\frac{1}{2}$ " of occupation material. The stone hearth had a baked clay floor. The yellow clay floor continued in the doorway 6"-9" above its general level as a step. It was bordered by a very well defined strip of mortar 3" wide on both sides of the door, and it is possible that some sort of thin slabs of stone or timber might have lined the doorway at this stage only.

*IA. 2.* Subsequently an intermediate clay floor (shown on section but not on plan) was laid. This only survived very intermittently, but had clearly represented a reflooring and not patching only.

*IA. 3.* A central area in the turret was cobbled shortly after, a dump of large stones and clay put inside the doorway and then a fairly substantial clay floor, bright pink/orange in colour, was laid almost immediately. The plan shows the central hearth area as it related to the early cobbles, which were exposed long enough to acquire traces of burning but not occupation material, but after the pink clay floor was

put down, this hearth area, blackened and purple, with small cracked flags, spread westward to about 1' west of the post hole. The purpose of this post hole is not clear. It does not seem to date from a later period as its site was partly covered by a flagstone in IB. (The depth of the hole was 9", and its filling was loose dark soil with charcoal flecks. Its lower part was packed with stone. The diameter was 4½", and it was circular. It marks the edge of the hearth area.) It has been suggested that this reflooring represents in fact the beginning of IB, but the definite change of character (from clay to flagging) and the rebuilding of the platform occur at the next stage.

*Period IB.* Shortly after the laying of the pink clay floor the whole turret was roughly flagged and a new platform was laid at a higher level. It was packed round with stone and a sandy/turfy material, which produced a coin of Antoninus Pius east of the new platform, the find spot being marked by a star on the plan. The stones used for the flagged floor were irregular in shape, rather widely spaced, and the effect was of a rather sparse crazy paving. There was an appearance of two levels of flagging, but this seemed to be the result of frequent patching rather than one definite relaying. At its final stages the platform was hardly higher than the general floor level, though there was a slight continuous slope up to it. In any case at the end of period IB there was such a pile of sherds and bone and other rubbish on the platform against the north wall that its original function must have ceased. The flagging lay in a very dark brown/black fine sandy earth for the most part, but occasionally in streaked sand which looked like turf. The blackness gave a first impression of a destruction level, but examination showed that most of the intense black was caused by the presence of many fragments of unburnt coal. The rich loamy effect of this occupation earth is also due to the presence of the rotted straw which had been used as a floor covering. This is shown by the straw marks on metal objects lost in it, and explains how it was possible to use floors even when they

were so roughly made. The flagging was missing inside the doorway, but the mortar and rubble from the fourth century alteration carried well down into the IB occupation level, and presumably the flags from here had been robbed to make the later hut. The central area of the turret continued in use as a hearth during the first part of period IB, but a stone hearth was later constructed of three squared wedge-shaped stones in the western part of the turret, on the site of immediately previous open fires. This hearth could be covered right over to make an oven, and in fact the broken heavily fired red sandstone cover was found in position. The oven had two burnt and cracked flags, one set above the other, as a floor. Its operative depth was some 9". Originally it had just been laid on the ash and occupation earth and packed round with stones, but after it had seen some use it was repacked with some 2" of clay to the north, south and west of it. Here, at the back of the oven, the clay covered some 9" of ash. The vertical flags to the north of the oven were very similar to each other in size. They were all roughly square, the two easternmost ones being exactly 18" square. The third one measured 18"  $\times$  20½". Their bottom 3" to 4" were packed in stone and turf to keep them upright, the strips of this packing being 18" wide and running very clearly on both sides of this little wall, or kerb, which projected just over one foot above the floor level. South of the oven another feature was a little stone box. This measured some 12"  $\times$  8"  $\times$  6". This also had a cover, a small rectangular sandstone slab which completely concealed the box when in position. Here, too, the stones were laid without mortar or clay in the occupation earth, but the box itself was lined with unfired pink clay.

*Period II and III.* The turret does not appear to have been reoccupied at any time during the third century, or much of the fourth. There seems to have been a steady build up of rubble mixed with faint streaks of dark material over the southern and central parts of the turret. Heavy rubble did not accumulate in the north-western and north-

eastern corners of the building. It would presumably be thought necessary to keep the northern half of the turret in reasonable repair. The rubble is not clean enough to suggest demolition, but rather the gradual accretion of falling masonry. Some large flag stones in this level rather suggest that some of the upper floor had come down.

*Period III.* The turret was reoccupied for a short while in this period. Initially a certain amount of digging in the ruins seems to have taken place, possibly in a search for suitable stone for repairs and floors. The turret doorway was blocked with rubble and mortar lumps, in roughly horizontal courses, raising the threshold to the top of the now-existing surviving height of the walls. Then it seems that initially an ill-defined area was scooped out in the centre of the turret and occupied, and there were indications of a hearth and the placing of an odd stone flag or two and a quern which might have been intended as a floor. There was no dating evidence with this level, but much residual second century pottery. Then a definite hut, with rough footings of a wall, set in pale sand possibly representing disintegrated mortar, and running west to east across the middle of the turret, and with another piece of wall with six rough courses surviving running north/south, was constructed. This little hut thus formed, with internal dimensions of about 6' 6" by 16' 6", was floored, if rather intermittently, with large flags, and in part with clay. A very hard sandy mortary clay patch, blue and yellow in colour, in the centre of the hut rather suggested a mixing area, perhaps for builders' repairs.

*Final ruin.* Apart from the very intense charcoal deposit in and around the ruin of the hut, there is no evidence of any violent end to the turret as a whole. The composition of the overlying debris layer (sands of various colours, lumps of clay and mortar, earth, stone debris) indicates gradual ruin.

*Pottery*

The layer numbers are excavation numbers, and are retained for ease of reference to locate the exact position of pottery on plans and sections. They have no chronological significance in relation to the history of the turret.

*IA. 1.*

*Layer 11.* Stone and mortar make up for yellow clay floor.

This level produced 25 sherds of the bottom half of one thick grey jar, 5 sherds of grey jars, and two black burnished sherds.

*Samian.* It also produced a wall sherd of a Dr. 18/31, Hadrianic.

*Layer 10.* First yellow clay floor of turret. *See plan.*

1. Cooking pot in sandy black burnished ware, lightened by fire. *cf.* Gillam 122, Hadrianic.

This level also produced 12 very fragmentary amphora sherds from out of the clay on the doorstep.

*IA. 1 and 2.*

*Layer 9.* Dark occupation material built up over the yellow clay floor (10). This level contained the remains of a second thinner yellow floor (IA. 2), which appears on the section as a streak of clay. This floor had been worn almost entirely away.

2. Dish in black burnished granular ware fired to pale grey colour with cross hatched decoration. *cf.* Gillam 307, Hadrianic.

Not drawn—part of rough cast beaker, and the base of a grey jar or cooking pot. Also some 14 sherds of assorted jars and cooking pots, and 1 flagon sherd.

*Layer 9b.* On the IA. 2 yellow floor.

3. Jar or cooking pot in grey/buff fabric. *cf.* Gillam 115, Hadrianic.

*IA. 3? Ib.*

*Layer 8.* Pink clay floor.

4. Cooking pot or jar in hard buff ware with dark grey burnished surface. Although the angle of the everted rim is similar to that of certain third century cooking pots this vessel does not resemble them in any other particular. It is a grey wheel-made vessel of the kind defined as a jar by F. G. Simpson and it resembles, although it is not identical with, types 115-117. It is therefore probably Hadrianic, and in any case is almost certainly not of later date than the early Antonine period.

This layer produced 4 other sherds of assorted jars and cooking pots.

*Layer 7.* Brown occupation earth.

*Layer 7c.* Occupation immediately above pink clay floor.

5. Cooking pot in typical black sandy burnished fabric, with lead rivet. Hadrianic to early Antonine.

6. Bead rim cooking pot in pinky grey ware, with dark brown/grey surface. Resembles Gillam 118 in form. Hadrianic to very early Antonine.

This level also produced 40 sherds representing assorted grey and black burnished jars and cooking pots.

*IB. 7b.* Pottery directly associated with laid flags. *See plan.*

7. *Samian.* Fragment of lower frieze of Dr. 37. Mr. Brian Hartley dates this piece to 130-150.

This level also produced 11 sherds representing grey and black burnished jars and cooking pots.

*7a.* Top patching level of flagging floor and associated occupation earth, and occupation material on platform.

8. Cooking pot in light grey ware. *cf.* Gillam 116, 125-160.

9. Cooking pot in sandy ware with dark grey/reddish (partly oxidised) surface, originally black burnished, with grouped cross hatching. *cf.* Gillam 119, 125-160.

10. Cooking pot in grey ware. *cf.* Gillam 132, Antonine.

11. Flat rimmed dish or bowl in self coloured orange fabric. Hadrianic/Antonine.

12. Beaker in very hard grey ware. *cf.* Gillam 65, Antonine.

13. Cooking pot in grey ware, with three parallel darker burnished lines round shoulder. Probably Antonine.

14. Cooking pot in grey ware. *cf.* Gillam 116, probably Hadrianic.

15. Base of jar in pale orange ware, with very sparse white grit, and slightly sandy external finish. Somewhat resembles Gillam 154, Antonine.

16. Cooking pot in black burnished ware, with remains of lead rivet. *cf.* Gillam 121, Hadrianic/Antonine.

17. High quality narrow-mouthed jar, of conspicuously "Belgic" appearance, in grey ware, with smooth slate grey external finish. Probably Antonine.

18. Beaker in grey ware. *cf.* Gillam 65, Antonine.

19. Sherd in pinkish ware, with dark grey core, and blackish sandy surface, with graffito (incomplete). Apparently part of large storage jar.

20. Mortarium in orange to brick red fabric, with white grit and

creamy white slip. Sherd shows small surviving internal bead. Probably from Carlisle or Wilderspool. Hadrianic/Antonine.

21. Cooking pot in black burnished ware. *cf.* Gillam 123, Hadrianic/Antonine. A sherd of this pot was also found in layer 5.

7a also produced 77 sherds representing various grey and black burnished jars and cooking pots, some with hard water scale internally, 1 grey rusticated sherd, the base of one rough cast beaker, and 8 sherds of one black burnished cooking pot.

N.B. The pottery from the levels of IB as a whole gives a general impression of early to mid Antonine date. Even if the Hadrianic/Antonine pieces are discounted as survivals, the general impression still remains.

### *II and III. Pottery residual.*

*Layer 6.* Yellowy orange sand and rubble. Disuse and eventual ruin of turret.

22. Cooking pot in pale grey ware. *cf.* Gillam 135, Antonine.

23. Wide-mouthed jar in light grey fabric. *cf.* Gillam 174, Hadrianic/Antonine.

This layer also produced some 40 sherds of grey and black burnished jars and cooking pots, none of them apparently of later date than the second century.

### *III*

*Layer 2.* Dark ashy material overlying rough hut floor. *See plan.*

24. Narrow-mouthed jar in light orange fabric with white quartz grit, showing traces of darker orange slip on rim. This form goes right through the Roman period, but the fabric indicates a fourth century date.

25. Cooking pot in very heavy black sandy fabric. *cf.* Gillam 164, 380 to 400. Signal Stations, *Arch J.* 89, fig. 9, No. 13.

26. Small rim sherd of beaker in black burnished fabric. *cf.* Gillam 65, Antonine. Residual.

This level also produced some half dozen sherds apparently of cooking pots, none of them datable.

It appears that in connection with the raising of the threshold of the doorway and the building of the hut a late fourth century excavation was made right down through layer 6 and removing the top of layer 7 just inside the door. A hollow seems also to have been made in layer 6 for the hut floor. These holes then seem to have been filled back with mixed material containing much residual pottery.

*Layer 5.* Orange mortar connected with raising of threshold of door.

27. Cooking pot in black burnished ware. *cf.* Gillam 125, Hadrianic to early Antonine.

This level also contained 25 sherds representing cooking pots and jars (including a sherd of pot 21), all apparently residual.

*Layer 3.* Dark sand and ash under flagged floor of hut.

28. Miniature cooking pot in dark grey fabric. *cf.* Gillam 171, Antonine. Residual.

29. Jar in lightish grey sandy ware. *cf.* Gillam 116/117, Hadrianic. Residual.

30. Bead rim cooking pot in black burnished fabric lightened by firing. *cf.* Gillam 118, Hadrianic/Antonine. Residual.

This level also produced 29 sherds of the bottom 2/3rds of a grey Hadrianic trellised jar, 15 sherds of grey and black burnished cooking pots, all apparently residual, and 8 sherds of pot 25.

*Layer 4.* Beneath hut floor against turret south wall.

This area produced 1 *Samian* chip and 15 sherds of cooking pots and jars, all residual.

*Layer 1.* Final ruin of turret.

31. Cooking pot in brownish grey sandy fabric with darker grey external surface. Pots with cross hatching in groups of parallel lines appear in the second century, *cf.* Aldborough, fig. 24, nos. 16 and 20. Late second century.

32. Cooking pot in orange sandy fabric, probably originally black burnished. Antonine. *cf.* Gillam 135.

Not illustrated. Rim of *Samian* Dr. 31, Antonine. Also a small unidentifiable *Samian* sherd.

This layer also produced some 100 sherds apparently representing cooking pots and jars. Many were not datable, but the rest appeared to be all second century.

#### *Unstratified*

33. Cooking pot in black burnished ware. *cf.* Gillam 127, Hadrianic/Antonine.

34. Cooking pot or jar in pale grey ware. *cf.* Gillam 115-117, Hadrianic.

35. Cooking pot in black burnished ware. *cf.* Gillam 135, Antonine.

36. Miniature cooking pot in pale grey fabric. *cf.* Gillam 170. 130-180.

37. Cooking pot in pink fabric with black sandy surface. *cf.* Gillam 138, late Antonine.

38. Bead rim dish. *cf.* Gillam 317, Hadrianic/Antonine.

39. *Samian*. Drag. 37—fragment with running lions. Antonine.

40. Cooking pot in pale grey fabric.

41. Fragment in very hard dense black ware. This has been variously described as possibly Roman, too classical to be Roman, Wedgwood black basalt, and a clay pigeon. It came from outside the east wall of the turret, at a depth of some 2', in an area disturbed by earlier excavations.

Unstratified pottery also included the base of a *Samian* Drag. 37 (Antonine), some 100 sherds representing jars and cooking pots of mostly grey but also black burnished fabrics, and two sherds probably representing flagons.

#### *Small finds*

##### *IA. 1 and 2.*

*Layer 9.* IA occupation material.

Broken stone lid in red sandstone, blackened by firing. A.

##### *IA. 3? IB 1?*

*Layer 8.*

Stone cover in thin, grey, micaceous sandstone. B.

*Layer 7c.*

Brass stud probably for use as ornament on leather, with washer at back. Diameter  $\frac{3}{8}$ ". D.

Bronze toilet implement, forked end slightly damaged, of the sort known as a nail cleaner. A well made and elegant little object. E.

Fragments of some half dozen iron shoe studs, length  $\frac{5}{8}$ ", heads pyramidal. F.

Lump of iron slag, weight about 2 ozs., size  $1\frac{1}{2}'' \times 2''$ . Not illustrated.

Grey-green hone of fine micaceous sandstone, rebated at broad end to take mounting? Length  $3\frac{1}{2}''$ , width 1", tapering to  $\frac{1}{2}''$ . C.

##### *IB.*

*Layer 7b.* Occupation directly associated with laid flags.

*Coin*, in packing of higher level of platform. Dupondius (radiate crown) of Antoninus Pius. Reverse inscription illegible, standing figure, query Libertas? This coin was very corroded, but not, apparently, much worn.

Iron nail, length  $1\frac{1}{4}''$ , round head  $\frac{1}{2}''$  in diameter. Not illustrated.

Portion of lava quern, used as flagging. This was in a very

friable condition, and was drawn before lifting, when it disintegrated, except for the apex. G.

*Layer 7a.* Occupation material lying on the IB flagging floor.

Two bronze studs with wide heads and square shanks. The head of one is flat, and the other has a depressed ring round a central boss. *cf. Newstead, pl. XXI.* J.

Front part of bronze buckle, flat at back, and faceted on upper side.  $1\frac{1}{4}$ " in length. Not illustrated.

Iron shoe stud, length  $\frac{1}{2}$ ", head originally pyramidal in form. *cf. Newstead, pl. LXVII.* I.

Three iron nails, one  $2\frac{1}{4}$ " long, roundheaded, diameter 1"; another length 2", diameter of head  $\frac{1}{2}$ ". Not illustrated.

Portion of iron blade, rounded one end, diagonal break the other. Length  $3\frac{3}{4}$ ", width 1" to  $1\frac{1}{4}$ ". Not illustrated.

Belemnite (cretaceous), length  $2\frac{1}{4}$ ". This was probably brought here from the south, perhaps Yorkshire, as a charm or curiosity. (*Goniotteuthas quadrata.*) Not illustrated.

Two pieces moulded window glass, one  $2" \times \frac{3}{4}"$  (not illustrated), the other an edge piece approximately  $2" \times 2\frac{1}{2}"$ , thickness  $\frac{1}{8}"$ . H.

Stone moulding, raised dished shape, with central circular perforation of about  $1\frac{1}{2}"$  circumference, set in a square of some  $6\frac{1}{2}"$ , with a rough surface at the back. Perhaps some sort of spout. Fine grained quartz sandstone with some mica and secondary iron-staining. K.

### *II and III.*

*Layer 6.* Third century collapse of turret. Finds residual.

17. Piece of amphora with graffito, possibly JQ. Some  $2\frac{1}{2}"$  of sherd survive to the right of the graffito as drawn and are blank. M.

Fine grained micaceous grey green sandstone hone. Not complete. L.

Fragments of Niedermendig lava quern, disintegrated. Not illustrated.

### *III.*

*Layer 2.* Ash and occupation on fourth century hut floor.

Ornamental brass fitting, with two short studs at back for attachment. N.

$2\frac{3}{4}"$  nail and a  $2\frac{1}{2}"$  nail, very corroded. Not illustrated.

*Layer 2a.* Heavy firing north of hut wall.

Stone cover or pot lid, diameter 8", with central hole, diameter  $\frac{3}{4}"$ . Firing on a slightly convex surface indicates its use at one period as a pot lid. Coarse micaceous sandstone, iron stained, with disseminated carbonaceous particles. O.

*Layer 3.* Dark sand and ash under flagged floor of hut. Pottery all residual.

Bronze button, slightly oval,  $\frac{5}{8}'' \times \frac{3}{4}''$ , with single perforation for fastening. P.

$2\frac{1}{2}''$  nail with large head (1'' across). Not illustrated.

Stone pot lid,  $4\frac{1}{2}''$  diameter, with scalloped edge, apparently originally with 2 scallops to each of the eight divisions. A small central circle completes the simple flower pattern. Sandstone, as *O*. Q.

Stone pot lid, of similar sandstone to *Q*, diameter  $4\frac{1}{2}''$ . Undecorated. R.

*Layer 1.* Ruin of turret.

Fragment of bronze sheathing binding wooden object. X.

Portion of iron blade, 3'' long,  $1\frac{1}{2}''$  wide, with end of blade curving up to tang? Very heavily corroded. U.

Iron scabbard chape, with fragments of corroded bronze adhering internally and straw preserved in the external corrosion. Y.

Six inch nail originally with head 1'' square. V.

Five iron nails, one  $3\frac{1}{4}''$  long, head 1'' square. 4 nails, lengths indeterminate, one square headed. Not illustrated.

Bone plaque,  $1/10$ th'' thick, with holes in three surviving corners. There are signs of wear by diagonal threads. This suggests a hand craft, but tablets for the weaving of braid normally have a central hole. *cf. Ant. J.* IX, pl. XI. S.

Sliver of bone marked with deep and shallow scratches. Perhaps a tally. T.

Piece of very fine quartz with mica flakes and pink iron staining, cut as counter. W.

Piece of heavily fired blue green vitreous material, probably from lime kiln. Not illustrated.

#### *Unstratified*

A dupondius of Domitian (radiate crown) was found in a modern disturbance inside the doorway. Reverse illegible. The coin was extremely worn.

A plinth stone,  $31'' \times 24''$ , 4'' thick, with a chamfer on the one side of 4'' to 5''.

Stone bevelled all round, which perhaps represents a coping stone. The stone was  $24'' \times 18''$ , and the bevel was  $1\frac{1}{2}'' \times 2''$ . The stone was  $1\frac{1}{2}''$  thick. The bevelling all round may imply crenellation.

#### *Mortar and soil samples.*

Pieces of bright brick-red fired clay in size from walnut-shaped

pieces to pieces of  $2\frac{1}{2}'' \times 3'' \times 1\frac{1}{2}''$  were found in the core of the Great Wall. The mortar used in the Great Wall was rather yellowish and gravelly, and in the turret rather reddish and gravelly. Samples were taken of the various clay floors.

### *Summary*

The excavation of this turret in 1958 revealed a situation recorded otherwise only at Limestone Bank (29b), that of a turret which had gone out of occupation in the Antonine period, but had not been dismantled nor the Great Wall taken over the recess. It could, of course, always be possible for the ground floor of the structure to be disused, while the top floor continued to function, but the amount and nature of the debris that had built up inside 51b clearly indicate a certain amount of ruin and collapse. On the other hand sufficient of the turret must have been standing to provide enough shelter for it to be worth constructing the rough hut in period III. The thinning off of rubble in the north of the turret internally may indicate that the parapet walk at least and a continuous north face to the Great Wall were kept in good repair, and indeed it is difficult to see how the Wall could continue to function efficiently as a barrier if this were not the case. Another unexpected situation was revealed not only by the lack of any very clear demarcation between periods IA and IB (this now appears to be a feature of some turrets) but also the impression given by the pottery of an early Antonine occupation of the turret. The pottery evidence would not in fact be inconsistent with an occupation of the turret during the building of the Antonine Wall and a discontinuance of occupation very early in the IB period, whatever this might mean. A third unusual feature was the presence of a hut of period III. (Indications of a rough hut apparently of this date were noted at turret 7b.)

For some reason the north third of the turret, that is the areas immediately west and east of the platform, do not seem to have been lived in in the same way as the rest of

the turret and the occupation layers and floors found in the rest of the structure do not extend up to the north wall. Other features which invite explanation include the little stone box with its clay lining. Similar boxes are recorded at other turrets (35a and 7b, both in period I), but their use is not clear. There were also the vertical flags set on edge, which have been noted at other turrets (Willowford East for example) but have always been assumed to represent fall from an upper floor. There is no doubt that the ones in the IB level at 51b had been carefully bedded in place. They seem to have protected the oven area.

At this turret there was a very noticeable drop in standards of cleanliness between periods IA and IB. Period IA produced only some 19 pot sherds, 14 bones, and 4 small finds, whereas period IB produced 190 pot sherds, 83 bones and 25 small finds from within the turret. Mortaria were scarce as usual, only one sherd being found, and Samian was represented by only one fragment in IA and another in IB, and three unstratified sherds. In fact the garrison had been sufficiently short of pottery for it to be worth while rivetting cooking pots. 18 amphora sherds were found in IA, of which 12 were used as cobbling, but there were only five sherds in period IB, and there was only one stratified flagon sherd. These numbers are very low, even compared with other turrets. (There were however some 17 unstratified sherds of amphorae, four of which had holes drilled in them for secondary use, the holes being within  $\frac{3}{4}$ " and 1" diameter. It is possible that all the amphorae sherds found relate to this secondary use. Certainly one cannot postulate a Romanised wine-drinking vegetarian garrison at this turret.) The bones from turret 51b were sent off for identification in the north of England in the winter of 1958 and were unfortunately lost while away. However it is known that only ox, sheep and pig were represented, and that oyster shell was very sparse on the site (one or two shells only). Coal was in use throughout period I.

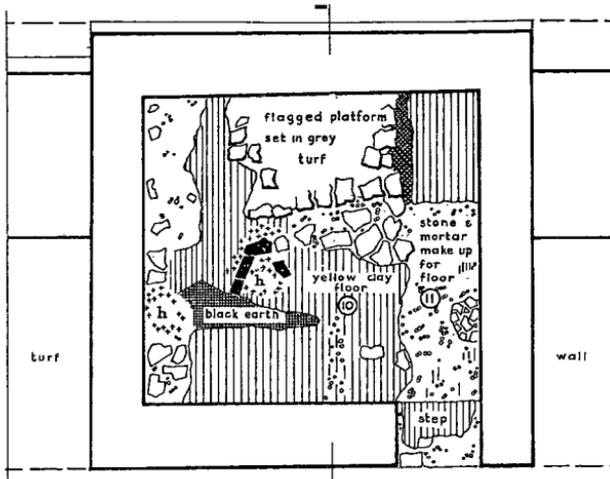
The general impression given by the turret is of a sort of

mess-room, providing warmth, food, facilities, recreation (gambling counter), perhaps minor repairs, shoe mending, knife sharpening, even possibly hand crafts. There was, as always, no tangible evidence for signalling.

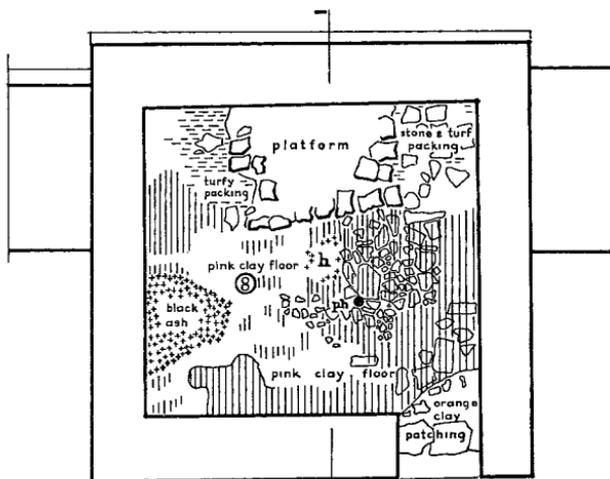
It should be noted that of the turrets and milecastles in the vicinity of Lea Hill, Milecastle 52 and turret 52a in the west, and milecastle 51 and turret 50b Stone Wall to the east appear to have been occupied right through to the fourth century. However turret 50a Stone Wall also went out of use in the second century, though in this case the recess was built up. It seems probable that reoccupation was always envisaged here as a possibility, and so the drastic step of demolishing the structure and carrying the Wall over it was never taken.

This reoccupation did in fact materialise, even though some two centuries had first to pass.

Acknowledgements are due to the Inspectorate of Ancient Monuments, Ministry of Works, Professor Birley, Mr. J. P. Gillam, and Mr. Charles Anderson and Mr. Croser on the organisational side. The heavy digging was largely done by Mr. Bailey, and Mr. Will Newton's help was invaluable with the complications of the worn and patched floors. Messrs. Batey, Frost and Nixon also assisted. Mr. J. P. Gillam gave much help with the coarse pottery, and Mr. Brian Hartley with the Samian. Mr. A. Thompson of the Ashmolean identified the coins. Mr. and Mrs. Mitchelson of Lea Hill gave much personal assistance. Mr. Brian Blake and Mr. Charles Anderson gave advice and took photographs. Dr. Gilbert Larwood identified the petrological material.



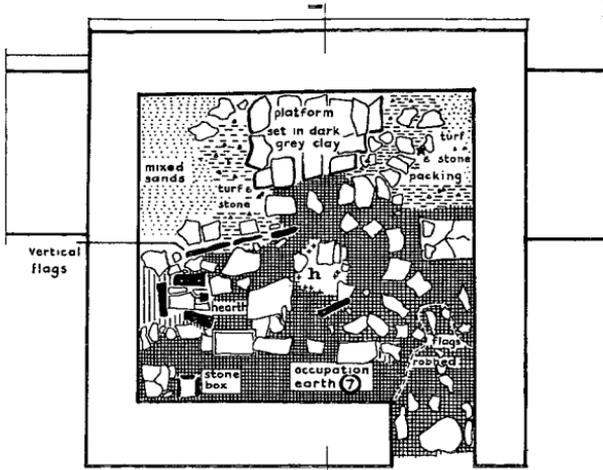
HA 1



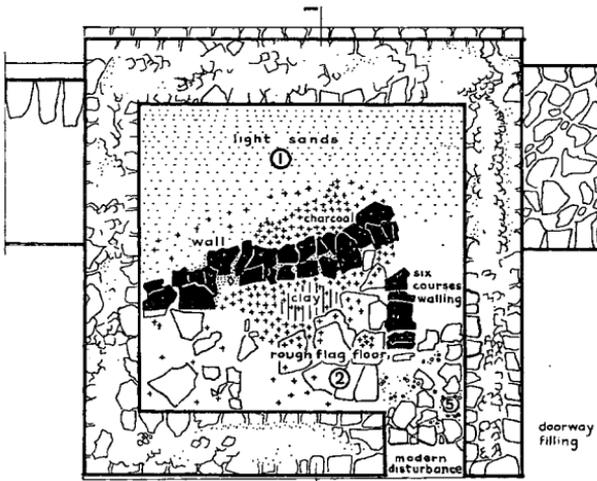
HA 3? HB



51b



I.B

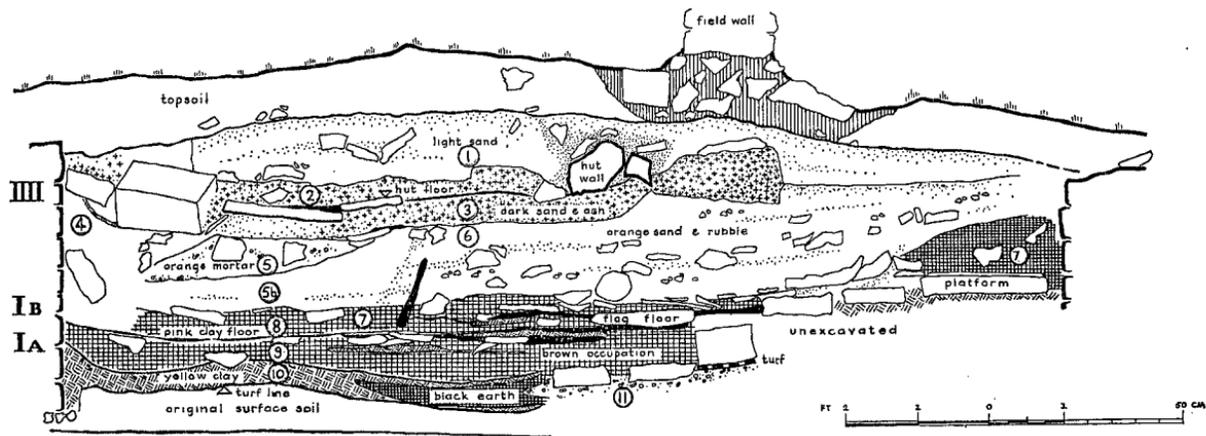


I.II



DW-PW

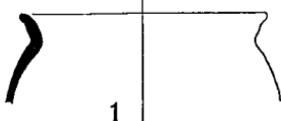
# TURRET 51 b



1a.1

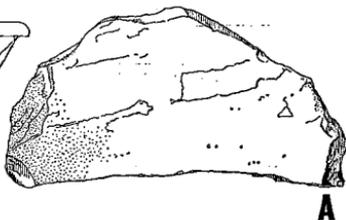
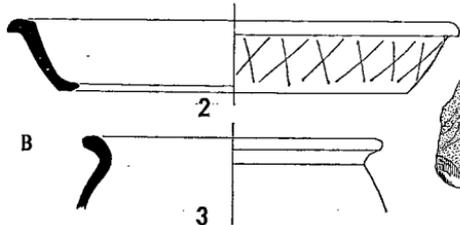
51b

LAYER 10



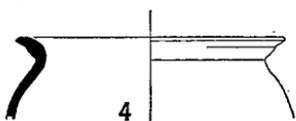
1a.1&2

LAYER 9

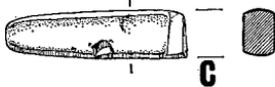
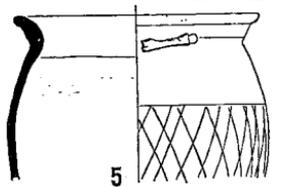


1a.3?1b

LAYER 8

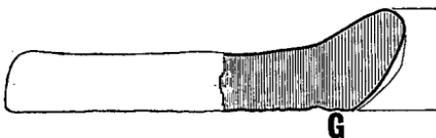


LAYER 7c



1b

LAYER 7B

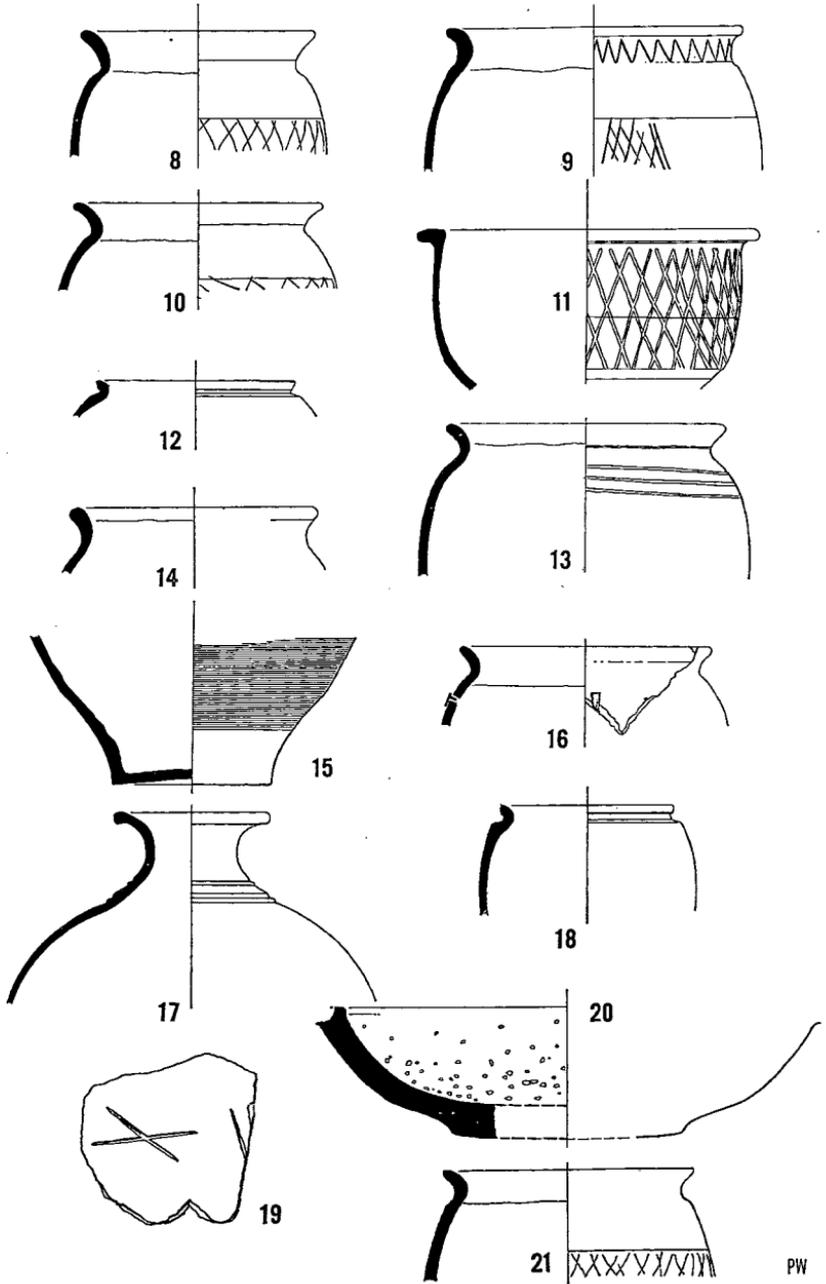


PW

1b

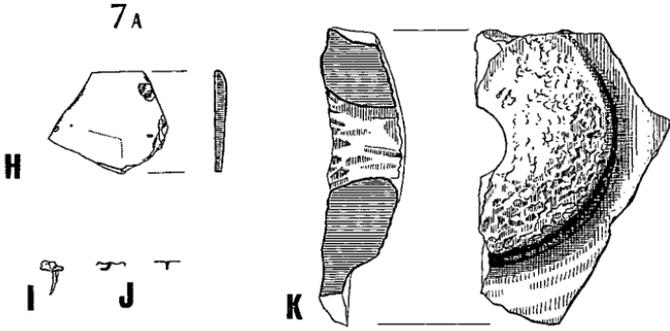
51b

LAYER 7A

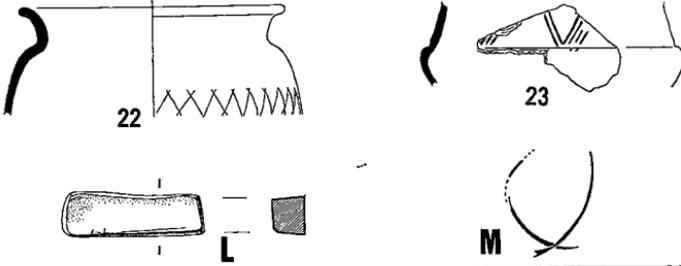


lb

51b

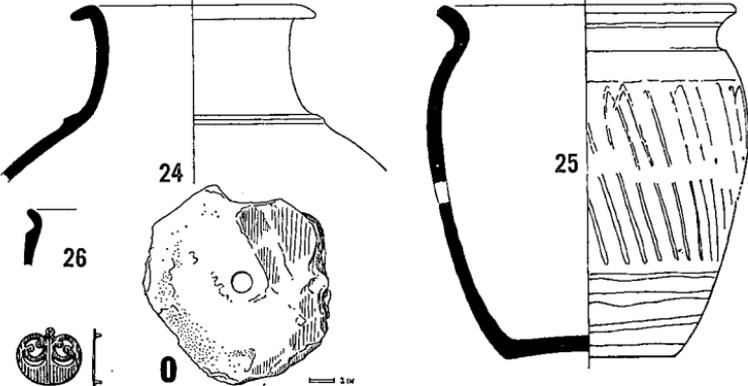


LAYER 6

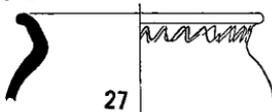


IIII

LAYER 2

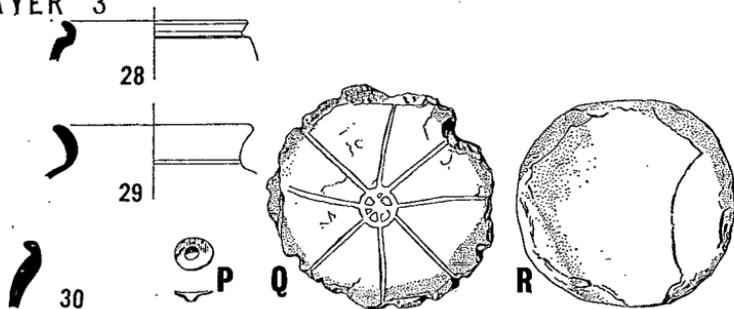


LAYER 5

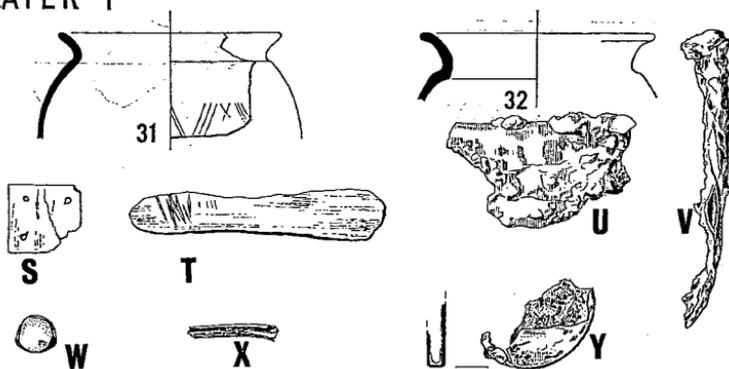


PW.

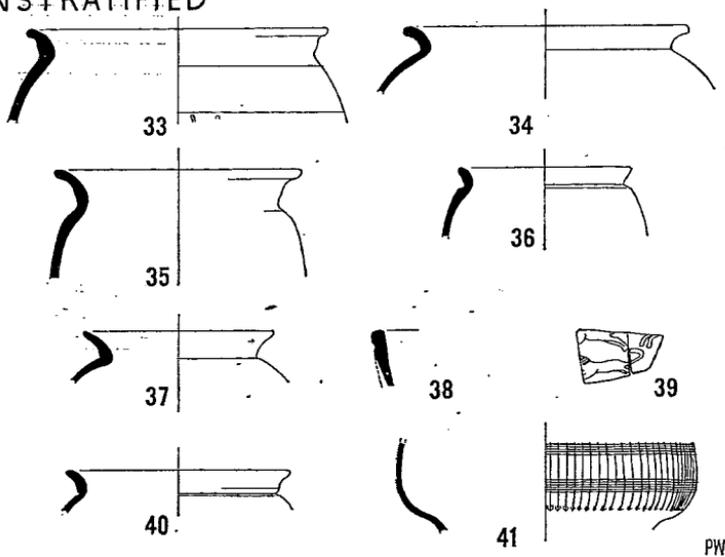
## LAYER 3



## LAYER 1



## UNSTRATIFIED



## REPORT ON THE ANIMAL REMAINS

*Raymond E. Chaplin.*<sup>1</sup>

*Introduction*

The animal bones from the excavations were submitted for report under the Bone Research Scheme. Material from five turrets has been examined, of which, only three produced any quantity of bone.

The bones are derived from rubbish deposits associated with floors and hearths within the turrets and similar tips of rubbish outside. Material from each phase of the turret has, for the purpose of the present report, been treated as a group whether found inside or outside of the turret, as it is clear that the two deposits are directly associated.

There is little point to be served by appending a lengthy list of the identifications made: accordingly only those bones from which measurements were made are recorded in detail below along with the figures which form the basis of Fig. 1. A general comment is made on each group of material. The conclusions and inferences drawn from the material are given below followed by fuller details of each group.

*Discussion*

From the nature of the bone material it is quite clear that this is food debris and that the food was in the form of joints of meat and not whole carcasses. Almost every joint of meat is represented but it is the stewing joints which make up the bulk of the material. These include foot bones which although not a joint commonly eaten today, would, nevertheless, provide body for a stew. From other sites that we have examined it would seem that this joint was in general use both in Roman and Saxon times. From the present site it can be shown that a large percentage of the long bones have been deliberately split or broken to aid in the extraction of the marrow. Other joints such as leg of mutton were presumably roasted either in an oven or on a spit.

<sup>1</sup> Of the Passmore Edwards Museum, Romford Road, London, E.15.

Ox, sheep and pig were the animals which appear almost exclusively to have provided the meat requirements of these troops. There is no evidence that fish, poultry or game were eaten, and only in a small group of bones from turret 45a do we find a fragment of a horse bone. In turret 18b, period IA, were three oyster and three mussel shells and in period IB were two oyster shells. In turret 25b period IA were four oyster shells. In turret 26a, period IB, were two oyster shells, and in the period IB/II hearth outside the turret were one mussel and three oyster shells.

A discussion of the significance of these bones in relation to the sources of supply of meat to the garrisons and to the messing arrangements of the men is best deferred until the bones from current work on native settlements in the area have also been analysed.

In fig. 1 the ratio of species has been depicted in the form of  $\pi$  graphs for those groups which were of sufficient size to provide reliable figures. The minimum number of animals present per species is expressed as a percentage of the total for all species; the figures reading clockwise. Mature animals are shown blank whilst the immature animals are lined in. In all cases the minimum total of all species is quite small. Whilst in the present case the minimum number of animals has been used as the basis of calculation, it is not completely satisfactory but is to be preferred to using the actual number of fragments identified. The merits of these two methods are considered by the writer in an article to appear in a forthcoming number of *Antiquity*, to which the reader is referred. It will be seen from the graphs that food preference varied from site to site and also by period.

Table showing the minimum number of mature and immature<sup>2</sup> animals for three turrets in periods IA and IB.

| species        | 18b |     | 25b |     | 26a |  |
|----------------|-----|-----|-----|-----|-----|--|
|                | IA. | IB. | IA. | IA. | IB. |  |
| Ox mature      | 2   | 1   | 3   | 1   | 3   |  |
| Ox immature    | —   | —   | 1   | 1   | 1   |  |
| Sheep mature   | 4   | 2   | 4   | 1   | 3   |  |
| Sheep immature | 1   | —   | 1   | 2   | 4   |  |
| Pig mature     | —   | 1   | 1   | —   | 1   |  |
| Pig immature   | 1   | —   | 1   | —   | 2   |  |

<sup>2</sup> Immature animals are those where the epiphysis of a bone is not fused. Since the date of fusion of the epiphysis varies with different bones, these figures should be used with caution.

Of the animals themselves there is not a great deal that can be said. The measurements given below provide an indication of the size of animal, and these fall within the range of Romano-British domestic animals from other parts of the country. The sheep are of the slender-limbed type. It is unfortunate that more cranial fragments are not present as one would like to know more about the form of the horn cores. Only two horn cores are present attached to parts of the cranium, one of these is long and slender curving gently upwards, backwards and outwards, the other being short and squat. These may be male and female of the same breed. The only fragment of ox horn core shows the cattle to have been of the shorthorn type, though the horn core is fairly stout. More specimens of both these animals are needed to identify a definite type.

## MEASUREMENTS OF BONES AND DETAILS OF GROUPS

## Turret 18b

A large group of material containing ox, sheep and pig bones in period IA. 1. Periods IA. 2 and IA. 3 produced much smaller groups of material. Only the data from period IA. 1 has been used in the  $\pi$  graph.

## Measurements

*Ox:*

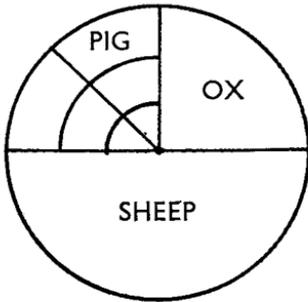
|                       | Max. length, 89a | width  |
|-----------------------|------------------|--------|
| Proximal phalanges    | 63.5 mm.         |        |
|                       | 64.5 mm.         |        |
| Intermediate phalange | 40.5 mm.         |        |
| Ungual phalange       | 72.5 mm.         | 29 mm. |

*Sheep:*

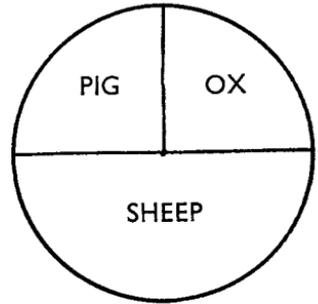
|             |                                  |          |
|-------------|----------------------------------|----------|
| Humerus.    | Max. width distal end, 89c       | 27 mm.   |
| Radius.     | Max. width distal end, 89c       | 24 mm.   |
| Metacarpal. | Max. width distal end, 89c       | 23.5 mm. |
| Metacarpal. | Epiphyses not fused              |          |
|             | Max. width distal end with epip. | 22 mm.   |
|             | Max. width distal end less epip. | 21 mm.   |
| Tibia.      | Max. width distal end, 89c       | 24 mm.   |
| Tibia.      | Max. width distal end, 89c       | 23.5 mm. |
| Tibia.      | Max. width distal end, 89c       | 21 mm.   |

Phalanges are not distinguished between fore and hind limb bones.

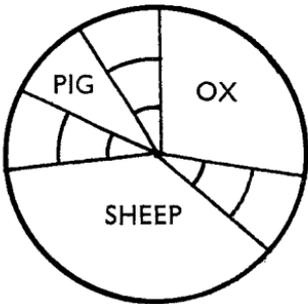
IA  
HADRIANIC



IB  
ANTONINE

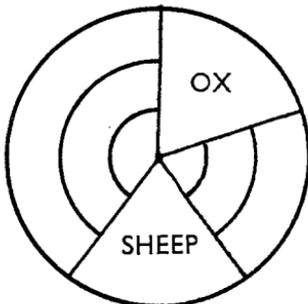


TURRET 18 B



TURRET 25 B

PERCENTAGE OF ANIMALS  
EATEN AS FOOD, BASED  
ON THE MINIMUM NUMBER  
OF ANIMALS PER SPECIES.  
FOR DESCRIPTION SEE TEXT  
BLANK = MATURE ANIMALS  
LINED = IMMATURE



TURRET 26 A

FIG. 1

The group from period IB is smaller and contains ox, sheep and pig bones only.

## Measurements

*Sheep:*

|             |                              |          |
|-------------|------------------------------|----------|
| Humerus.    | Max. width distal end, 89c   | 26 mm.   |
| Metatarsal. | Max. width proximal end, 89b | 17.5 mm. |
|             | Max. length, 89a             | 127 mm.  |
|             | Min. shaft width             | 11.2 mm. |

*Pig:*

|                                      |          |
|--------------------------------------|----------|
| Molar tooth (M <sub>3</sub> ) length | 33.5 mm. |
|--------------------------------------|----------|

## Turret 25b

This is a large group of material consisting only of sheep, pig and ox bones.

## Measurements

*Ox:*

|                        |                            |                 |
|------------------------|----------------------------|-----------------|
| Radius.                | Max. width distal end, 89c | 73 mm.          |
| Metacarpal.            | Max. width prox. end, 89b  | 49.5 mm.        |
| Calcaneum.             | Max. length, 89a           | 119 mm.         |
| Proximal phalanges.    | Max. length, 89a           | 57 mm.          |
| Proximal phalanges.    | Max. length, 89a           | 51 mm.          |
| Intermediate phalange. | Max. length, 89a           | 39 mm.          |
| Ungual phalanges.      | Max. length, 89a           | 69 mm. 55 mm.   |
|                        | Max. width.                | 26 mm. 23.5 mm. |

*Sheep:*

|                              |                              |          |
|------------------------------|------------------------------|----------|
| Scapula.                     | Width of base                | 29.6 mm. |
| Radius.                      | Proximal end, Max. width 89b | 26.5 mm. |
| Remains of four animals only |                              | 30.0 mm. |
|                              |                              | 26.0 mm. |
|                              |                              | 28.0 mm. |
|                              |                              | 25.0 mm. |

|             |                                     |          |
|-------------|-------------------------------------|----------|
| Metacarpal. | Lacks distal epiphysis              |          |
|             | Max. length less epip., 89a         | 109 mm.  |
|             | Max. width proximal end, 89b        | 20.5 mm. |
|             | Max. distal width less epip., 89c   | 24.5 mm. |
|             | Minimum shaft width.                | 13.3 mm. |
| Tibia.      | Max. width distal end, 89c          | 24 mm.   |
| Tibia.      | Max. width distal end, 89c          | 25 mm.   |
| Tibia.      | epiphysis not fused, 89c            | 24 mm.   |
|             | less epiphysis, 89c                 | 22 mm.   |
| Metatarsal. | Max. width dis. end less epip., 89c | 19 mm.   |

The phase IB contains residual Hadrianic material. Because of this contamination the group has not been examined in detail. The deposit consists mainly of fragments of ox bones with a low proportion of sheep, no pig were recognised, the deposit contained an eroded fragment of Red deer antler.

#### Turret 26a

The groups from periods IA. 1 and IA. 2 are quite small and contain only bones of ox and sheep. Only data from period IA. 1 has been used in the  $\pi$  graph.

#### Measurements

##### *Ox:*

|             |                                  |         |
|-------------|----------------------------------|---------|
| Metacarpal. | Max. width proximal end, 89b     | 63 mm.  |
| Metacarpal. | Immature but epip. present.      |         |
|             | Max. length plus epip., 89a      | 147 mm. |
|             | Max length less epip., 89a       | 127 mm. |
|             | Max. width proximal end, 89b     | 42 mm.  |
|             | Max. width distal end less epip. | 39 mm.  |

##### *Sheep:*

|         |                              |        |
|---------|------------------------------|--------|
| Radius. | Max. width proximal end, 89b | 27 mm. |
| Tibia.  | Max. width distal end, 89c   | 22 mm. |

#### Phase IB

Phase IB produced a fairly large group of bones. The animals represented are ox, sheep, pig and a single fragment of Red deer.

#### Measurements

##### *Ox:*

|                                 |                           |          |
|---------------------------------|---------------------------|----------|
| Metacarpal.                     | Max. width prox. end, 89b | 58 mm.   |
| Intermediate phalange.          | Max. length, 89a          | 38.5 mm. |
| Ungual phalange<br>joins above. | Max. width.               | 22 mm.   |
| Ungual phalange.                | Max. length, 89a          | 68 mm.   |
|                                 | Max. width.               | 28 mm.   |

##### *Pig:*

|                                |                                       |          |
|--------------------------------|---------------------------------------|----------|
| Humerus. (epiphysis not fused) | distal width<br>(includes epiphysis). | 37.5 mm. |
|--------------------------------|---------------------------------------|----------|

*Sheep:*

|             |  |          |                              |
|-------------|--|----------|------------------------------|
| Mandible.   | Length of tooth row                            | 69 mm.   |                              |
| Femur.      | Max. width proximal end, 89b                   | 38 mm.   | } Probably all<br>one animal |
| Femur.      | Max. width distal end, 89c                     | 32 mm.   |                              |
| Scapula.    | width at base                                  | 26 mm.   |                              |
| Humerus.    | Max. width distal end, 89c                     | 28.5 mm. |                              |
| Metacarpal. | Max. length, 89a                               | 115 mm.  |                              |
|             | width proximal end, 89b                        | 20 mm.   |                              |
|             | width distal end, 89c                          | 21.5 mm. |                              |
|             | Minimum width of shaft                         | 11 mm.   |                              |
| Radius.     | Width distal end less epip., 89c               | 25 mm.   |                              |
| Metatarsal. | lacks distal epiphysis                         |          |                              |
|             | Max. length less epip., 89a                    | 92 mm.   |                              |
|             | Max. distal width less epip., 89c              | 18.5 mm. |                              |
| Metatarsal. | Very immature, distal width<br>less epip., 89c | 16 mm.   |                              |

A small group associated with bronze-working produced only a few fragments of sheep and ox bones.

A hearth outside the turret produced fragments of ox, sheep and pig bones.

## Measurements

*Ox:*

|             |                  |        |
|-------------|------------------|--------|
| Astragalus. | Max. length, 89a | 59 mm. |
|             | Max. width       | 40 mm. |

*Sheep:*

|          |                            |        |
|----------|----------------------------|--------|
| Humerus. | Max. width distal end, 89c | 24 mm. |
|----------|----------------------------|--------|

*Pig:*

|                   |                                    |          |
|-------------------|------------------------------------|----------|
| Radius, immature. | Max. length (less both epip.), 89a | 87 mm.   |
| Calcaneum.        | Max. length, 89a, 70 mm. width     | 27.5 mm. |
| Astragalus.       | Max. length, 89a, 36.5 mm. width   | 22.5 mm. |

Calcaneum and astragalus are from the same animal.

A group of bones was found between a working surface and the wall of the building. These consisted entirely of ox bones all cleaved to open up the marrow cavity. This group is considered to be the contents of a single stewpot.

Data from all groups in phase IB has been incorporated in the  $\pi$  graph.

## Turret 35a

There was only a very small group of bones from this turret which consisted of ox with only a single fragment of sheep.

## Turret 45a

This produced only a small group of bones which although unstratified are directly related to the site. Animals present were ox, sheep and horse. Horse consisted solely of a fragment of metacarpal bone.