

X.

THE NATURE AND PURPOSE OF THE EXPANSIONS ON THE ANTONINE WALL.

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INTRODUCTORY.

A minor, but intriguing, problem concerning the Antonine Wall is presented by the occurrence, in the central sector, of a number of platforms projecting from the south side of the Rampart.¹ Six of these platforms, or "expansions" as they are commonly termed, are either visible today or on record, and it can hardly be a matter of chance that they fall into pairs—two being located in the Tentfield Plantation to the E. of Rough Castle fort, two between Rough Castle and Bonnyside House, and two on the western slope of Croy Hill.² Details of the individual expansions are given in an Appendix (p. 169), and here it is sufficient to draw attention to the following general points:

1. At the present time the five surviving examples are all more or less semi-circular on plan, and it has sometimes been taken for granted that this was their original shape. Two of them measure 50 ft. from E. to W. at the Rampart face by 30–40 ft. from N. to S., while the other three are somewhat smaller, measuring about 35 ft. from E. to W. by some 20 ft. from N. to S. The sixth expansion on the other hand, *Tentfield West*, whose outline is no longer visible, is described as being square by both Gordon and Roy, and according to Roy's drawing measured about 18 ft. along each side.
2. Trenches cut through the two expansions on Croy Hill at the end of the 19th century showed that they were built of turf, like the Rampart itself, and were added to the Rampart at some time after its construction, though probably not long after. One of them was laid directly on the living rock, whereas the other rested on a rough base composed of large boulders.
3. The analogy which has sometimes been suggested between the expansions and the turrets on Hadrian's Wall is inapt, since the

¹ Cf. Macdonald, *The Roman Wall in Scotland*, 2nd edition (1934), pp. 350–8; *The Antonine Wall Report* (1899), pp. 144–9. The abbreviations *RWS* and *AWR* are used hereinafter to refer to these sources.

² For convenience, the expansions in question are referred to throughout this paper as *Tentfield East* and *West*, *Bonnyside East* and *West*, and *Croy Hill East* and *West*.

expansions are not spaced at regular intervals¹ and there is no reason to suppose that there was ever a chain of them extending from end to end of the Wall. Only two other possible examples were noted by the compilers of the *Antonine Wall Report*, and of these, one, near Dullatur railway station,² proved on excavation to be a natural mound,³ while the second, 160 yds. E. of Bonnyside House,⁴ is so intangible that it is not surprising that its sponsors concluded by honestly admitting "it is scarcely thought that this can be regarded as one of the expansions."

4. The cuttings made through the Croy Hill expansions shed no light on their purpose, which remained unexplained.

Since four of the six known expansions are situated in Stirlingshire, the Royal Commission on the Ancient and Historical Monuments of Scotland decided to undertake the complete excavation of one of them in 1957, as a contribution towards the forthcoming Inventory of that county. By a fortunate coincidence, Mr Iain MacIvor of the Ancient Monuments Inspectorate was simultaneously making plans for the re-examination of the fort of Rough Castle which, together with an adjacent stretch of the Antonine Wall, has recently been placed under the guardianship of the Ministry of Works, and a joint excavation was therefore arranged. The Commissioners are indebted to the Ministry for supplying labour and equipment, and also to the Scottish Field School of Archæology for providing funds to maintain four student helpers who divided their time between the two enterprises.

THE EXCAVATION.

The expansion selected for excavation was *Bonnyside East*, which is situated about 500 yds. W. of Rough Castle and 60 yds. W. of the point where the track from Woodside Cottage joins the public road.⁵ As the contoured plan shows (fig. 1) its present shape is far from being a true semi-circle, and its overall measurements are about 40 ft. from E. to W. at the Rampart face, by about 18 ft. from N. to S. Unlike *Bonnyside West* it has no flat top, the profile exhibiting a fairly uniform slope, 3 ft. in vertical height, from the base of the expansion on the S. to the junction with the Rampart. The Rampart itself is well preserved where it is buttressed by the expansion, but it diminishes in height on either side. Immediately to the E. it has, in fact, been completely eroded away by flooding, while to the W., and just inside the left-hand margin of fig. 1, a former excavation has left a pronounced scar on the crest.

¹ Measured along the Rampart, the Tentfield pair are 650 yds. apart, the Bonnyside pair 350 yds. apart, and the Croy Hill pair less than 150 yds. apart.

² *AWR*, p. 147.

³ *RWS*, p. 351, n. 1.

⁴ *AWR*, p. 107.

⁵ O.S. 6-inch map, Stirlingshire Nxxx NW.; Nat. Grid ref. NS/838798. Cf. *RWS*, Pl. LIX, 1.

In the first instance, a series of parallel trenches was cut from N. to S. through the expansion, at intervals of 3 ft., as far as the inner kerb of the Rampart. These trenches enabled us to examine the structure in cross-

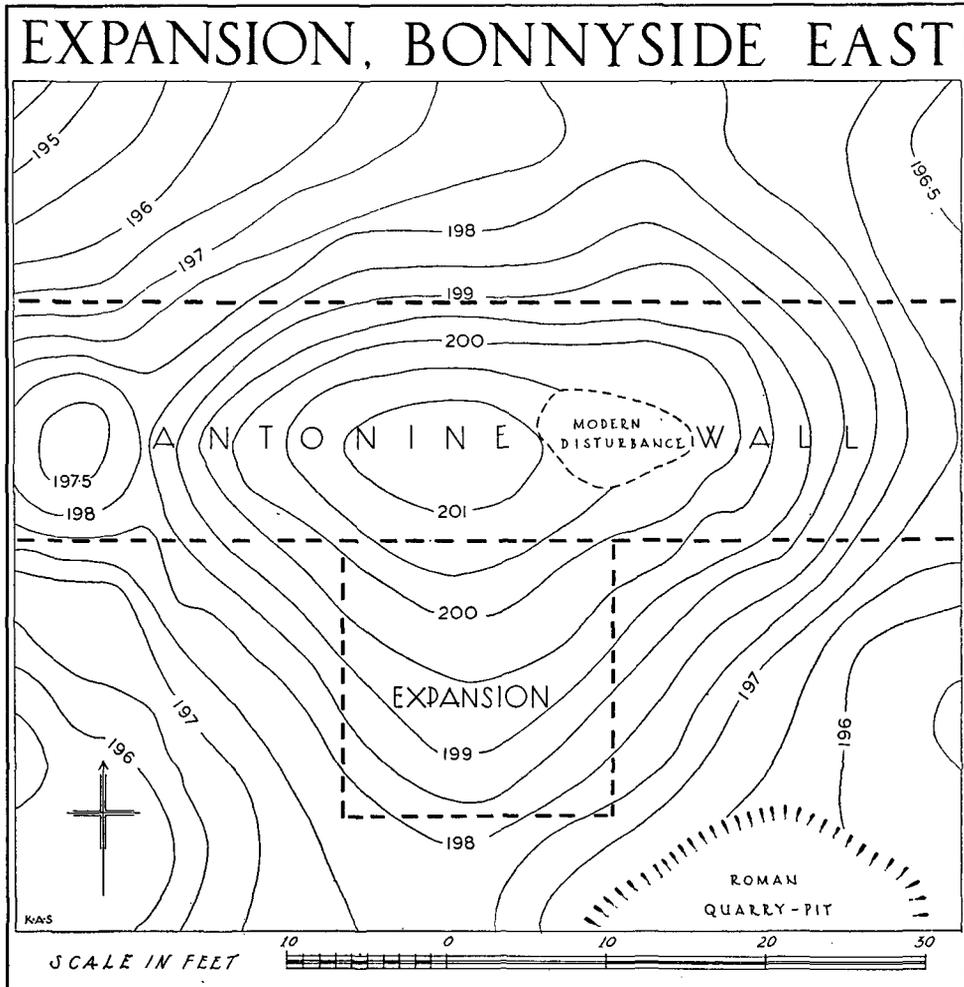


Fig. 1.

section, and at the same time to determine its shape; and when the intervening balks were removed a complete east-west section of the expansion was revealed as near as possible to the point of junction with the face of the Rampart (fig. 3, C-D). Finally, a cutting was made through the Rampart itself, in line with the centre of the expansion, in order to produce a transverse section through both works (fig. 3, A-B). At the conclusion of the

excavation the excavated soil was replaced and the expansion restored to its former condition.

At this point the stone foundation of the Rampart proved to be 14 ft. 9 ins. in width, and the Rampart itself survived to a height of 4 ft. As is usual in the Bonnyside sector, the individual layers of turf were easily distinguishable in the section (fig. 3, A-B), the black lines formed by the decayed vegetation standing out sharply from the intervening bands of grey or ochre sandy earth, and traces of twenty closely-spaced laminations could be counted. The only unexpected feature was the presence, immediately underneath the humus, of a thin capping of boulders and small stones of the kind that occur locally in the subsoil. At first sight it was tempting to suppose that we had here the remains of a rampart-walk, but careful trowelling showed that the majority of the small stones were angular fragments whose upper surfaces showed none of the signs of wear consistent with a trodden walk. It must therefore be concluded that these stones were formerly scattered throughout the vanished upper portion of the Rampart and have settled to their present position as the turfwork has been progressively eroded away. A similar scatter of boulders, small stones and pockets of gravel was discernible in the surviving turfwork on either side of the section.

The excavation showed that the present appearance of the expansion is misleading, and that it was originally square on plan at ground level, measuring 17 ft. along each side (fig. 2). The edges rested on a cobbled foundation which was neatly kerbed with boulders on the three open sides, but the centre was laid directly on the subsoil. On the north side several cobbles overlapped the south kerb of the Rampart, demonstrating unequivocally that the Rampart foundation had been constructed first and the expansion base added shortly afterwards. A similar chronological relationship also existed between the expansion and a Roman quarry-pit found underneath it (fig. 2), since the quarry-pit had been filled with turf by the expansion builders as soon as it had been dug, and before any silt had had time to accumulate in the bottom.¹ On the other hand the turf superstructures of both the expansion and the Rampart had evidently been laid in a single operation, for not only was there no clear-cut division between them, but several laminations continued without visible interruption from one structure to the other as shown in fig. 3, A-B. It follows therefore that in this sector the Military Way and the Rampart base were constructed simultaneously; the foundation of the expansion was added almost at once; and finally the turf superstructures of both the expansion and the Rampart were erected on the prepared foundations. Such a sequence is indeed a

¹ Although they have previously escaped notice, a number of similar quarry-pits from which gravel was obtained for surfacing the Military Way can still be seen immediately behind the Rampart between *Bonnyside East* and *Bonnyside West*. A portion of one of them appears in fig. 1. The course of the Military Way hereabouts presumably coincides with the modern road.

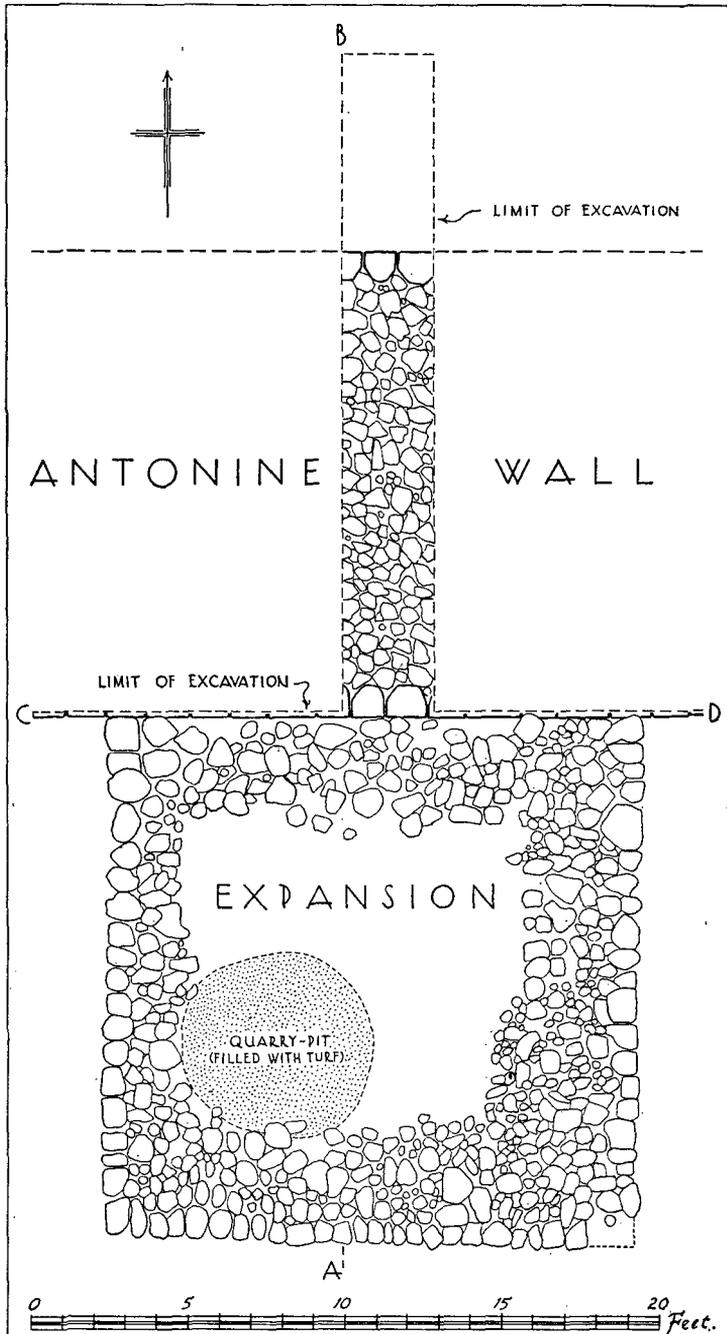


Fig. 2.

logical one, granted that the expansions were an integral part of the original design of the Wall, but has now for the first time been demonstrated by excavation.¹

In marked contrast to the Rampart, however, the expansion was not of uniform construction throughout: only the outer skin on the exposed sides was carefully built of good quality turf, to a thickness of about 3 ft., the core being composed of inferior turves laid in a more haphazard fashion and with a greater admixture of earth. Although a careful search was made for post-holes, none were found either in the body of the expansion or in the subsoil beneath or around it. It must be concluded therefore that the expansion was not the base for a substantial timber structure, such as a watch-tower or signal-post of the kind found on the Gask ridge near Perth, but that it was essentially a simple platform of sods with a square base, a height sufficient to justify the stone foundation, and the sloping sides which would be necessary to give it stability. No reliable information about the precise angle of the sides was obtainable at *Bonnyside East*, for although the west side was standing to a height of 3 ft. at the north-west corner, the profile showed clear evidence of distortion due to shrinkage and compression of the turf. A slope of 70° however is not unreasonable for turfwork, especially when underpinned with stone, and if the back of the Rampart was inclined at an angle of 60°,² the top of the expansion at 10 ft. above ground level, the estimated height of the Rampart,³ will have taken the form of an oblong area measuring 19 ft. in length from N. to S. by 10 ft. in width (fig. 4).

THE PURPOSE OF THE EXPANSIONS.

In consequence of the excavation of *Bonnyside East* the concept of two or more types or sizes of expansion⁴ is no longer admissible. *Bonnyside West* and *Tentfield East* are similar in superficial appearance to *Bonnyside East*, and although both the Croy Hill expansions are somewhat larger at the present time, the stone foundation of *Croy Hill East* was only 1 ft. longer (18 ft.) from N. to S. than at *Bonnyside East*.⁵ And the ground plan of *Bonnyside East* is to all intents and purposes identical with Roy's plan of *Tentfield West*, the dimensions corresponding to within 1 ft. This uniformity of design implies that the expansions served a common purpose, and it remains to consider what this purpose can have been. Although the structure itself did not proclaim its function, a significant clue was furnished

¹ As already stated (*supra*, p. 161) the Croy Hill expansions were both built independently of the Rampart, but this fact does not necessarily denote anything more than the latitude allowed to different working parties.

² At *Croy Hill East* the back of the Rampart had a slope of 62½° (*AWR*, p. 79). The front was no doubt steeper.

³ *RWS*, p. 88.

⁴ *RWS*, p. 353.

⁵ The width of the stonework at *Croy Hill East* has not been established, but surface appearances both here and at *Croy Hill West* are consistent with square foundations.

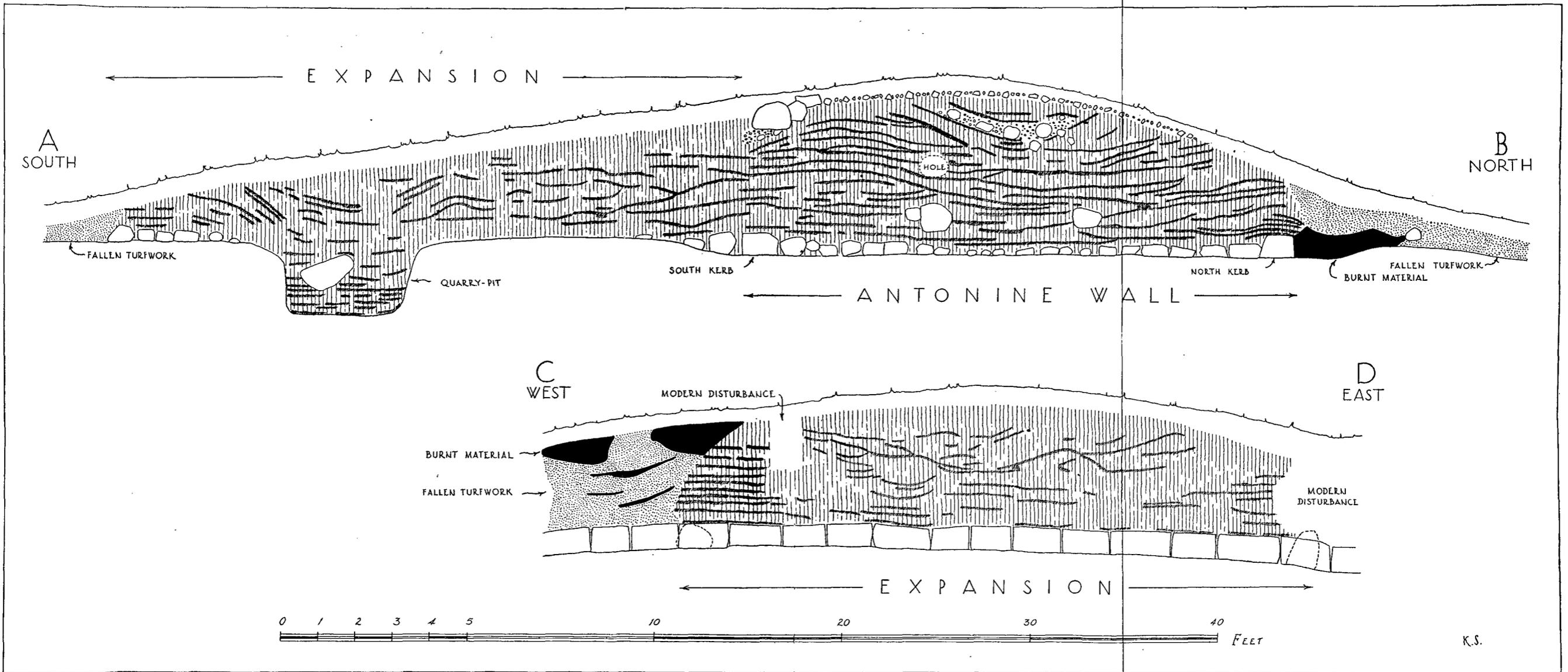


Fig. 3.

at *Bonnyside East* by the discovery of considerable quantities of burnt wood and burnt turfwork round the base. The burnt deposits, interspersed with unburnt material, were particularly prominent amongst the fallen turfwork that had come to rest in the angle between the west side of the expansion and the Rampart, while a similar deposit, containing fragments of two

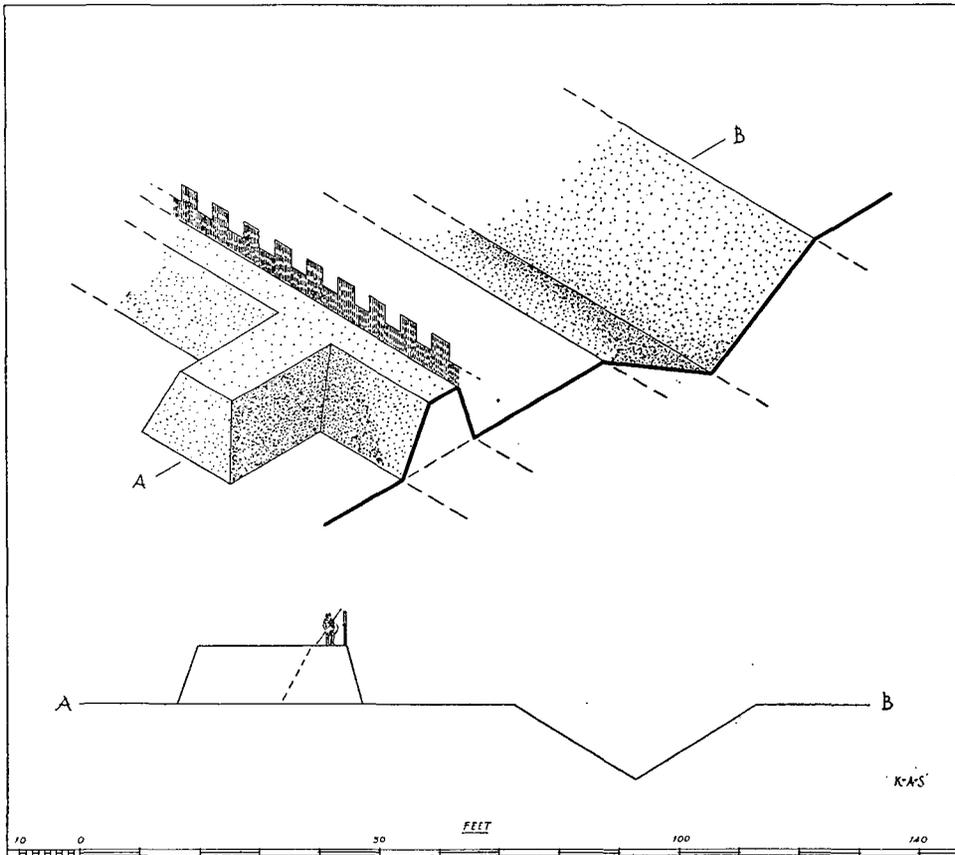


Fig. 4.

Roman coarse vessels—a yellowish buff mortarium and a black fumed cooking-pot (fig. 5), both heavily burnt—was found lying against the north kerb of the Rampart. The implications of these discoveries are twofold. In the first place, the burnt deposits are clearly the result of successive conflagrations on top of the expansion. And secondly, the presence of potsherds implies that troops were not merely patrolling the Rampart at this point but were actually stationed on the spot from time to time. There can thus be no doubt that Macdonald was right when he suggested that the expansions

were neither ramps for staircases, watch-towers, nor artillery platforms, but stances for beacons.¹ On the other hand, considerations of spacing and siting make it impossible to believe that they were designed for lateral communication along the line of the Wall. From *Croy Hill East*, for example, there is an uninterrupted view of Bar Hill fort, 1 mile to the W., and the interpolation in this distance of a second expansion, *Croy Hill West*, only 150 yds. away from the first, is incomprehensible in relation to any lateral system of signalling. Similarly, *Bonnyside East* is not suitably placed to bridge the gap between *Bonnyside West* and the fort of Rough Castle, while rising ground screens *Tentfield East* from *Tentfield West*. Thus the expansions must be interpreted not as local exchanges, transacting normal

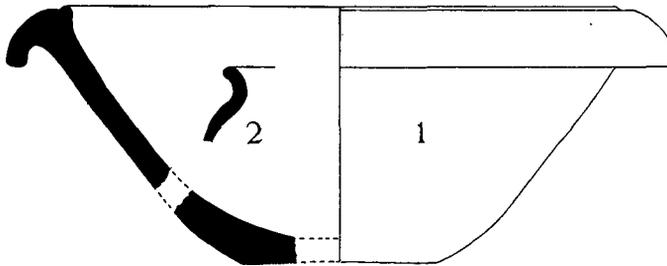


Fig. 5.

day-to-day business,² but as trunk exchanges built to receive and transmit urgent messages over long distances on exceptional occasions. For such purposes the most effective instruments in use in Roman times were the fixed beacons composed of straw or logs, of the kind depicted on the Column of Marcus Aurelius:³ and a simple code could be operated by employing them either singly or in combination. In the case of the Bonnyside and Tentfield expansions, which have no great outlook to the S., attention was obviously focussed on the forward area, and particularly on the outpost forts guarding the Stirling gap. The Croy Hill pair, on the other hand, not only enjoy an extensive prospect to the N. and W., but also command a magnificent view of the Clyde valley to the SW. It can hardly be a coincidence that this is the most easterly point on the Wall from which such a rearward view is obtainable, and it does not require much effort of the imagination to picture urgent warnings of native uprisings being relayed to Rough Castle or Castlecary from the forward troops in Perthshire, transmitted thence along the Wall, and quickly dispatched south-westwards by means of the balefires on Croy Hill to arouse the garrisons of Clydesdale.

¹ *RWS*, pp. 356-8.

² Such local exchanges, corresponding to the turrets on Hadrian's Wall, must surely have existed on the Antonine Wall, but none have so far been found.

³ Cf. *RWS*, Pl. LX, 2.

APPENDIX.

Details of the six known expansions are as follows:

1. *Tentfield East*.—Situated in Tentfield Plantation, three-quarters of a mile E. of Rough Castle fort and 160 yds. W. of Lime Road.¹ It measures about 32 ft. from E. to W. at the Rampart face by 18 ft. from N. to S., and is 3 ft. in height. It has not been excavated but the top is disfigured by a large hole where a tree has been uprooted.
2. *Tentfield West*.—Situated 650 yds. W. of *Tentfield East* and 40 yds. E. of the mineral railway line.² It is barely discernible today, but would seem to be identical with the "Gilmor-seat castellum or watch-tower" mentioned by Roy, and represented in one of his plans as a small square earthwork abutting on the south face of the Rampart and measuring about 18 ft. each way.³ Gordon describes it as an "Exploratory *Tumulus* . . . only 15 ft. square."⁴
3. *Bonnyside East*.—Cf. *supra*, pp. 162–6.
4. *Bonnyside West*.—Situated half a mile W. of the fort of Rough Castle and just inside the grounds of Bonnyside House.⁵ It measures about 30 ft. from E. to W.⁶ by 21 ft. from N. to S. and stands to a maximum height of 4 ft. 6 ins. It has not been excavated.
5. *Croy Hill East*.—On the westernmost summit of Croy Hill.⁷ It measures about 50 ft. from E. to W. by 30 ft. from N. to S.⁸ A section cut through it at the end of last century, and which still remains open, showed that the turfwork was laid on a rough stone foundation measuring 18 ft. across from N. to S. The transverse measurement was not ascertained, nor was the ground plan of the foundation determined. The maximum height of the expansion was 5 ft. 6 ins., and it was concluded that the Rampart had been erected first and the expansion added subsequently, though probably after only a very short interval.⁹
6. *Croy Hill West*.—On the western slope of Croy Hill, 442 ft. W. of *Croy Hill East* and just below the 400 ft. contour.¹⁰ It measures about 50 ft. from E. to W. by 40 ft. from N. to S., and a section cut for the *Antonine Wall Report* showed that it, too, had been added to the Rampart soon after the latter had been completed. In this case, however, the turfwork rested directly on the living rock.¹¹

¹ Nat. Grid ref. NS/855798; O.S. 6-inch map, Stirlingshire Nxxx NW.; *RWS*, Pl. LIX, 2.

² Not "100 yds." as stated in *RWS*, p. 352. Nat. Grid ref. NS/850799; O.S. 6-inch map, Stirlingshire Nxxx NW.

³ *Military Antiquities*, 163 and Pl. XXXV.

⁴ *Itinerarium Septentrionale*, 69.

⁵ Nat. Grid ref. NS/834798; O.S. 6-inch map, Stirlingshire Nxxxix NE.

⁶ This measurement is only approximate as the junction with the Rampart on the E. is concealed at the present time by a thick clump of rhododendron bushes.

⁷ Nat. Grid ref. NS/728762; O.S. 6-inch map, Dunbartonshire Nxxviii SE.

⁸ Owing to the slope of the hill, the exact limits of the fallen turfwork are not sharply defined at the present time, but the measurements given in the *Antonine Wall Report* (77) seem to be exaggerated.

⁹ *AWR*, section 11, 77–9.

¹⁰ Nat. Grid ref. NS/727762; O.S. 6-inch map, Dunbartonshire Nxxviii SE.

¹¹ *AWR*, section 12A, 84–5, and Pl. I.