The vallum reconsidered.

Swinbank, Brenda

THE VALLUM RECONSIDERED.

BY

BRENDA SWINBANK.

A THESIS
PRESENTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY.

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VOLUME II:
NOTES, APPENDICES, ILLUSTRATIONS.

CONTENTS.

NOTES.

PART I. INTRODUCTION.

1. One of the biographers commissioned to write the HISTORIA AUGUSTA, writing in the late 3rd. century.

2. See 1.

3. Mid-4th. century. Aurelius Victor the younger also agrees with the Elder's statement concerning Severus.

4. circa A.D. 360.

5. Early 5th. century.

6. For a reasoned appreciation of the authenticity of these authors see R.G.COLLINGWOOD: JRS. xi. 42-5.

7. Cassiodorus of the early 6th. century confirms the statements of Victor, Eutropius, Orosius and Eusebius.

8. De Excidio et Conquestu Britanniae, 15.

9. ibid. 18.

10. I v.

11. I xi-xii.

12. RGC. JRS. xi. 47.

13. See Bruce: WB. 2nd. edit. 19. Camden was not the first person since Bede to see and describe the Wall. Sir Christopher Ridley writing in 1572, gives an interesting description. Also in 1574 Samson Erdeswick visited the Wall.

14. 1684-1732 floruit.

15. 10th. edit. HB. 2.

16. AA.[4] x 72.

17. ibid. 1.

18. JRS. xi. 52.

19. BR. 99.

20. BR. 116.

21. Bruce: WB. 2nd. edit. 23.

22. BR. 125.

23. See frontispiece.

24. Hunter was rediscovered by John Rogan, M.A. then of St. John's College, Durham, who expects to consider Hunter's importance at some future date.

25. Itinerarium Septentrionale. 84 et seq.

26. JRS. xi. 53.

27. A recent biography has been written by Stuart Piggott. "WILLIAM STUKELEY: AN EIGHTEENTH CENTURY ANTIQUARY." CLARENDON PRESS 1950.

28. Iter Boreale. 59.

29. JRS. xi. 54.

30. History of the Roman Wall:2nd. edit. Preface.

31. ibid. 140. See below, section 1.

32. ibid. 23.

33. History of Northumberland vol. viii. 307.

34. ibid. 309.

35. First volume published in 1832.

36. Still familiarly known as "Clayton's Wall".

37. "Anthony Hedley: A Centenary Memoir." AA[4]. xiii. 152.

38. The first of a series of Pilgrimages, occuring in 1849, 1886, 1896, 1906, 1920, 1930, 1949.

39. Bruce: WB. 2nd. edit. 18.

40. ibid. 23-4.

41. JRS. xi. 58.

42. AA[2]. xiii. 87.

43. ibid. 181.

44. Per Lineam Valli. 7.

45. ibid. 19.

46. ibid. 57. The connection between this theory and that of Messrs. Simpson and Shaw is clear. CW.[2] xxii. 24.

47. AA.[2] xvi. pages xxvi-xxviii.

48. The references to ,and details of Haverfield's work are given below p.360 NOTES 2,3,4.

49. CW.[2] ix. 390.

50. CW.[2] xxii.1 et seq. See note 46.

51. JRS. xi. 62-66; PSAN. ix. 285.

52. PSAN.[3] ix. 285 et seq; PSAN.[4] iv. 158; v. 256.

53. JRS. xi. 37.

54. Volumes of AA and CW since 1922.

55. JRS. Annual reports on Roman Britain.

56. RGC. JRS.1920. "Hadrian's Wall: A History of the Problem."
" " Book of the Pilgrimage 1930.
" " JRS.1931. Hadrian's Wall, 1921-1930.
FGS.&IAR. JRS.1935. The Turf Wall of Hadrian 1895-1935.
IAR. AA.[4] xvi. 264-77. Hadrian's Wall 1938.
EB. Handbook to the Centenary Pilgrimage of Hadrian's Wall. 1949.
IAR. JRS. 1950. Hadrian's Wall 1939-1949.

PART II A. THE COMPOSITION OF THE VALLUM.

1. AA.[2] xvi. pages xxvi-xxviii. See below, section 2.

2. CW.Old Series. xiii. 453 et seq.
CW. " " xiv. articles x,xv,xx,xxi,xxii.
CW. " " xv, articles xvii,xx,xxxiii,xxxiv,xxxv.
CW.[2] i. 75 et seq.
CW.[2] ii. 384 et seq.
CW.[2] iii. 328 et seq.
CW.[2] iv. 239 et seq.

3. Vizually: Bleatarn, Poltross Burn, the Walton-Castlesteads sector, Housesteads, Craggle Hill to Newtown-of-Irthington. The sectors discovered by Haverfield are noted in the next section "per lineam valli" in the appropriate place.

4. Birdoswald, Carrawburgh, Rudchester, Castlesteads, and Chesters. These excavations are discussed in Part III Ai.

5. See Appendix I and sections 3 to 8.

6. CW.² xxii. 1-82.

7. ibid. 9.

8. JRS. xxx. 164. Compare the two sections reproduced below, no. 9.

9. See no. 10. below.

10. Near milecastle 23. See above p. 210 et seq.

11. See Part III A and B above.

12. See Part V A above.

13. See Part V Bi above.

14. ibid.

15. See Part V B ii. above.

PART II BT PER LINEAM VALLI.

1. 10th. edit. HB. 47.

2. NCH. xiii. 515-521.

3. Northumberland New Series Ordnance Survey 25 inch. The numbers of each map are noted in the margin at the appropriate place.

4. AA⁴ xiv. 227-242.

5. Now in 1954 the Vallum is obliterated by houses. A centurial stone was discovered in situ.

6. 10th. edit. HB. 56.

7. "2nd. " HB. 57.

8. See below, photograph 11.

9. 10th. edit. HB. 63.

10. See photograph 12.

11. See below, plan of area no. 13.

12. See photograph 14.

13. See photograph 15.

14. 10th. edit. HB. 72.

15. See plan 89.

16. See photograph 16.

17. See above p. 206

18. 10th. edit. HB. 73.

19. See photograph 17, and 18 for field beyond.

20. See photograph 19.

21. See above p. 120.

22. See air photograph 48.

23. See air photograph 20 of the sector. Also map reproduced from O.S. 25". No. 134.

24. See photograph 21.

25. See photograph 22.

26. See above p. 202.

27. For views of area see photographs 23 and 24.

28. See photograph 25.

29. See photograph 26 for this feature.

30. For a discussion of this newly discovered fact see above p. 276 et seq.

31. See photograph 27.

32. See photograph 28.

33. AA^4 xv. 303.

34. For discussion of branch road question see above p.254-6

35. See photograph 29.

36. See photograph 30.

37. CW.² xxii. 61 footnote.

38. See below p.153 et seq.

39. See photograph 31.

40. See photograph 32.

41. See air photograph of sector no. 33.

42. See photograph 34.

43. See Appendix IV.

44. See photograph 35.

45. See photograph 36.

46. CW.² xxxiii. 246 et seq.

47. CW.² iv. 239-49.

48. For the significance of the composition of the marginal mound see above p. 276 et seq.

49. Haverfield's excavations CW.² i.75-89; ii.384-92; iii. 328; iv. 239-49.

50. 10th. edit. HB. 208.

51. For Vallum from Glasson to Bowness see CW.² xxxv. 214.

52. 10th. edit. HB. 208.

53. ibid. 209.

PART II C: THE VALLUM AT RIVER CROSSINGS.

1. CW.² xiii. 389 et seq.

2. Not yet published.

3. By kind permission of Captain Keith and his tenant Mr. Heslop.

4. CW.² xiii. 389 et seq. See also section 37.

5. See O.S. 25" no. LXXXII.

6. In 1953 Professor Richmond found that the Vallum ditch came to an end on the west bank of the Irthing. Similar conditions may then be assumed on the east bank.

7. See Appendix II below and sections 38,39 &40.

PART III.A.i. THE VALLUM AND THE WALL FORTS.

1. Bruce 2nd. edit. WB.25.

2. Maclauchlan: Survey of the Roman Wall. 1857.

3. CW.¹ xiv. 413-33.

4. CW.¹ xv. 180-3.

5. ibid. 172-180.

6. CW.¹ xv.354-5; CW.² ii. 385-90; iii. 339-48.

7. CW.² i. 84-88.

8. CW.² iv. 240-4.

9. CW.¹ xv. 182.

10. CW.² xxii 1-81.

11. CW.² xi. 390.

12. See below, Benwell, Housesteads and Birdoswald sections.

13. CW.² xxviii;xxix; xxx; xxxi; xxxii; xxxiii; xxxiv ; xxxv; xxxvi; xxxvii.

14. AA.⁴ xi. 146.

15. CW.² xxxvii. 173.

16. Appendix III; see also above p. 188-195.

17. Seeck's edition; see also CW.² xlix. 38-58 for place names;

Cw². xxxix. 190.

18. AA⁴. xii. 310.

19. NCH. xiii. 485-93.

20. NCH. xiii. 501-14.

21. 10th. edit. HB. 44.

22. NCH. xiii. 521-27.

23. CW². xxxiii. 247-52.

24. AA⁴. x. 101.

25. AA⁴. xi. 176-84.

26. See below, nos. 41,42,43.

27. AA⁴. xi. 176 et seq.

28. ibid. 184.

29. NCH. xiii. 521-7.

30. AA⁴. xix. 35-6.

31. 10th. edit. HB. 48.

32. AA⁴. xix. 19.

33. See below, p. 456.

34. CW¹. xv. 178.

35. See below, no. 44.

36. 10th. edit. HB. 59.

37. CW¹. xv. 177.

38. NCH. x. 468. See below, plan 45.

39. AA⁴. xiv. 161. See below, p. 456.

40. CW². iv. 239-43. See plan taken from O.S. 25", no. 46.

41. See below, no. 47.

42. JRS. xl.

43. See below, no. 48. Housesteads no. 52.

44. Ministry of Town and Country Planning nos. 5245 & 6, April 1946.

45. CW.[2] i. 86.

46. JRS. xxxvi.

47. CW.[1] xiv. 416.

48. CW.[1] xv. 175.

49. See plan reproduced below, no. 49.

50. JRS. xxv. 203.

51. CIL. 620a; EE. ix. 1175- 6; JRS. xxxiv. p. 87; LS. 158. See below, p. 456.

52. AA.[4] ix. 225-6.

53. AA.[4] xi.

54. ibid. 186-8. See plans 50 & 51 below.

55. AA.[4] x. 85.

56. ibid.

57. JRS. xxxvi.

58. See above, p. 189-90.

59. See above, p. 188.

60. AA.[4] viii. 190; no. 2; see below, p. 502.

61. AA.[2] xvii.

62. AA.[4] ii. 197.

63. JRS. xxx. 161; 163-4; see plan no. 53.

64. CIL. vii. 730; LS. 284; see below, p. 457.

65. See above p. 153-62.

66. PHB. 1949. 65.

67. See Abbey, p. 182-187. For general plan see no. 54.

68. PSAN.[4] ix. 250; see below, p. 458.

69. CIL. vii. 758,773,774. See below p. 503.

70. CW.[1] xiv. 415-6.

71. See plan 56.

72. CW.[1] xv. 174-5.

73. See note 13 above.

74. CW.[2] xxxii. 142.

75. CW.[2] xxxiii. 247-52. See section 57 .

76. See Appendix VI.

77. CW.[2] xxxiv. 120-130. See plan of fort no. 55.

78. ibid. 128-9.

79. CW.[2] xxxvii. 171.

80. CW.[2] xxxvi. 158-70.

81. CW.[1] xv. 352.

82. JRS. xxxvi.

83. CW.[1] xv.354-5.

84. CW.[2] i. 77-8.

85. CW.[2] ii. 385-90. See plan 58.

86. 10th. edit. HB. 193.

87. CW.[2] xxxiv. 164-5.

88. CW.[2] xxxiii. 275.

89. CW.[2] xxxiv. 155-7. See below,plan 59.

90. CW.[2] xxxv. 256-8.

91. JRS. xxxi. 129-30.

92. CW.[2] xxiii. 3.

93. JRS. xxviii. See plan 60 below.

94. CW.[2] xxxv. 215.

95. Appendix III, p.234-6.

96. CW.[1] xvi. 80-103.

97. JRS. xxxviii. 83.

98. Appendix III, (p. 233-4.)

99. CW.[2] xxxi. 140.

PART III A.ii. GREAT CHESTERS.

1. See below, Appendix IIIW.

2. As was suggested in Appendix III, (p. 227)

3. Air photograph no. 61 below shows the four ditches quite clearly.

4. See plan 53.

5. See below, nos. 62,63.

6. See photograph nos. 64-8.

7. See photograph nos. 66,67.

8. See photograph 68.

9. See note 5: compare the two elevations.

10. See photograph 67.

11. AA.[4] xi. 187.

12. See Appendix IX.

13. See no. 63.

14. See photograph 69.

15. See air photograph 61.

16. See section 70.

17. See plan 71 and photograph 72.

18. AA.[4] ii. 197.

19. A photograph is reproduced below, no. 73.

20. The following measurements are taken from Mr. Simpson's excavations notes. For a probable section of the ditches see no. 74.

21. Hence the difficulty in producing an accurate section, see note 20.

22. See below for a plan of the fort reproduced from AA.[2] xxiv. 19. The approximate line of the four western ditches are marked in pencil. No. 135.

PART III. A. iii. CARVORAN.

1. Birley: PHB. 1949. 62-5.

2. For the plans of the Vallum and these forts, see nos. 41, 45, 54, 55, 58. For the Vallum at Carvoran see also air photograph 75.

3. PHB. 63. for the possibility of an earlier fort on the site. The idea that such a fort was on a different alignment was not expressed in print.

4. CW.[2] xxii. 59.

5. A remarkable series of inscriptions erected by a prefect Flavius Secundus has been discovered at Carvoran. (PSAN.[4] ix. 250-5; JRS. xxxi. 142 ff.) The same prefect erected a fine altar for the health of L. Aelius Caesar, i.e. A.D. 136-7. Thus the inscriptions are approximately dated, though they could be earlier. They are especially interesting because they record the building in stone of so many feet of rampart. In addition, a fragmentary building inscription of Hadrianic date was discovered.

6. Carrawburgh fort, built over the filled-in Vallum ditch, has produced a building inscription dateable to circa A.D. 130-3.

7. That Carvoran fort belongs to the Stanegate series of forts rather than to the Wall, is evident from its situation.

e

8. There are five crossings visible in the east-west portion of the diversion.

9. PHB. 65.

10. See below, section 76.

11. See section 76.

12. See photograph 77.

13. See photograph 78.

14. See photograph 79.

15. See photograph 80.

16. JRS. xxx. 164.

17. See note on Soil Analysis, p. 187.

18. See note 5.

19. See above, p. 183.

20. CW.[2] xxxvii. 158 et seq.

21. JRS. xl. 55.

22. CW.[2] xxii. 9-11.

23. Bruce: 3rd. edit. HB. plate at p. 241.

24. Britannia Romana.

25. The writer owes this information to Mr. A. Johnston B.Sc. research student at King's College, Newcastle-on- Tyne, and wishes to thank him for his interest and help.

86.

PART III. A. iv. THE WALL SEQUENCE AND ITS DATING.

1. For general argument, see JRS. xl.

2. CW.[2] xxxv. 229. See below, p. 459.

3. 10th. edit. HB. 130.

4. ibid. 133. Two such inscriptions have been found at

Hotbank. The complete example is reproduced below, and Horsley's Hadrianic fragment is part of the second.

5. ibid. 144.

6. The details of this thesis have not yet been published.

7. Bewcastle inscription CIL.vii. 978; Bewcastle:CW.² xxxviii 195-287; Netherby CIL. vii. 961; Birrens: PSAScot. lxxii. 275f.

8. CW.² xlvii. 78-127.

9. CIL. vii. 362. See below, p.459.

10. Gentlemen's Magazine. xi.(1741). 650.

11. JRS. xl. 50.

12. IAR: Roman Britain. 16.

13. EB: Roman Britain and the Roman Army: Collected Papers. 38.

PART III. B. i. THE VALLUM AT MILECASTLES.

1. CW¹. xv. 352. See plan 82.

2. In 1953 Professor Richmond discovered that the Vallum ceased abruptly after diverging slightly to avoid contact with the south-west corner of milecastle 49. Thus any suggestion that the Vallum diverged merely to descend the cliff is completely discountenanced.

3. CW.² xxxv. 220.

4. CW.² xxxvi. 158-70.

5. The diversion is still obvious on the surface. See below air photograph 33.

6. CW.² xxxvii. 157-66. See plans reproduced below, no. 85.

7. ibid. 166-77. See plan 83.

B.B. ii.

1. See below, photograph 87.

2. CW.² xxxvii. See above.

3. See photograph 88.

B. iii.

1. See below, plan 88.

2. See photograph 16.

3. For key to sections and general section of the excavation see below, nos. 90, 91.

4. See photograph nos. 92-5.

5. See photograph nos. 96-98.

6. See below, section 99 and photograph 100.

7. Wheel gauge of 4feet 8½ inches.

8. See section 101.

9. See section 102.

10. See photograph nos. 103, 104.

11. See photograph 105.

12. See section ~~xx~~ 106 and photograph nos. 107-9.

13. See section 110.

14. SEE section 111.

15. See general plan of excavation, no. 112.

B. iv.

1. High House, Turf Wall milecastle 50.

PART III. C. COURSE OF THE VALLUM AND THE WALL IN GENERAL.

1. CW.[2] xxii. 17.

2. AA.[3] ix. 34.

3. PHB. 1949. 24.

4. See ~~above~~, p. 246 et seq.

5. Memoir. 90.

6. AA³. ix. 65.

7. See photograph 115.

8. See photograph 116.

9. See photograph 117.

PART IV. THE PURPOSE OF THE VALLUM.

A.

1. CW.² xxii. 4.

2. CW.² 1. 14.

3. Encyclopaedia Britannica edit. xi. vol. iv. 586.

4. PSAN.⁴ v. 256.

5. CW.² xxii.

6. ibid. 5.

7. ibid. 7.

8. ibid. 15.

9. ibid. 38.

10. Oxford History of England vol. I: Roman Britain and the English Settlements.

11. AA.⁴ xi. 146.

12. Oxford History, 2nd. edit. 133.

13. ibid. 134.

14. That the Vallum was an unmilitary boundary.

B i and ii.

1. AA.⁴ xvi. 264.

2. 10th. edit. HB. 30.

3. JRS. xl. 52.

4. PHB. 1949. 24. p. 13.

5. Memoir. 89.

6. CW.^{2} xxii 18.

7. PSAN.^{2} v. 182.

8. Britannia Romana. 148.

9. Memoir. 40. footnote 4.

10. See above, p. 312.

11. See above, p. 257-9

12. Memoir. 43.

13. See photofgraph 118.

14. See photograph 119.

15. CW.^{2} xxxvii. 170.

16. Not hitherto published.

17. See section 4.

18. Not hitherto published.

19. " " ".

20. Mr. Simpson kindly gave to the writer a copy of the geological analysis by Professor Tomkeieff of King's College Newcastle.

21. See above, p.172-86.

22. Appendix IV. CW.^{2} lii. 46-54.

23. See photograph 123.

24. See photograph 118.

25. See above, p. 230.

1. CW.[2] 1. 43-53.

2. ibid. 48.

3. ibid. 49.

4. ibid. 50.

5. ibid. 51-2.

6. AA.[3] v. 213. See plan 120 below.

7. CW.[2] 1. 53.

PART V. A. FORMATION OF THE CROSSINGS.

1. CW.[2] xxii. 44-74.

2. ibid. 45.

3. JRS. xxx. 164. See section 9.

4. See above, p. 172.

5. As was thought in 1922 by Messrs. Simpson and Shaw.

6. PSAN.[4] ix. 298.

7. AA.[4] xvi. 234.

8. 1948: The Building of Hadrian's Wall. But the fact that the only centurial stones found from the Vallum were not removed by the crossings system, detracts from the argument.

9. AA.[4] xiv. 227-242. See Appendix VIII.

10. AA.[4] xv. 303.

B. i. THE MARGINAL MOUND PROBLEM.

1. CW.[2] xxii. 62-3.

2. ibid. 66.

3. 10th. edit. HB. 31.

4. JRS. xl. 54.

5. Reproduced below.

6. See above, p. 65 et seq.

7. CW.2 xxii. 57-62.

8. JRS. xxx.164.

9. See Appendix V.

10. See sections 3-7:- At Appletree and Harehill the upcast of the marginal mound was noticeably different from that of the two principal mounds, and may be the material cleaned from the ditch.

11. CW.2 xxii. 66.

12. JRS. xl. 54.

13. Excavations 1952.

14. See section 128.

15. See section 121.

16. CW.2 xxii. 61.

17. ibid. 63.

~~k~~.

B. ii. THE MILITARY WAY.

1. CW.2 xxii. 18.

2. ibid. 65.

3. See below, no. 136.

4. See photograph 129.

5. See Appendix V and photographs 126, 127.

6. See above, p. 340.

7. See above, p. 332.

8. 10th. edit. HB. 32.

B)iii. THE MARCAN OCCUPATION OF THE WALL.

1. See above, p. 274

2. See above, p. 332.

3. Pausanias: Description of Greece. 8, 43.

4. EE. ix. 1230.

5. EE. ix. 1108.

6. EE. ix. 1163. Text reproduced below, p. 501.

7. AA⁴. xxi. 239. See below, p. 502.

8. AA⁴. viii. 190. See below, p. 502.

9. CIL. vii. 758, 773, 774. See below, p. 503.

10. Not all were completely abandoned in A.D. 140.

11. CIL. vii. 731. See below, p. 504
A fragmentary inscription from Housesteads is also reproduced. This is possibly of Marcan date. If so, then Housesteads must be drawn into line with Great Chesters.

12. 10th. edit. HB. 26.

13. The ceramic evidence has been discussed by Mr. Gillam in connection with the epigraphic in: "Calpurnius Agricola and the northern frontier." D.&.N. x. part iv. 1953. 359-375.

PART V.C. DISUSE OF THE VALLUM AT FORTS.

I. Birdoswald.

1. Based on the excavation reports published in CW². xxix-xxxiv.

2. See [illegible], p. 322-4.

ii. Benwell.

1. AA⁴. xi. 177.

2. See plan 132.

3. AA⁴. xxv. 52.

4. AA⁴. xix. 35.

5. These words were used by Mr. Charlton in his excavation notes.

6. Not a building later than the first erection over the Vallum filling as has hitherto been supposed. See AA⁴ xi. 179-80.

7. ibid.

8. ibid.

9. ibid. 181.

10. See Appendix VII below for descriptions and drawings.

11. AA⁴ xix. 19.

12. AA⁴ xxv. 52 et seq.

13. See plan 132.

14. This must not be confused with building A on the reproduced plan of the 1933 report. The following details concerning new building A are from Mr. George's notes on the excavations of 1938, hitherto unpublished. A new plan of the structures over the filled-in Vallum is now essential.

15. AA⁴ xi. 181.

16. ibid.

17. ibid.

18. ibid. 179.

19. AA⁴ xix. 35-7.

iii. Housesteads.

1. AA⁴ ix. 222 et seq.

2. AA⁴ xi. 188.

iv. Great Chesters.

1. See above, p. 162.

v. General Conclusions.

1. Benwell, Housesteads, Great Chesters, Birdoswald.

2. See photograph 48.

3. See above, p. 132.

4. See above, p. 146.

PART V. D. DISUSE OF THE VALLUM AT MILECASTLES.

i. In the Turf Wall sector.

1. CW.[1] xxxvi. 158-70.

2. CW.[2] xxxvii. 157-77.

3. See plan nos. 83, 84.

4. See plan 85, section 86.

5. See Appendix VI .

6. See above, p. 188-95.

7. CW.[2] xxxvii. 167.

ii. In the Stone Wall sector.

1. See above, p. 204-5.

2. See general section 91 below.

3. See photograph 113.

4. See general plan no. 112.

5. See photograph nos. 92-5.

6. Nevertheless, unless the ditch grew narrower at the original causeway, the original rock must have projected considerably north of the normal ditch slope.

7. See photograph 114.

8. See photograph nos. 96-8.

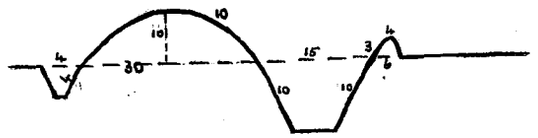
9. See above, p. 217.

iii. Secondary milecastle causeways.

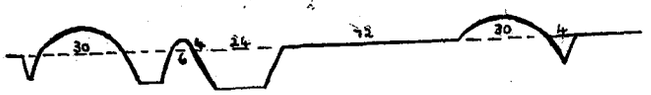
1. See above, p. 304-11.

2. How the south mound depression opposite the causeway of milecastle 23 fits in with this thesis, is not certain. See above, p. 345-6.

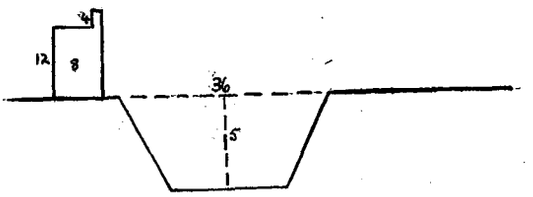
HUTTON: AGRICOLA'S WORK.



HADRIAN'S WORK.



SEVERUS' WORK.

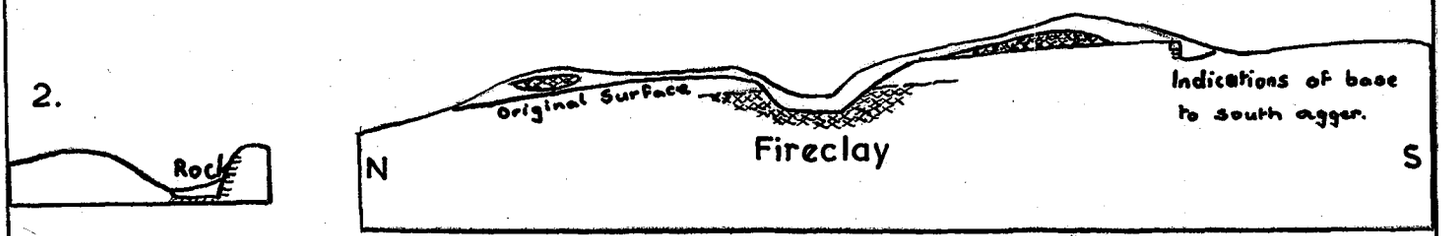


Section 1.

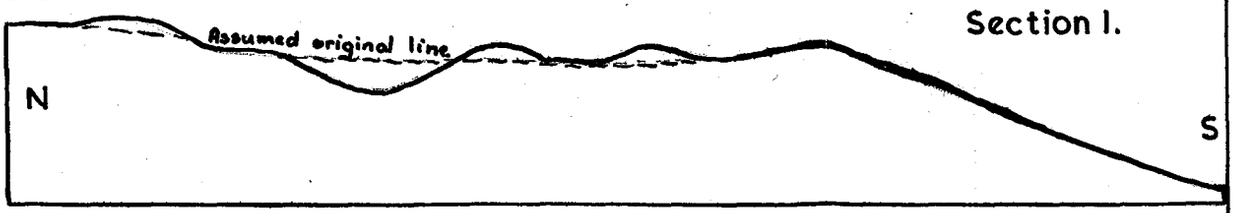
VALLUM AT HEDDON.

Section 1.

2.

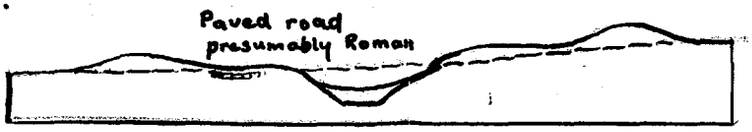


VALLUM AT DOWN HILL.



3.

Scale of feet.



Section 2.

APPENDIX. I.

Notes on the Composition of the Vallum

1. Section of 1894 at White Moss, Cumberland. (see below, section 3.)

The section exhibited a very small ditch, only 5 feet wide, a mound on either side of the ditch set back from it by only a few feet, and two small outermost mounds. Mr. Simpson pointed out that because the distance between the two outer mounds is the normal distance between the north and south mounds, they "establish themselves as original and not accidental features" as the excavation of 1894 was inclined to suggest. He was led to the further conclusion that the inner two mounds were composed of material brought from a distance and not dug from the ditch. The fact that the mounds were kerbed by turves, suggested that they were constructed for some special purpose, probably "to carry the ditch, artificially raised like a railway upon an embankment, across ground through which it could not have been dug except at the certain price of continual subsidence." It was noted that they ended where the subsoil again became stable. The section reveals a ditch, clearly cut in reddish-yellow sand to an angle approaching that at Benwell causeway and therefore surprisingly acute for the insubstantial subsoil. The ditch is considerably filled with black peaty material and dark-grey sand. The depth of the ditch is not known. The innermost mounds, quite clearly defined, are composed of yellow and grey sand and are revetted on either side by remarkably distinct turf kerbing. The sandy core of the mounds is nearly 5 feet wide, but the kerbing between 5 feet and 8 feet wide on either side of the mound. Such kerbing is by no means infrequent on the Vallum and cannot therefore support a theory attributing a special purpose to the mounds on this account. The mounds are perfectly normal in composition, though their position of close proximity to the ditch is indeed puzzling. Whether the sand of the mounds has been brought from elsewhere is a matter for conjecture, and it may rather represent disturbed sand dug from the ditch, as was the normal practice. It is justifiable to argue that the small amount of sandy material in the mounds could have come from the ditch, small as it is at this point, for the depth of the ditch is now known. Further Mr. Simpson's suggestion that the small outermost mounds are composed of the material dug from the ditch is quite untenable since the section shows plainly that they are composed only of surface peat and can therefore scarcely be of Roman manufacture at all. One wonders whether a true four-mound section can now be deemed to exist. Is not the Vallum here simply a small, narrow ditch bordered quite closely by two turf-revetted mounds, the outer two diminutive mounds being purely "accidental"?

2. Section of 1894 at Bleatarn, Cumberland. (section 4.)

A four-mound section was exhibited and the Vallum was 106 feet across. The ditch was thought to be only 7 feet wide. A study of the section shows clearly that the outermost are the normal mounds of the Vallum. The south mound rests on yellow clay subsoil and is composed of grey sand and gravel, presumably from the ditch. There appear to be faint traces of turf work which may be the scanty remains of an original turf revetment. The south berm of the Vallum was of red sandstone rock, covered by humus and turf represented in the section by grey clay and black peat. The subsoil recommences on the north side of the ditch as yellow gravel. The distance between this and the clearly defined south lip is roughly 16 feet (not 7 feet), quite a normal measurement for the ditch. The ditch itself is filled with black peat, but it is impossible to say whether this is a natural accumulation or a deliberate peat filling. The north mound follows the normal pattern in composition and dimensions though the layer of black peat beneath it is more than 1 foot thick. This may represent the old turf-line with superimposed turf kerbing. Haverfield seems to have been mistaken concerning the width of the ditch by supposing that all the mounds and all the black peat were contemporary. The grey sand mixed with grey clay on the south berm covers, in part, the black ditch filling also. It can then only represent an accumulation of silty material and is not necessarily Roman. It is quite unlike the three other mounds in composition and may therefore be discounted. The mixture of grey and yellow clay, black peat, grey and yellow sand on the north berm presents a very different problem, and may well represent a cleaning out of the Vallum ditch, before the dense black filling was allowed to accumulate. It is likely to be an instance of the "marginal mound" on the north berm of the Vallum instead of on the south. It seems probable that a convincing northern ditch slope would have been revealed if the excavation had been deepened by a foot.

3. Section of 1894 at Gilsland Vicarage (section 5.)

Six trenches were dug on the Vallum. The first, reproduced here, exhibits the north mound, 20 feet wide at its base, composed of reddish-grey gravel mixed with large stones on a bed of reddish clay. An unusual platform of flag stones was revealed at its northern edge upon which some well-dressed stones were lying. Because this platform

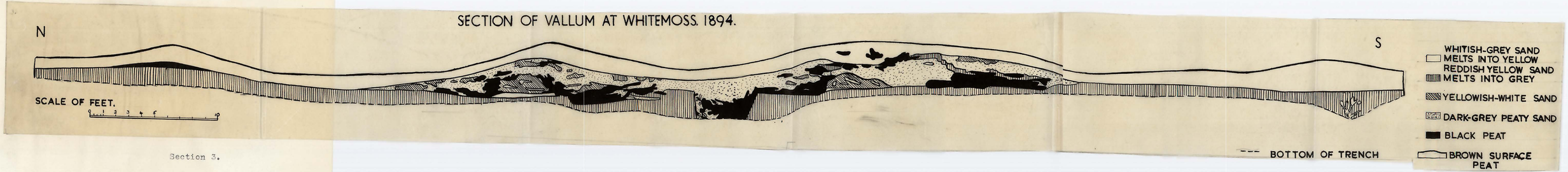
is embedded into the mound upcast it is likely to be later than the construction of the mound and therefore not a stone revetment. Perhaps this feature may be drawn into line with the kiln discovered on the south berm of the Vallum in High House Paddock. Four other trenches showed heaps of stones in the centre of the north mound. Haverfield considered this feature to be a core used to strengthen the Vallum on the slope. A recent analogy, though not on a slope, comes from the south mound of the Vallum at Stanley Plantation milecastle 23.

4. Section of 1895 at Appletree (section 6)

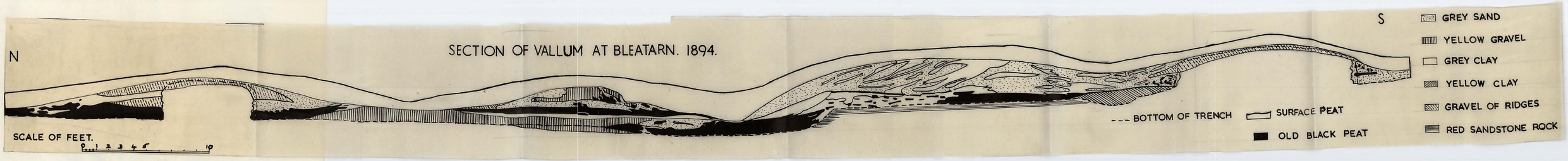
The section across the Vallum at Appletree exhibited mounds of reddy, mixed upcast, a very wide ditch of the "recut" type and a token marginal mound which was regarded as being "much worn down". Immediately south of the north mound a layer of rough stones was found some 7 feet wide. It was thought to be debris of a field-wall "which seems once to have stood there". It is worth considering whether this is in fact another instance of the "patrol track" which has occasionally been found connected with the south berm, but never before with the north. It is significant that Mrs. Hodgson suggested that the marginal mound at Appletree may be the result of occasional cleanings out of the ditch, for the upcast was mixed and very different from that in the two principal mounds.

5. Section of 1895 at Bleatarn, Cumberland. (section 7)

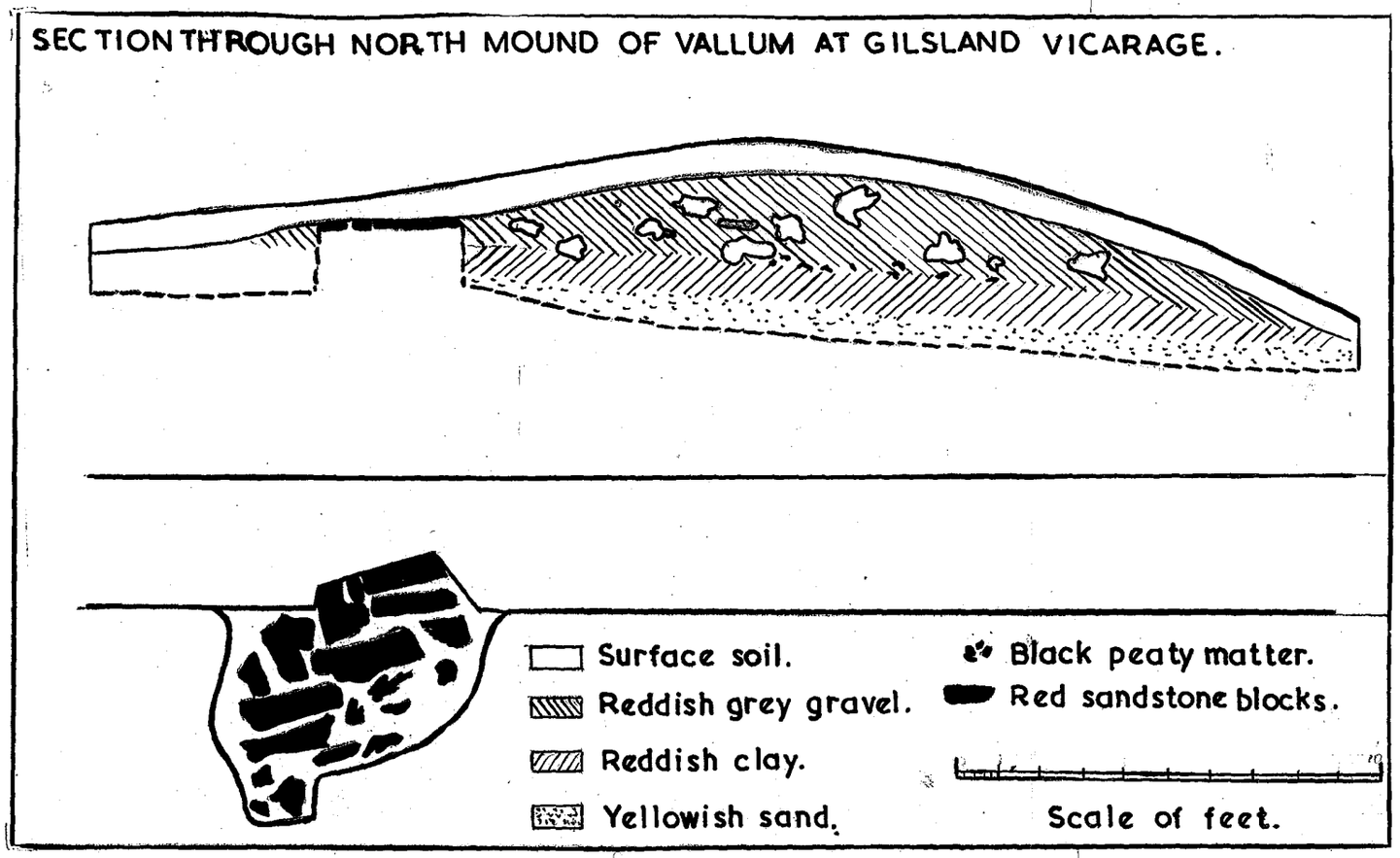
Haverfield deemed the section here reproduced to be disappointing. The ditch is partially cut through red sandstone rock and its profile is quite distinct. It is 25 feet wide at the top, with gently-sloping sides and only 5 feet deep, if the trench reached the subsoil. The lack of mounds may be accounted for by post-Roman removal, but it may be that the section has cut through a "crossing", the mounds being removed at that point. The ditch is filled with bluish-grey sand. The berms are of reddish-grey sandy loam. The reddish upcast across the whole section contains "waterworn stones and gravels" and one wonders whether this might represent the slight road-metalling of a "crossing".



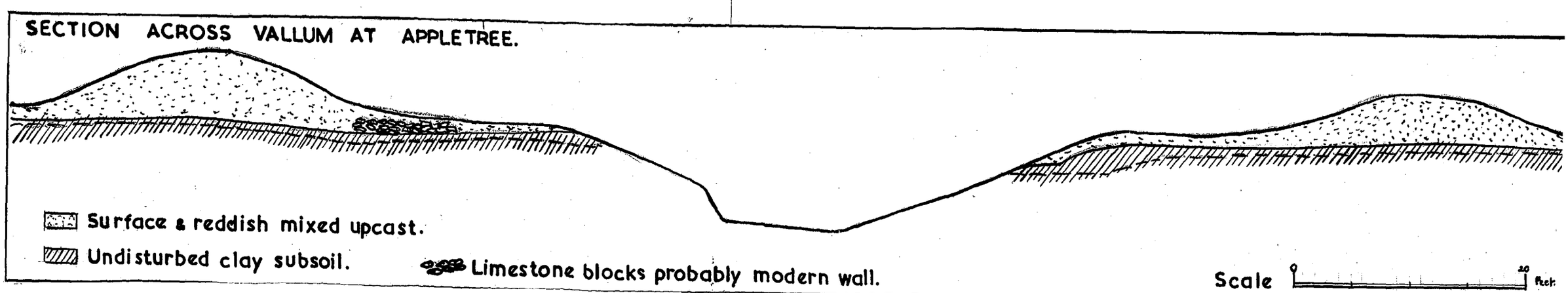
Section 3.



Section 4.



Section 5.



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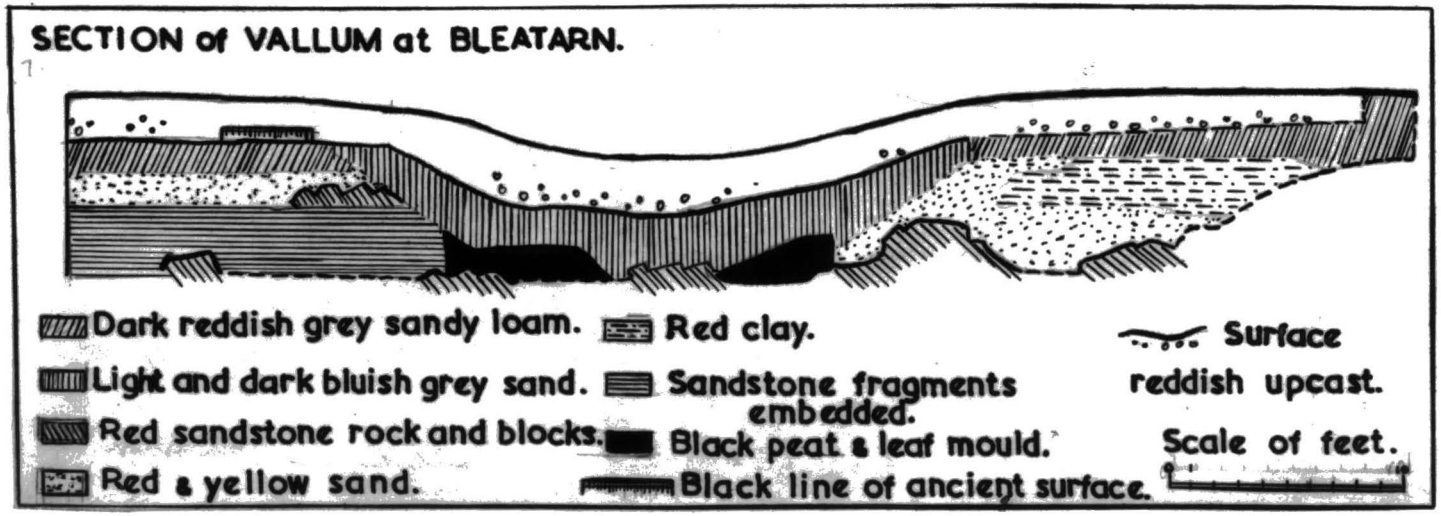
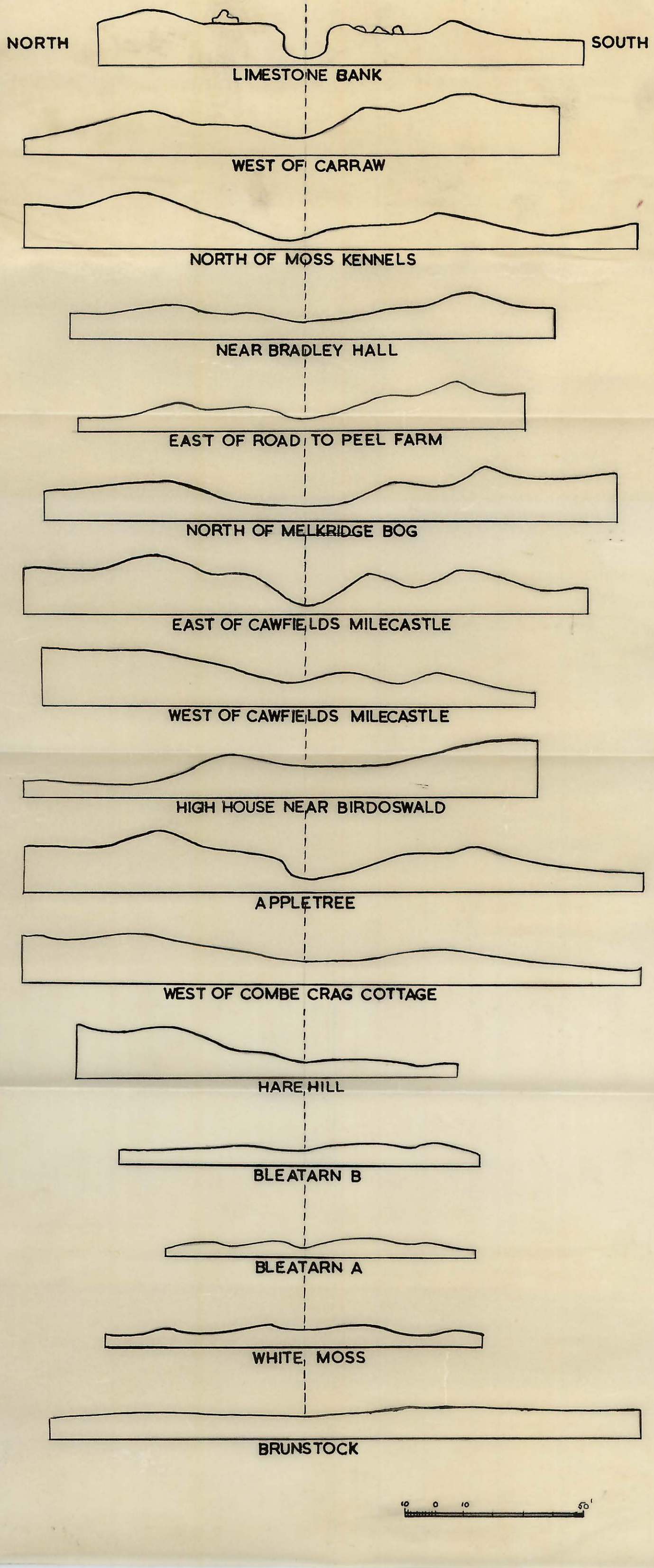
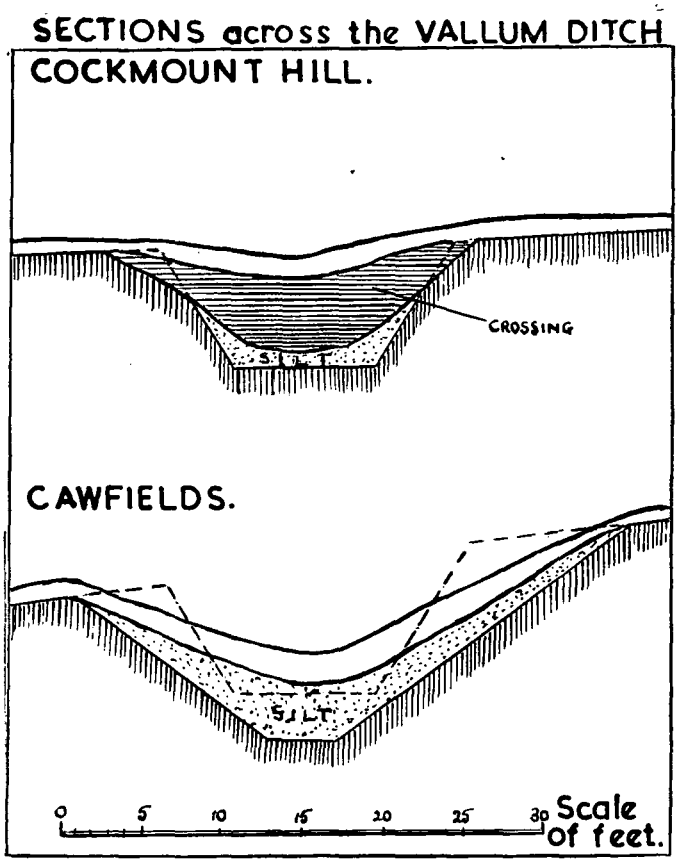

SECTION of VALLUM at BLEATARN.
Dark reddish grey sandy loam.
Light and dark bluish grey sand.
Red sandstone rock and blocks.
Red & yellow sand.
Red clay.
Sandstone fragments embedded.
Black peat & leaf mould.
Black line of ancient surface.
Surface reddish upcast.
Scale of feet.

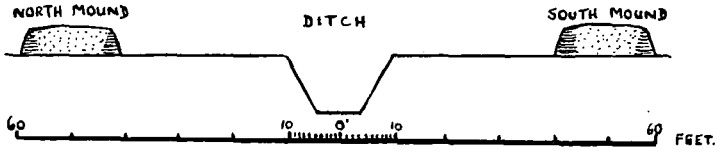
Section 7.

COMPARATIVE DIMENSIONS OF THE VALLUM.





Section 9.



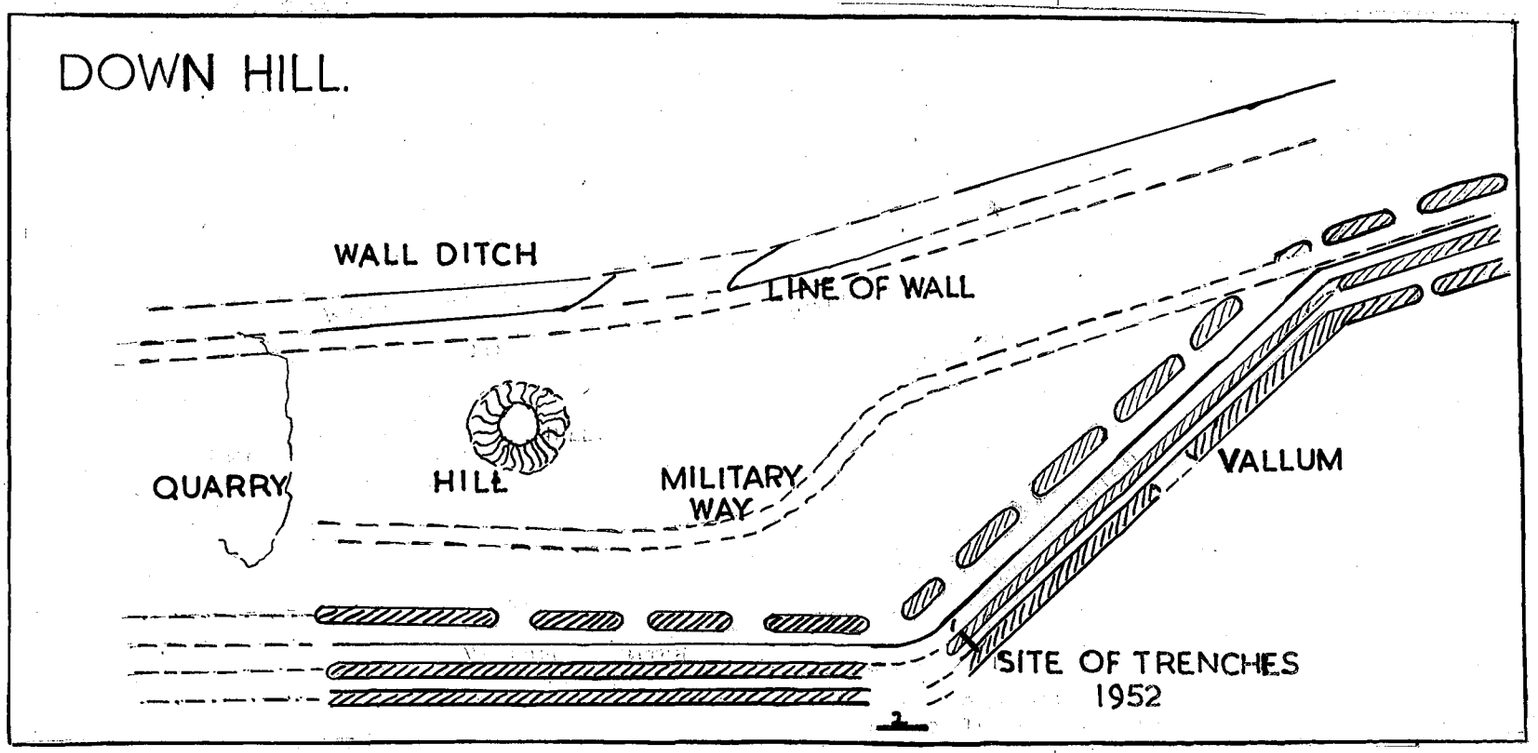
Section 10.

Photograph 11, 12.

12. VALLVM at WALLHOUSES.

11. WALL and VALLVM at GREAT HILL, HEDDON-ON-THE-WALL.

Plan 13.


DOWN HILL.
WALL DITCH
LINE OF WALL
QUARRY
HILL
MILITARY WAY
VALLUM
SITE OF TRENCHES 1952

Photograph 14, 15.

15. VALLUM ON DOWN HILL, from the west.

14. VALLUM APPROACHING DOWN HILL.

Photograph 16.

(Ian Kemp) VALLVM CAUSEWAY, MILECASTLE 23 : looking east.

Photograph 17.

(Ian Kemp) VALLUM CAUSEWAY, MILECASTLE 25: looking west.

Photograph 18.

VALLUM WEST OF CODLAW HILL: looking west.

(Ian Kemp)

Photograph 19.

VALLVM APPROACHING THE NORTH TYNE:
looking west.

Photograph 20.

(Dr. Sr. Joseph.) THE LIMESTONE CORNER SECTOR.

Photograph 21.

SOUTH SIDE OF VALLVM ASCENDING LIMESTONE BANK.
(Ian Kemp)

Photograph 22.

VALLVM CAUSEWAY, MILECASTLE 30: looking west.
(Ian Kemp)

Photograph 23.

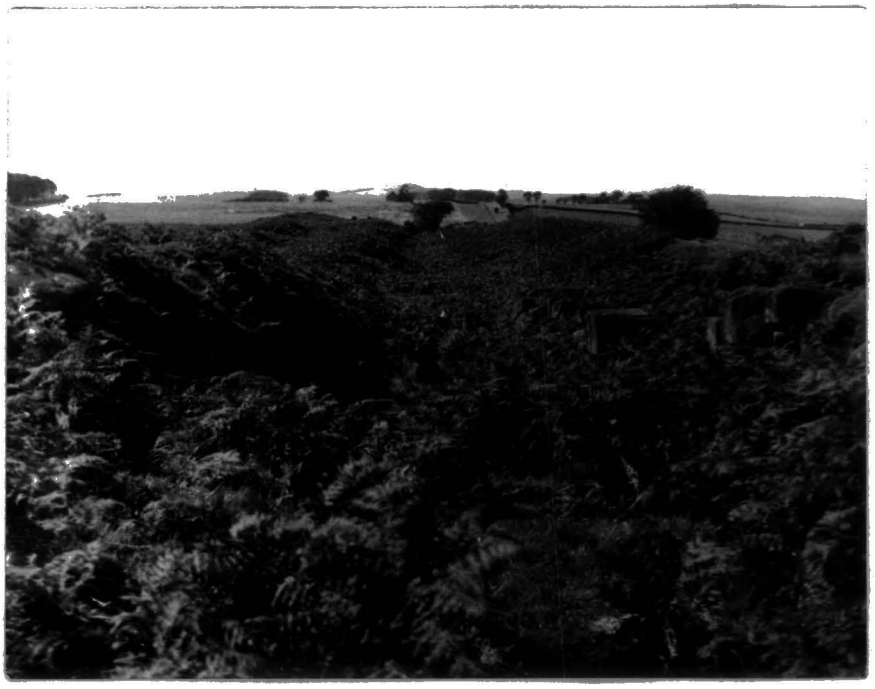
(Ian Kemp) VALLUM AT LIMESTONE CORNER, looking south-west.

Photograph 24.

VALLVM AT LIMESTONE CORNER, looking north-west.

(Ian Kemp)

Photograph 25, 26.



25. CROSSINGS IN THE VALLUM DITCH WEST OF LIMESTONE CORNER: looking west.

26. CROSSINGS IN THE VALLUM DITCH WEST OF LIMESTONE CORNER: looking north-east.

27. VALLVM WEST OF CARRAW:
looking east.

28. VALLVM APPROACHING SHIELD-ON-THE-WALL.

Photograph 27, 28.

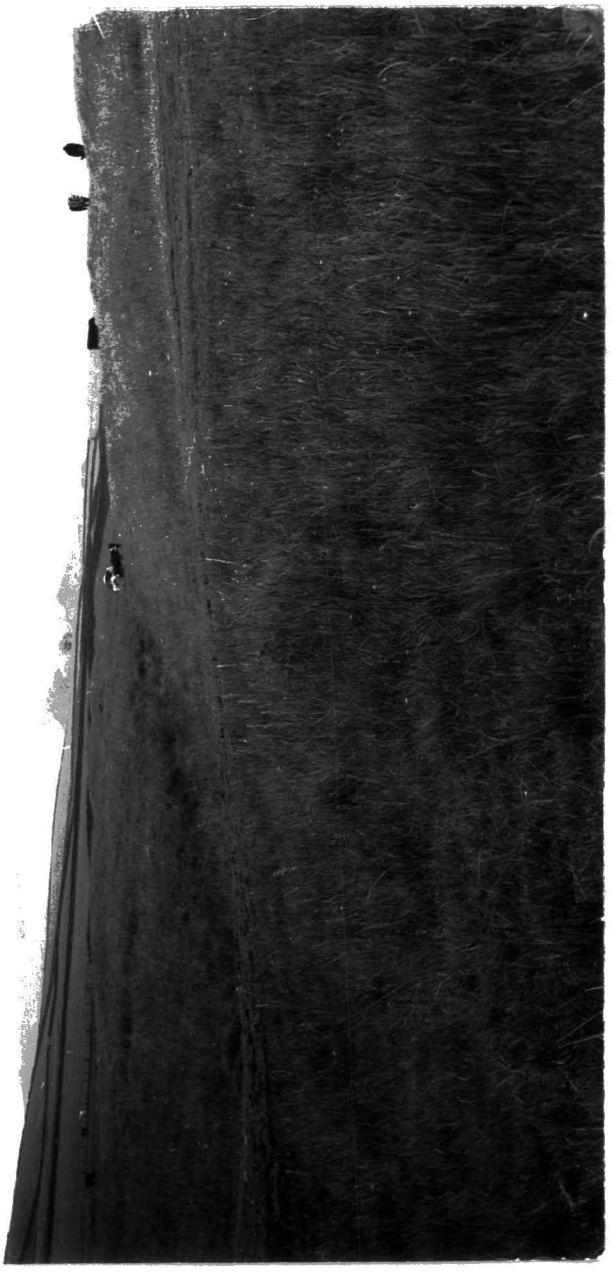
Photograph 29.

(Lankamp) VALLUM AT CAWFIELDS, looking south-east.

Photograph 30.

(Ian Kemp) VALLVM CAUSEWAY, MILECASTLE 42 : looking east.

Photograph 31.

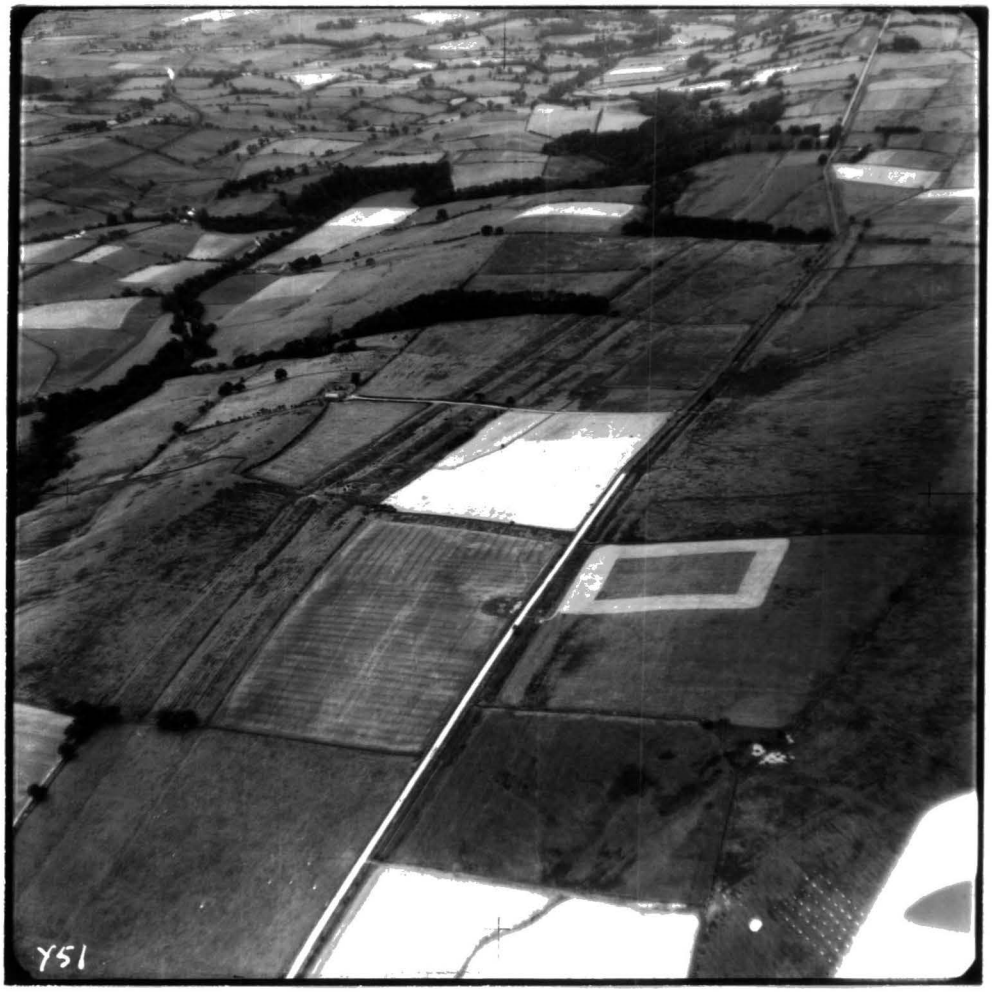


(Ian Kemp) VALLUM SOUTH OF COCKMOUNT HILL, looking east.

Photograph 32.

VALLVM DIVERSION, CARVORAN.

Photograph 33.



(Dr. St. Joseph) THE HIGH HOUSE-WALLBOWERS TURF WALL SECTOR.

Photograph 34.

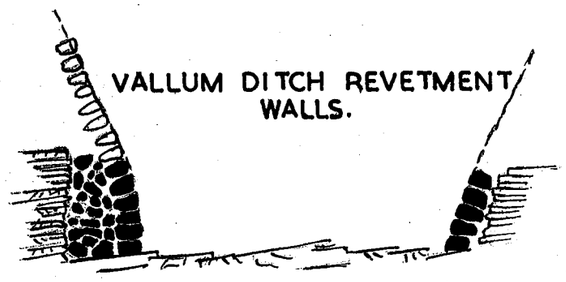
(Ian Kemp) VALLUM IN HIGH HOUSE PADDOCK, looking east.

Photograph 35.

(Lunkemp) VALLUM WEST OF HIGH HOUSE PADDOCK, looking west.

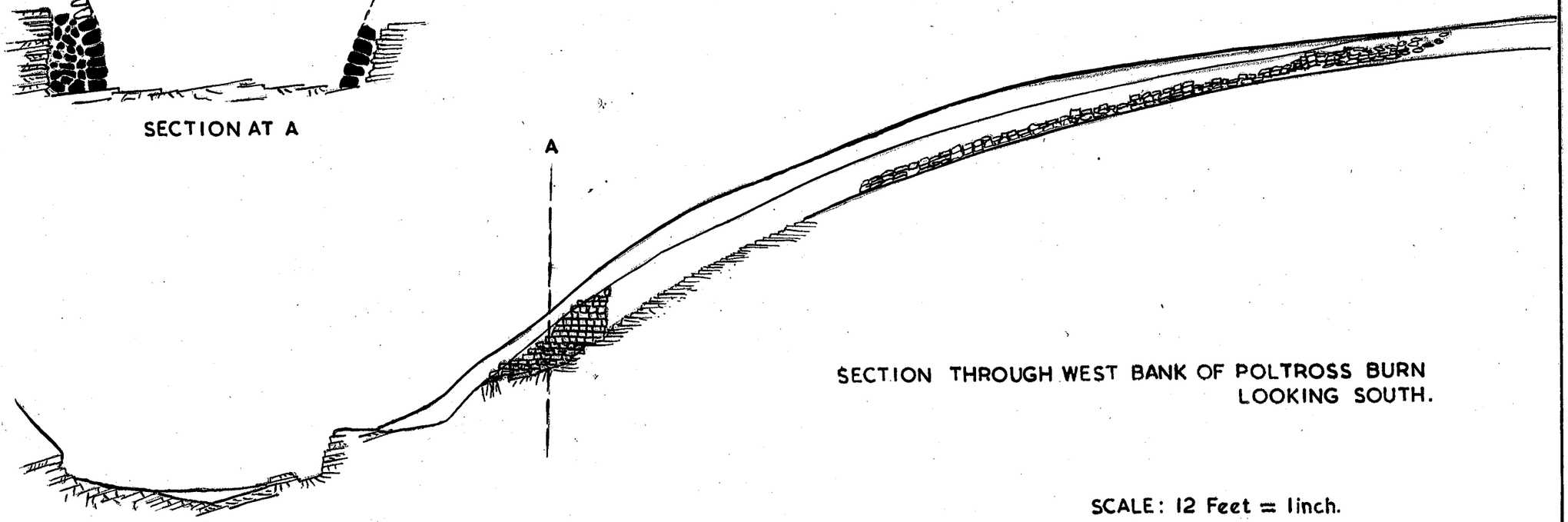
Photograph 36.

VALLUM APPROACHING APPLETREE:
looking south-east.



VALLUM DITCH REVETMENT WALLS.

SECTION AT A



SECTION THROUGH WEST BANK OF POLTROSS BURN LOOKING SOUTH.

SCALE: 12 Feet = 1inch.

Appendix II

The Vallum at the North Tyne Crossing

Trench I[1] was placed east of the fence gateway, the aim being to establish firstly the precise line of the ditch of the Vallum, and to cut a section, at least intermittent, across the north mound, berm, lip and the south lip, berm and mound of the earthwork.

The trench was dug largely to the north of the fence, when contrary to expectation the spade soon revealed a well-defined south lip lying wholly to the north of the fence. The lip was marked by a limestone boulder set in clay, whilst the slope for the short distance of excavation down it was smeared with clay. It was impossible to trace the lip further down because of a huge main field-drain. A gap of approximately 8 feet was left and the trench continued to discover the north lip. Soon soft reddish sandy soil, mixed with boulders and freestones, was reached, which was thought to be the filling of the ditch. The trench was dug quite deep at approximately the place where the north lip was expected. The huge boulders made digging hard, but at length quite deep down a slight edge of gravel was discovered. It was thought to be part of the north slope of the Vallum ditch, but it was clear then that the north lip must have either weathered or have been washed away. A small trench just south of the fence was dug to establish the fact that the subsoil of the south berm was a compact, sandy loam; no metalling of the berm was apparent The position of the south lip suggested strongly that the Vallum was turning slightly to the north as if to approach the Wall.

Trench II[2] was placed just west of the gateway and under the shade of the row of trees. The aim was to trace the two lips and south berm of trench I nearer the old river course. A large tree threatened to impede an examination of the south berm; indeed it seemed likely that the row of trees and marshy ground west of it would prevent the investigation of the junction of the Vallum with the old river-course. Contrary to expectation the south lip was discovered much further north than had been anticipated. 13 feet of the south berm were uncovered during the search for the lip, and no sign of road-metalling appeared. The subsoil was solid, reddish soil. It sloped

1. See section 38.
2. See section 39.

down gradually, its line emphasised by the presence of stones representing ditch-filling. On the north side what was thought to be the north lip on further investigation proved to be sandy soil mixed with tight-packed stones, reminiscent of ditch-filling. Eventually a 1 foot thick layer of sand appeared, and below that, black material mixed with small stones looking forcibly like river bed. In the loose sandy fill, a fragment of grey medieval pottery was discovered. Excavation in the centre of the trench revealed nothing but huge boulders, stones and sandy soil. Since such stones occurred only on the south lip and not on the berm, the south lip of the ditch seemed quite genuine. But it was unaccountably odd that nothing really like a ditch lip appeared on the north side.

A return was made to trench I in an attempt to uncover the north berm if the gravel slope were in fact the north slope of the ditch. To the north of the gravel slope, boulders, stones and loose soil recurred exactly as in the supposed filling. If the gravel had been part of the north slope, a point which was yet undeterminable, the greater part of the north slope must undoubtedly have been washed away.

Trench III was placed in between trenches I and II in an attempt to join the south lip found in either trench, since the Vallum ditch was apparently making a remarkable turn northwards. The lip was traced, running diagonally across the trench, the line of the slope emphasised by a stone fill. There seemed to be no doubt that the south lip had been traced in three places, and that it made a surprising turn to the north.

Trench IV was cut in the area east of the "filling" of the ditch, in an effort to discover the line of the north lip of the Vallum before it approached too closely the river-bed. The lip and slope were soon revealed, composed of a yellowish sandy gravel. Tightly-packed stones commenced with the slope downwards. Its position seemed consistent with the known line of the Vallum, and moreover with the supposed gravel lip of trench I.

Trench V was placed between trenches I and IV to follow the line of the north lip. There was no sign of it but instead a thick layer of gravel, quite level, set upon a thick layer of black material, which was comparable to that of trench II, looking suspiciously like river bed material.

It is unlikely to have been ditch material because of the line of the north lip in trench IV. The necessary conclusion was that west of the obstruction of the ditch noted as a "filling" the north lip had disappeared yet the south lip remained.

Trench VI was dug as near as possible to the row of trees bordering the old river course, with the aim of finding once more the south lip of the Vallum ditch, to discover whether it continued on its curve northwards or abruptly ended. If it proceeded it would be impossible to trace it further. No ditch lip emerged, though in trench II only a yard to the east it was clearly there. Topsoil of a light sandy material was dug through, containing no stones at all, unlike all other trenches. 3 feet 4 inches below ground level grey, silty sand appeared. It was clearly a natural water deposit.

In between trenches IV and V but covering the line of the south lip, a trench[3] was cut in the "filling" in an attempt to discover the south lip of the Vallum ditch before it commenced its sudden turn northwards. The trench was dug beneath the fencing. The sandy topsoil gradually became more solid and flecked with orange. At roughly 4 feet below ground level a thick greyish black layer with a clayey feel appeared, definitely rising considerably to the south. In the northern half of the trench it ran roughly level. Below this was a layer of clean yellow gravel rising towards the south, which seemed likely to be the ditch lip. But further north it became roughly level and definitely dirty. In and below it stones, both large and small, dressed and undressed, were revealed. On the south another layer of dirty grey silt appeared, below the gravel, and it produced a fragment of medieval pottery. Conditions were prohibitive to deeper digging, and the presence of river gravel suggested that here too the south side of the Vallum hadbeen swept away.

Due south, the trench was extended to discover the nature of the south berm. The trench measured 5 feet by 2 feet 6 inches. Similar conditions recurred, but below the top soil the layer of gravel ran straight across, and there was no top layer of grey. The gravel was fairly clean except towards the south end of the trench. It was dug through, but instead of the dirty grey layer in which the fragment of medieval pottery was found pink boulder clay

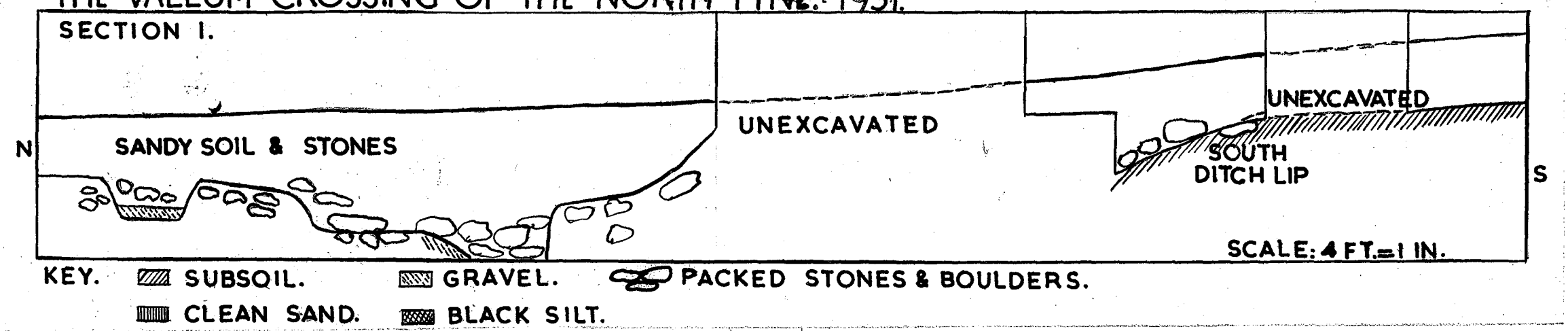
3. See section 40.

appeared, which had not been touched in trench VII. This may or may not represent the south berm. It exhibited a small pocket filled with dirty gravel, cobbles and freestones. A large freestone block with a lewis-hole in one side was discovered in the gravel at this point.

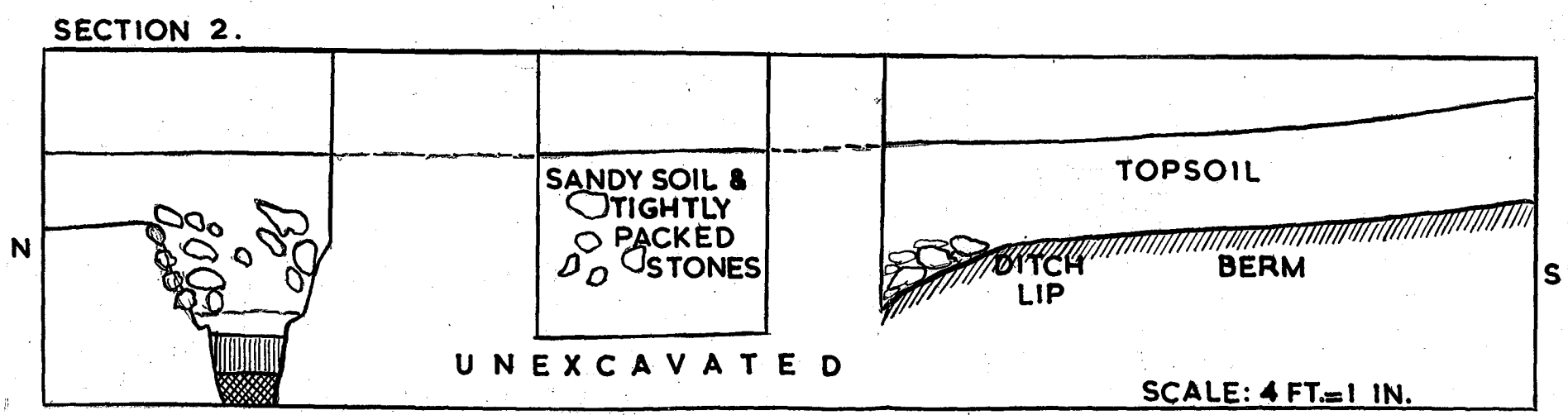
Trench VII and its extension added little but confusion to the problem. Not even the south lip had been discovered. At least it was clear that the bottom grey silt layer and therefore the gravel above it had not been laid earlier than medieval times. One other inference ought to be mentioned. The fact that no pink subsoil was encountered in trench VII may mean that the Vallum ditch was originally in that position, but had been destroyed or seriously tampered with, at least by the medieval era.

A return was made to the problem of the south lip which had eluded the eye between trenches II and VI. The ditch-lip in trench II was followed westwards and was found to curve in a most unusual manner back slightly towards the south. Its line was difficult to pursue, but down the slope at the bottom it was clearly marked by the presence of light-coloured sand upon dark grey sand, plainly deposited by water action. Instead of sloping as the ditch normally does, the slope of this ditch became roughly level after its initial, fairly abrupt drop from the berm. A fragment of medieval pottery came from the slope of the ditch at this point. This fact, together with the odd line which the "south lip" takes, and the lack of a north lip, makes it uncertain whether the Vallum ditch has been found at all, though the first three trenches indicated that it had. The ditch may even be a medieval one, rounded in plan. Lack of time prevented further investigation at the time. The results were largely negative. But if the lip found is definitely proved to belong to the Vallum ditch, not only the north lip and mound but also the ditch itself have been washed away either by river action or by the rush of water down the Vallum ditch-bottom.

THE VALLUM CROSSING OF THE NORTH TYNE. 1951.

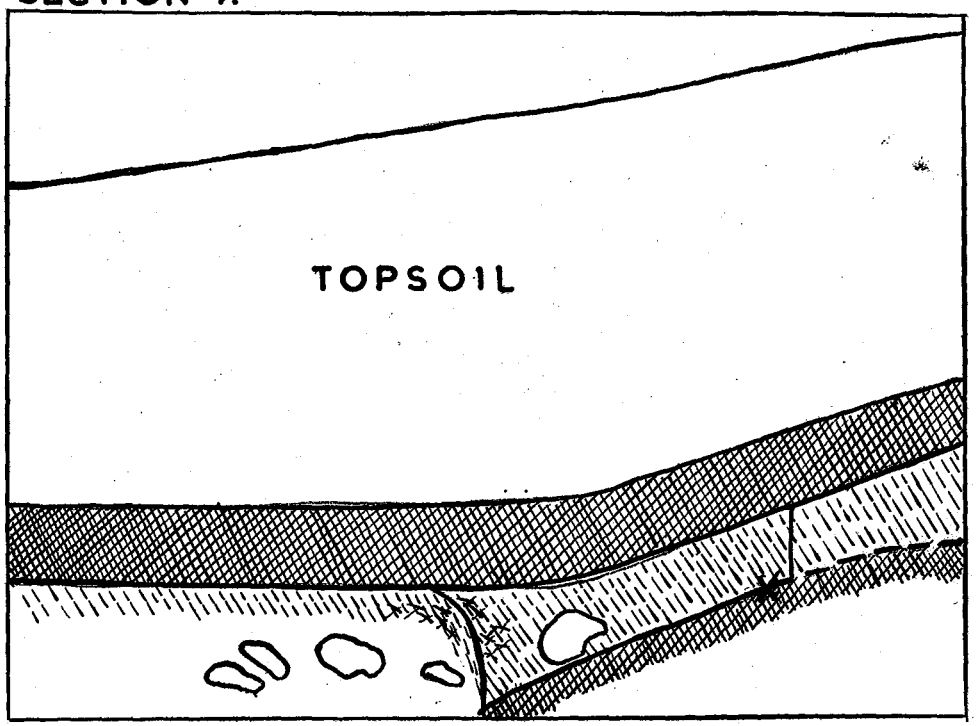


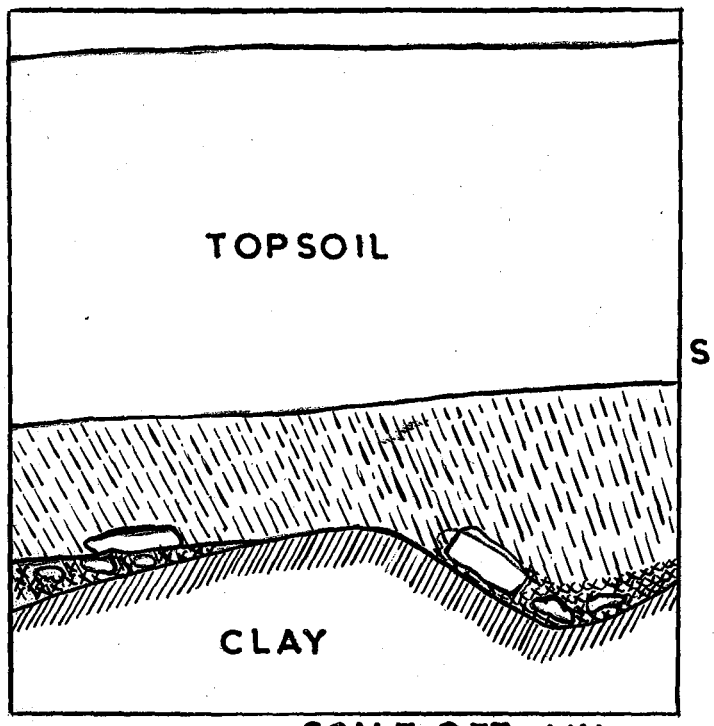
Section 38.



Section 39.

SECTION 7.





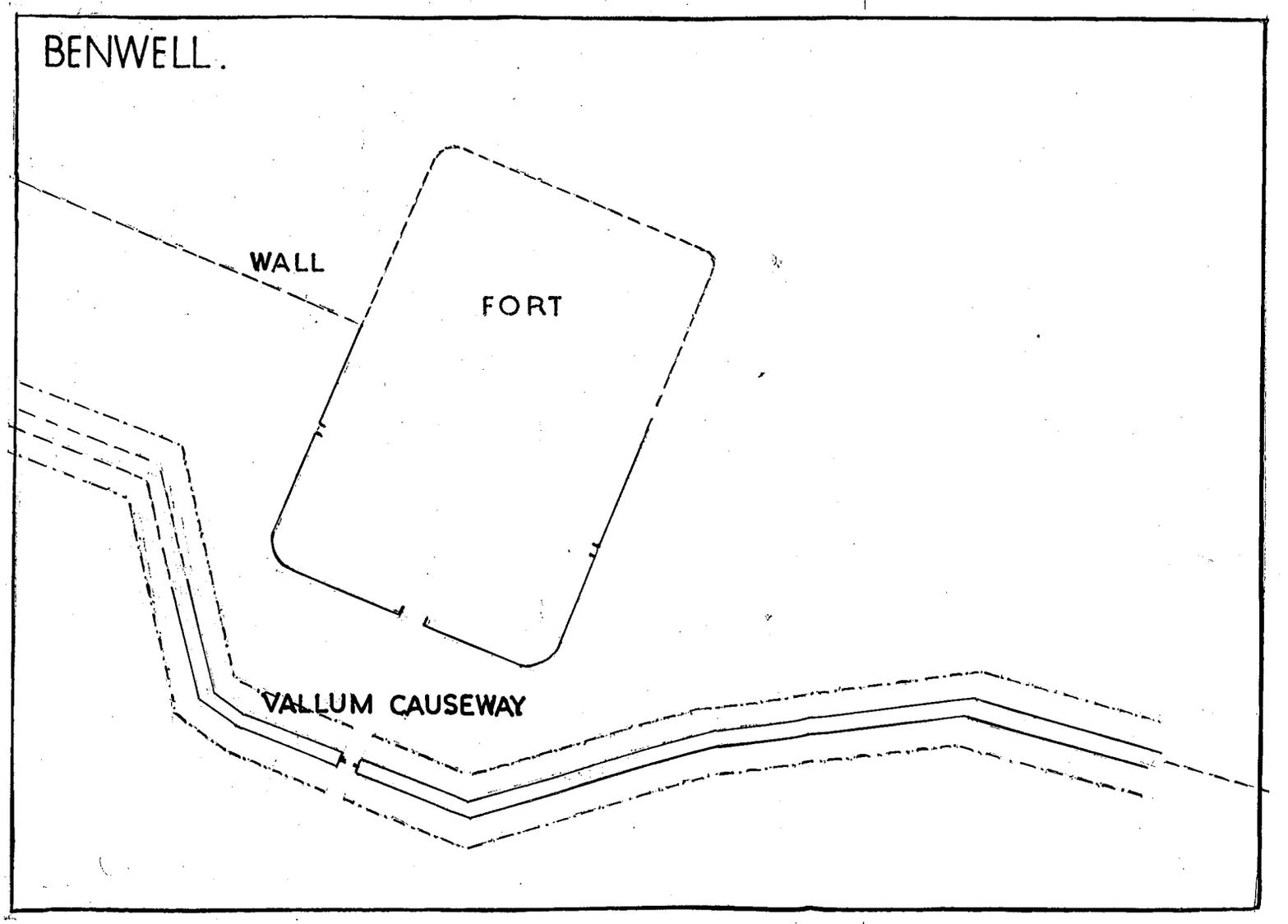
SCALE: 2 FT.= 1 IN.

GREY SILT. GRAVEL: FREESTONES. DIRTY GRAVEL.

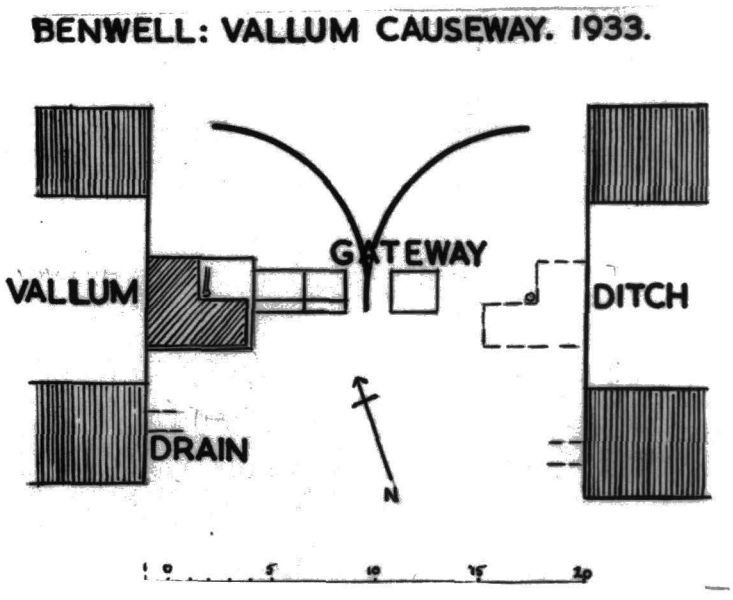
X FRAG. OF MEDIEVAL POTTERY.

Section 40.

Plan 41.



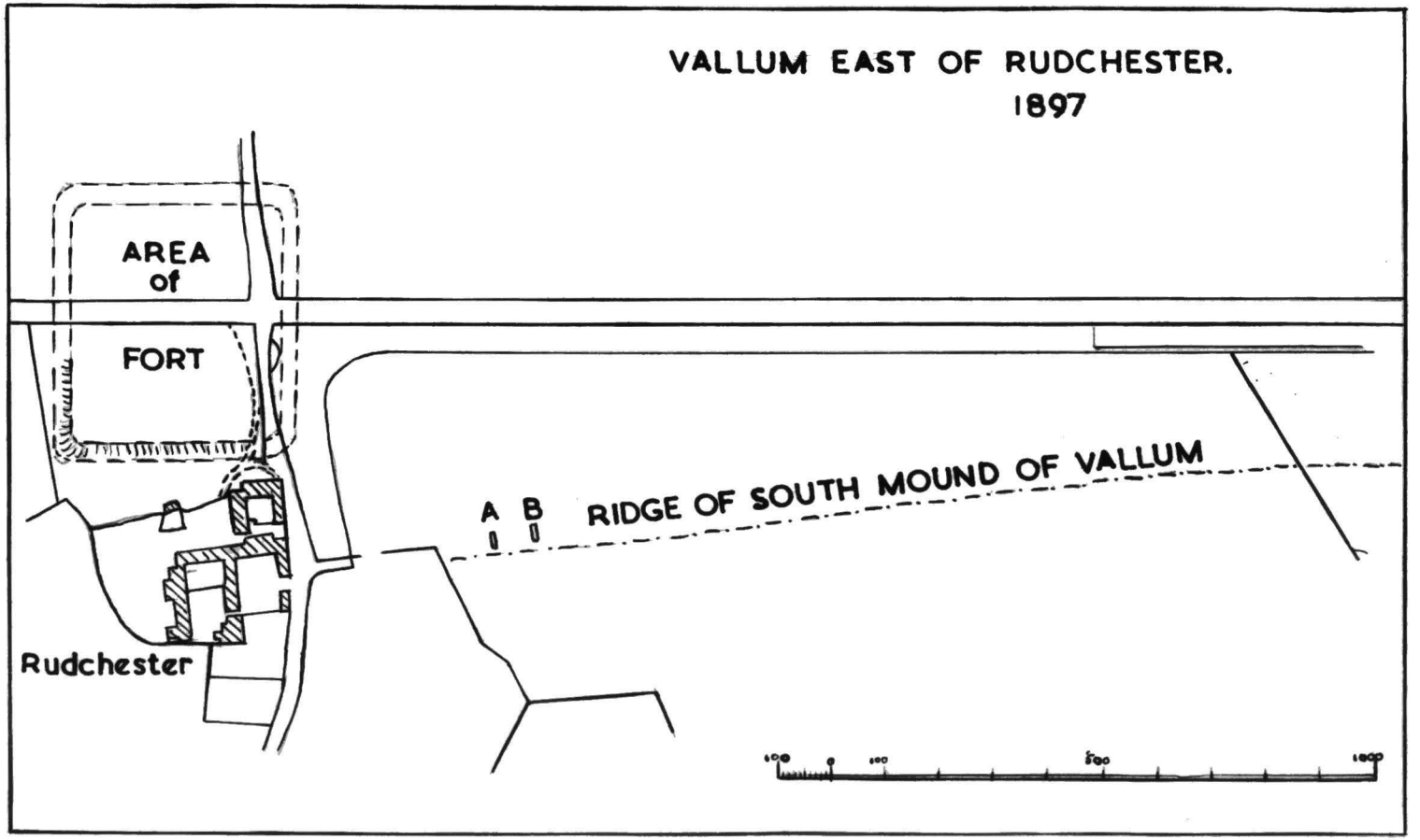
O. S. 25" XCIV. 11.



Plan 42.

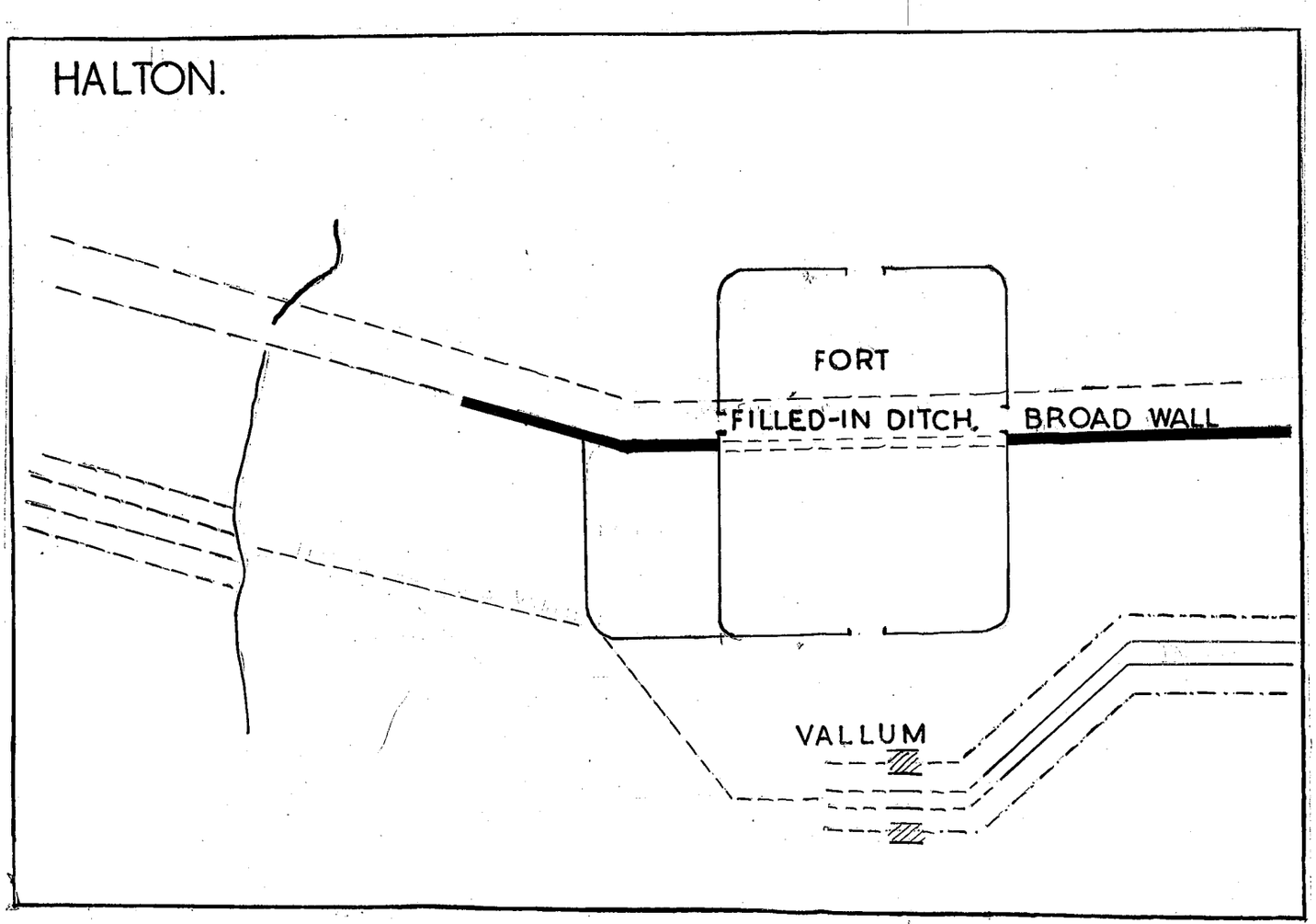
(W. Dodds) VALLVM CAUSEWAY AT BENWELL, from south-east.

Photograph 43.


VALLUM EAST OF RUDCHESTER.
1897
AREA
of
FORT
A
B
RIDGE OF SOUTH MOUND OF VALLUM
Rudchester
100
0
100
500
1000

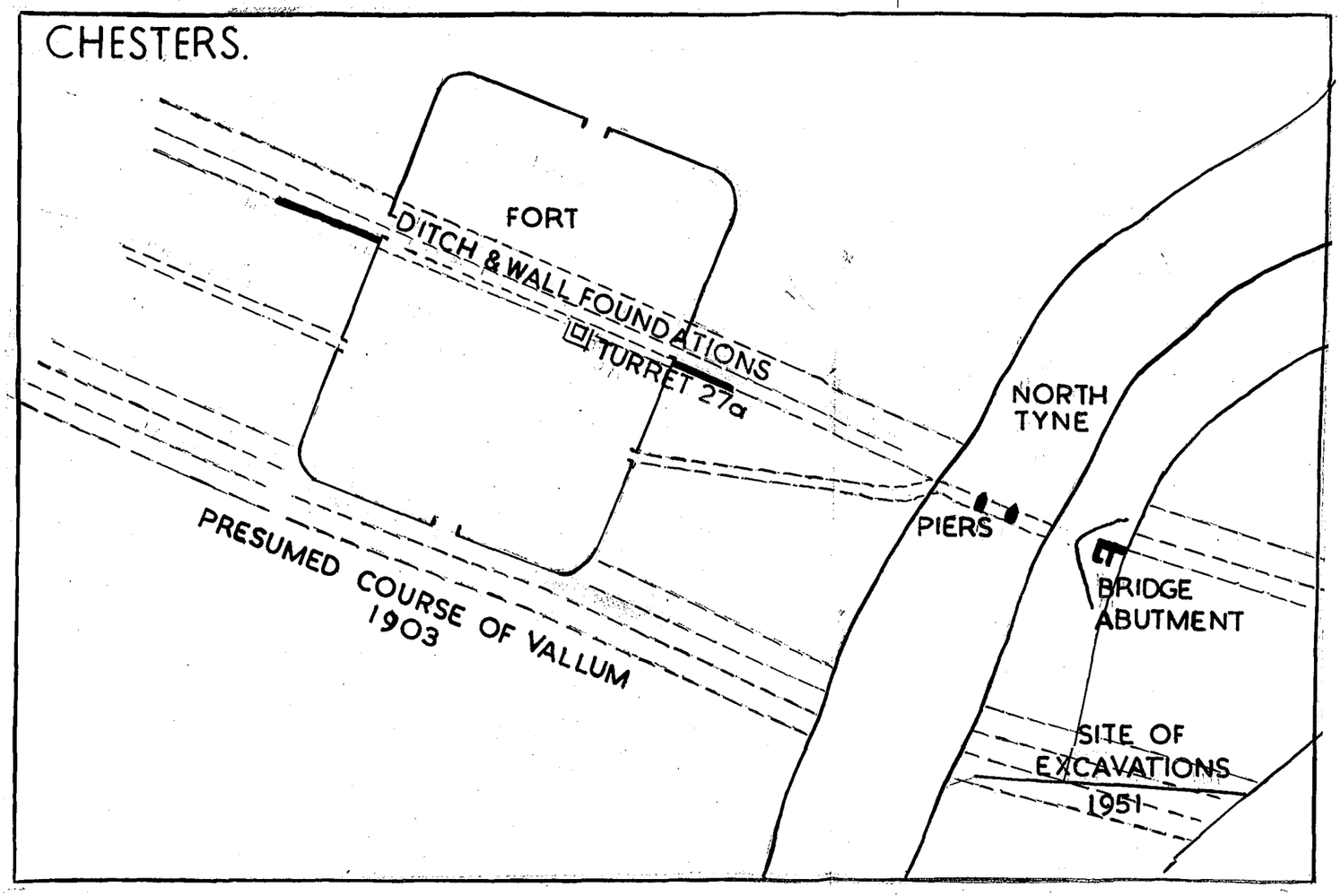
Plan 44.

Plan 45.

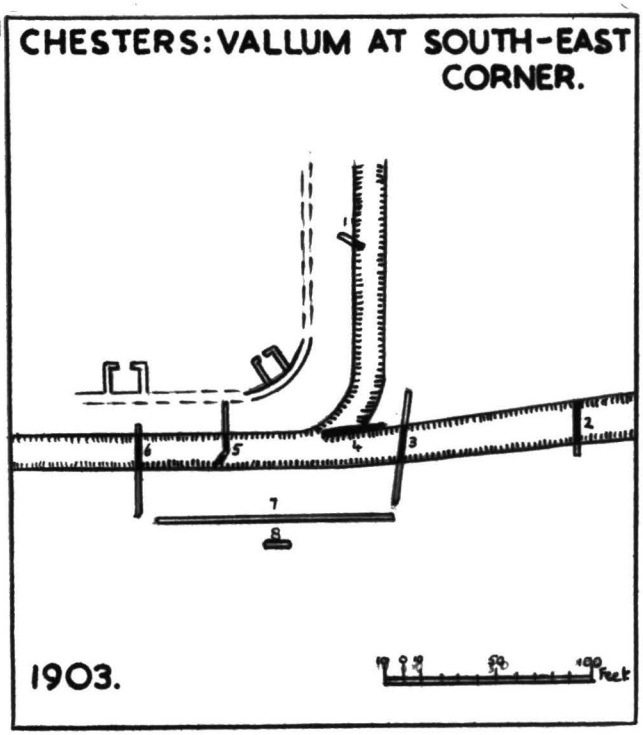


O.S. 25" XCII. 2.

Plan 46.



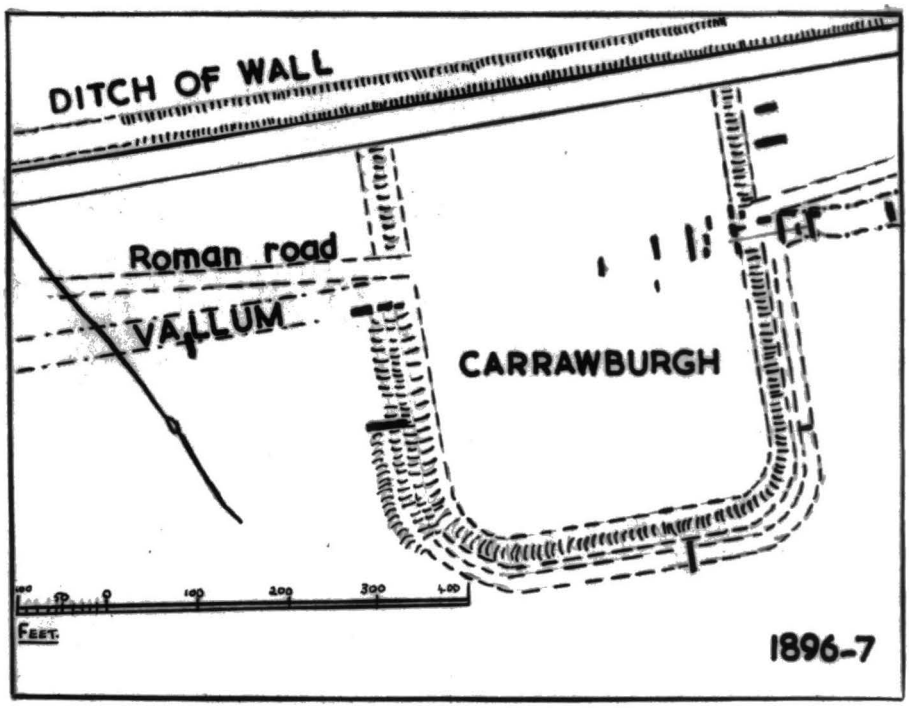
O. S. 25" LXXXII. 14.



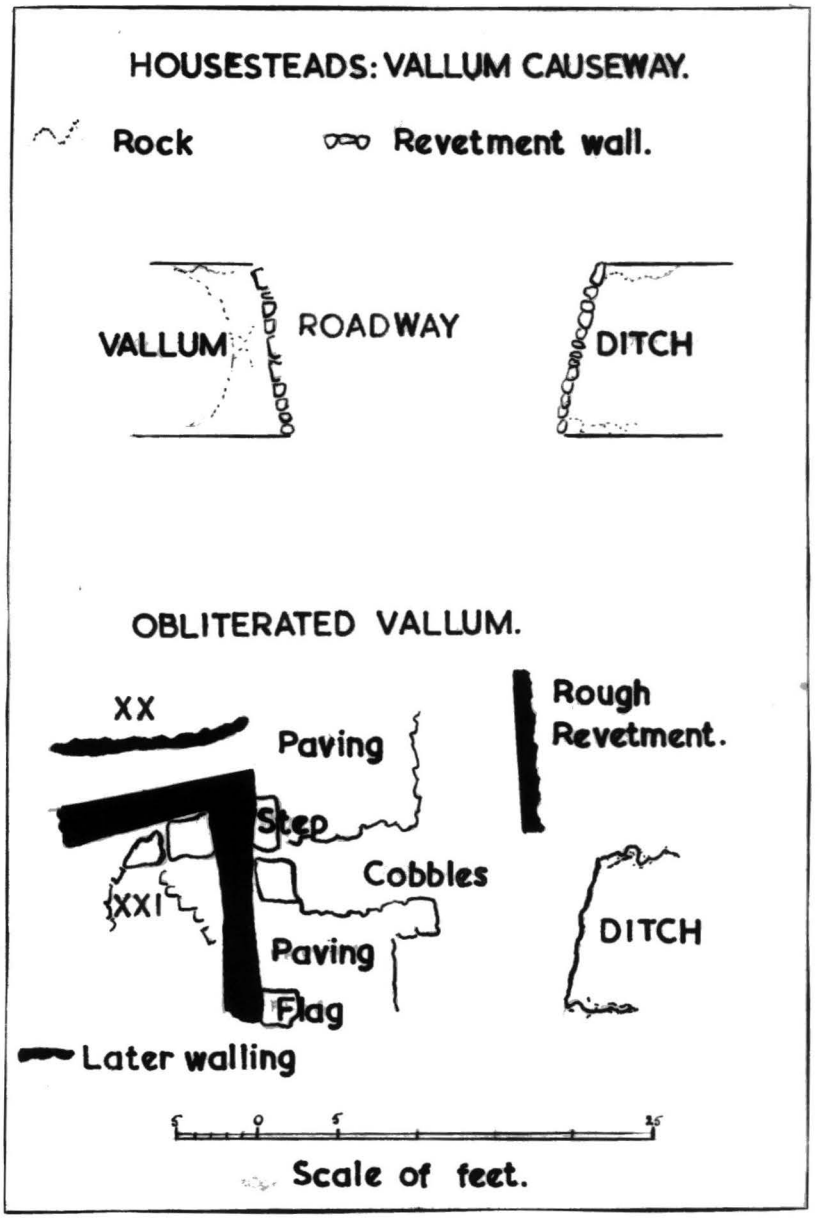
Plan 47.

Photograph 48.

(Dr. St. Joseph.) CIVIL SETTLEMENT SOUTH OF CHESTERS FORT.


DITCH OF WALL
Roman road
VALLUM
CARRAWBURGH
100
0
100
200
300
400
FEET.
1896-7

Plan 49.


HOUSESTEADS: VALLUM CAUSEWAY.
Rock
Revetment wall.
VALLUM
ROADWAY
DITCH
OBLITERATED VALLUM.
XX
Paving
Step
Cobbles
XXI
Paving
Flag
Rough
Revetment.
DITCH
Later walling
5
0
5
25
Scale of feet.

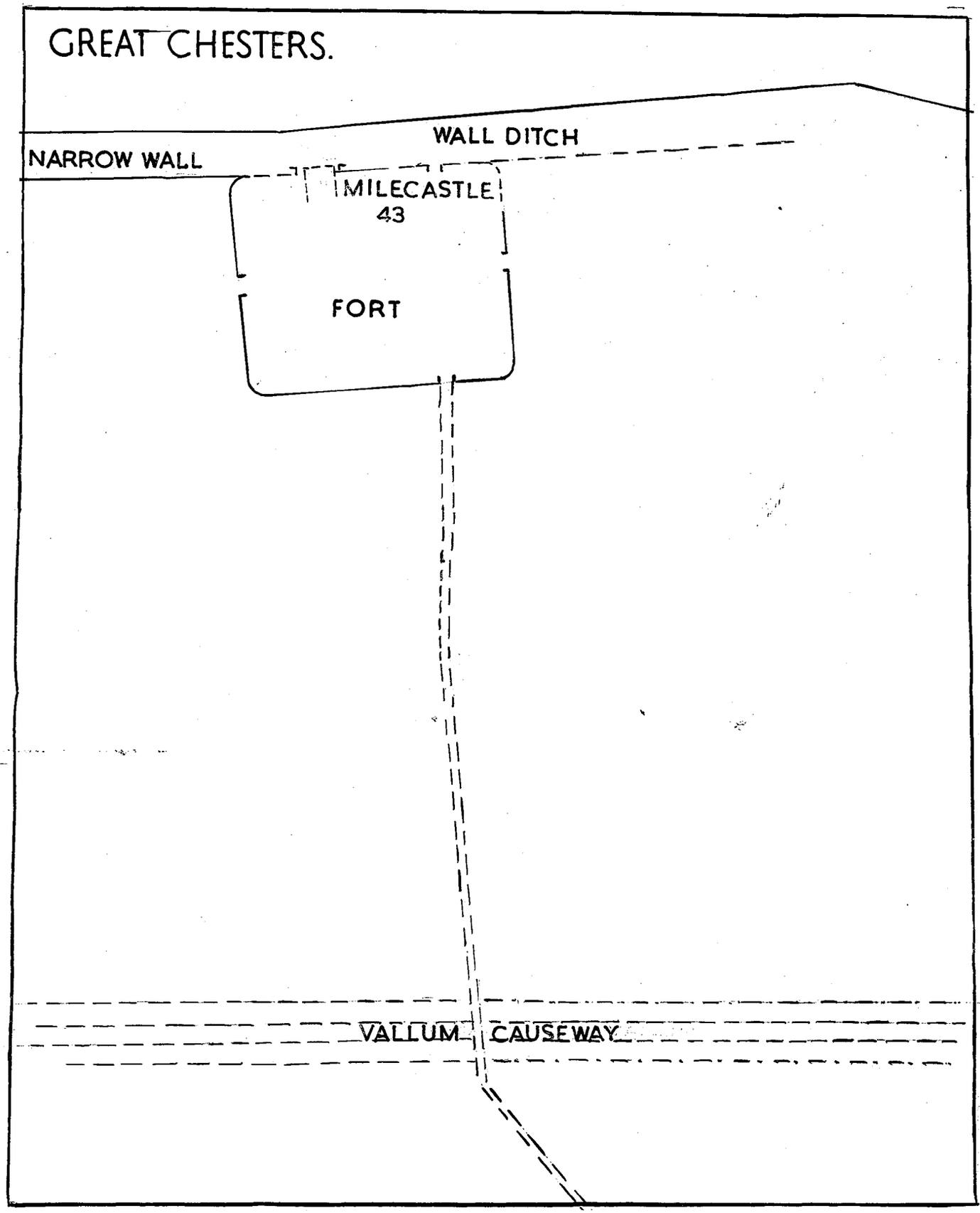
Plan 51.

(Dr. St. Joseph) THE FORT AND CIVIL SETTLEMENT AT HOUSESTEADS.

Photograph 52.

O.S. 25" LXXXIX. 6+5.

GREAT CHESTERS.

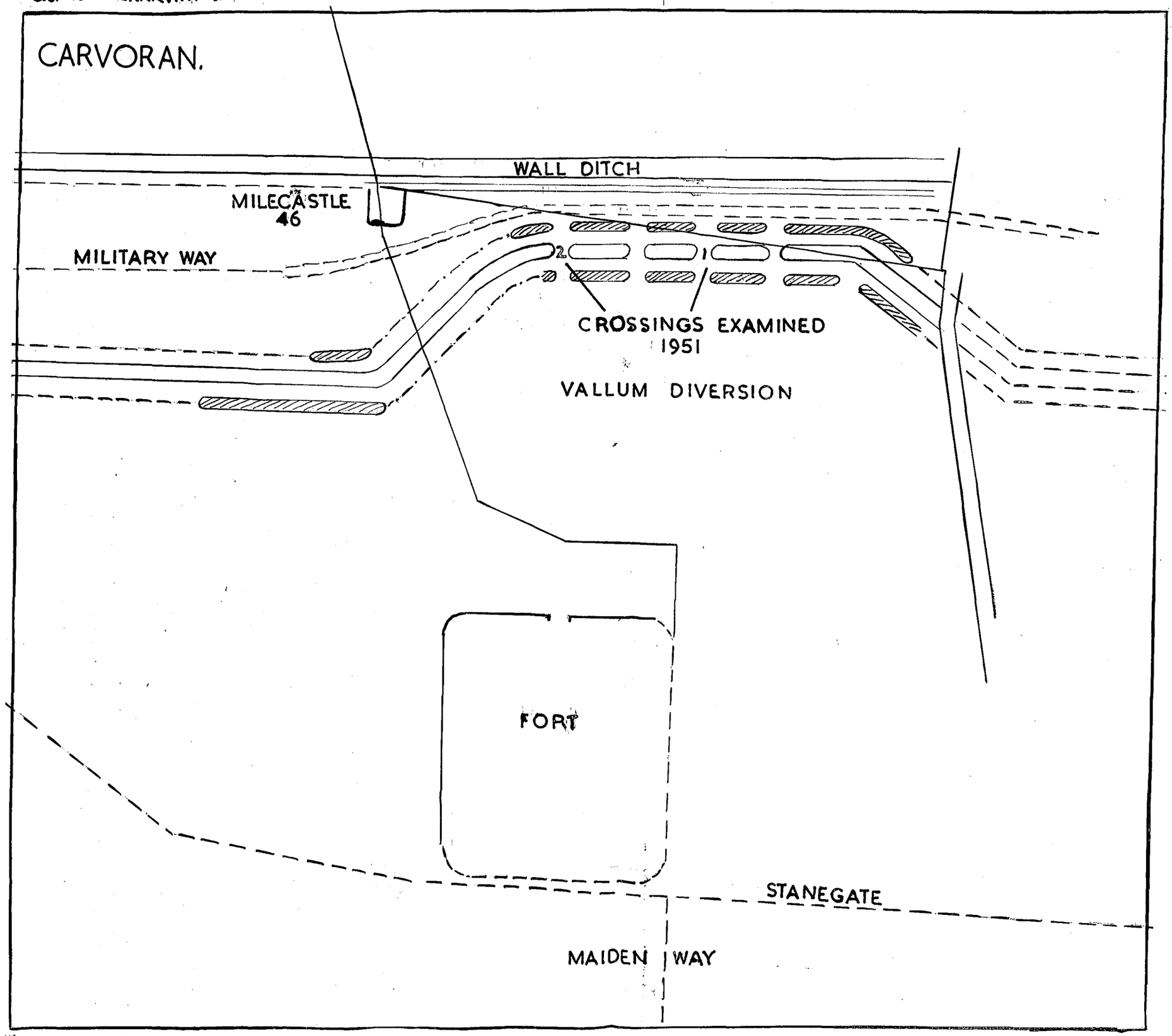


Plan 53.

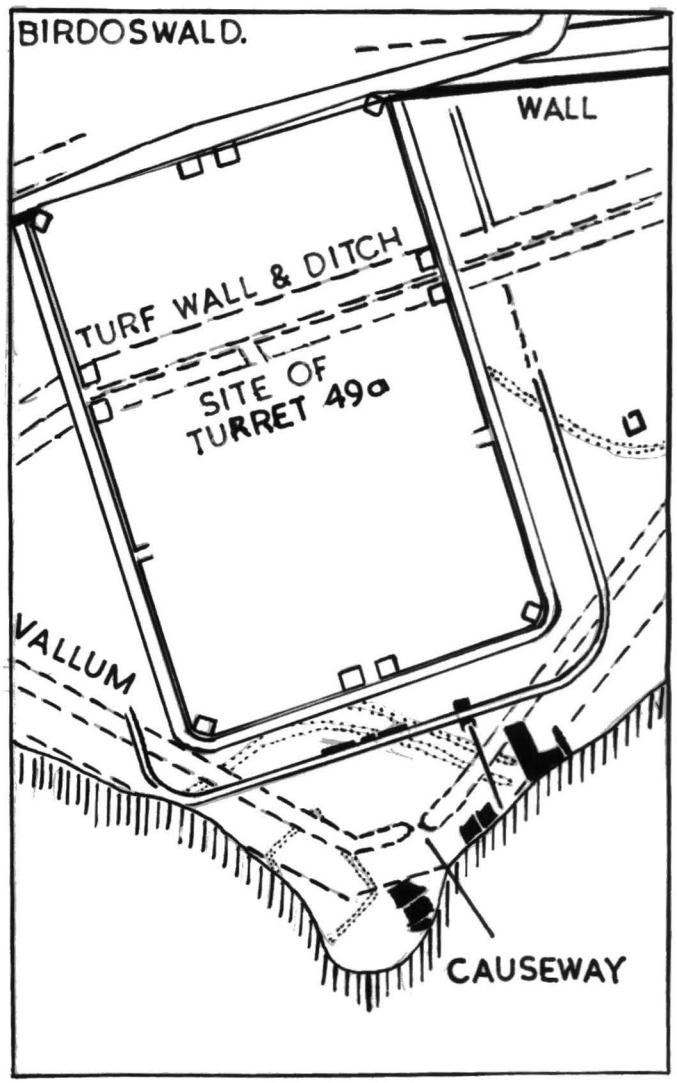
428.

Plan 54

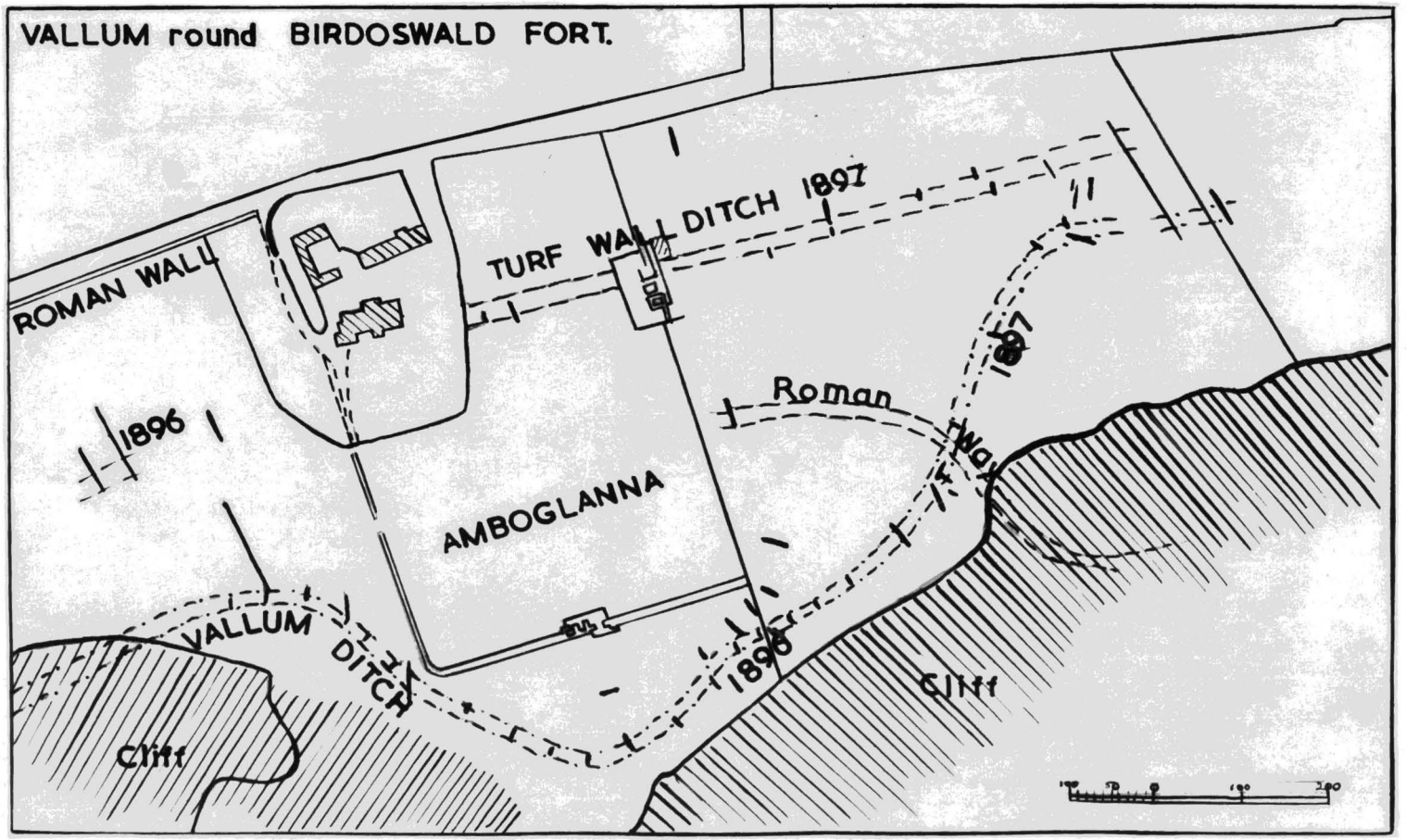
O.S. 25" LXXXVIII. 8.



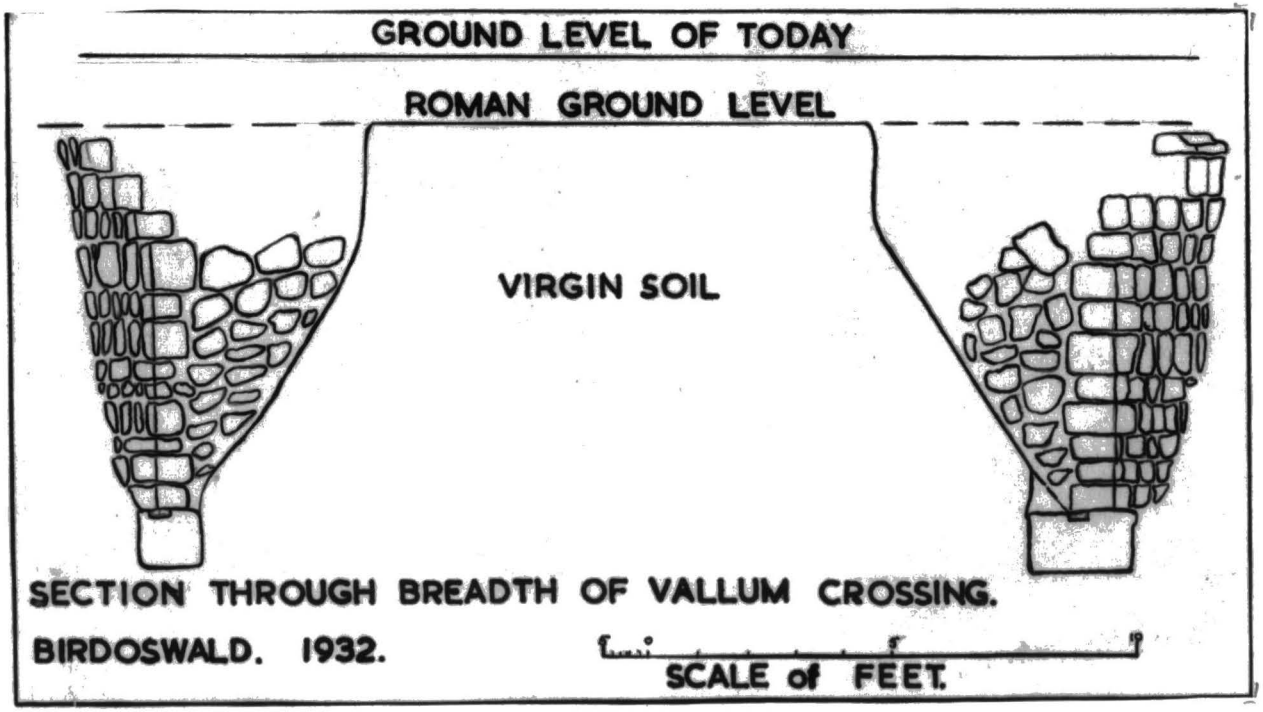
Plan 55



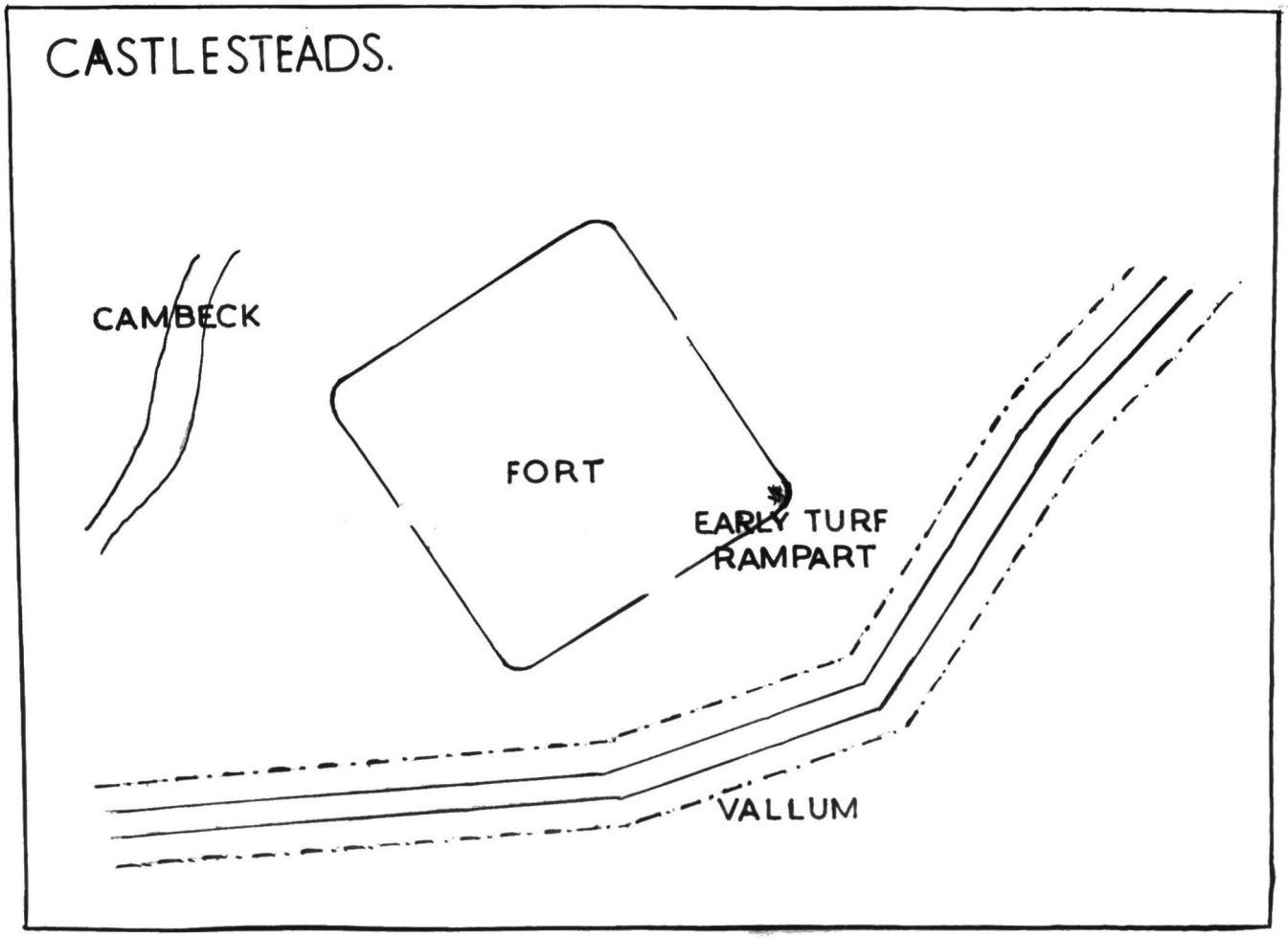
Scale: O.S. 25".


VALLUM round BIRDOSWALD FORT.
ROMAN WALL
TURF WALL
DITCH 1897
1896
AMBOGLANNA
Roman
Way
1897
VALLUM
DITCH
1896
Cliff
Cliff

Plan 56.

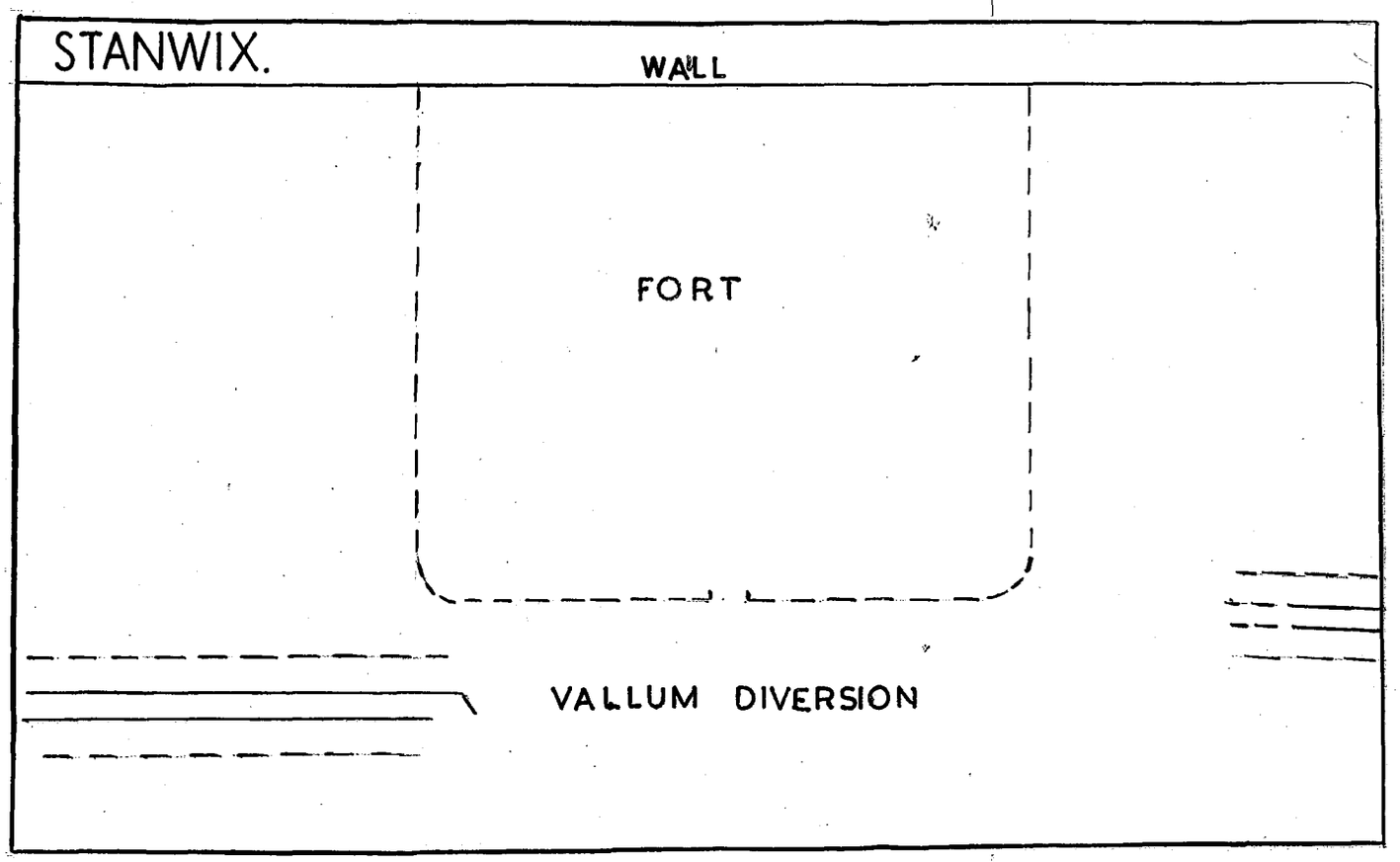

GROUND LEVEL OF TODAY
ROMAN GROUND LEVEL
VIRGIN SOIL
SECTION THROUGH BREADTH OF VALLUM CROSSING.
BIRDOSWALD. 1932.
SCALE of FEET.

Scale: O.S. 25".



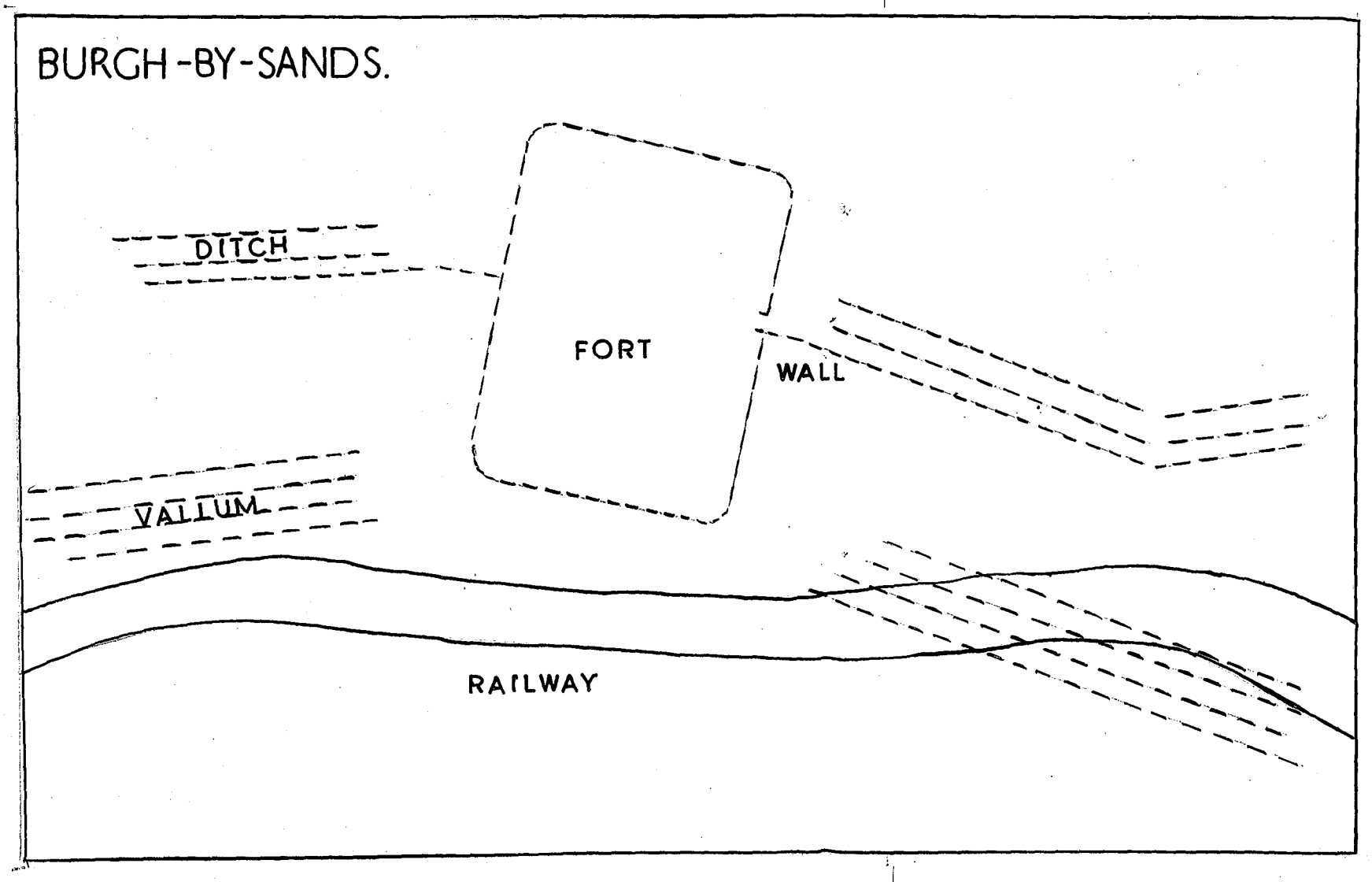
Plan 58.

Plan 59.



Scale: O.S. 25."

Plan 60.



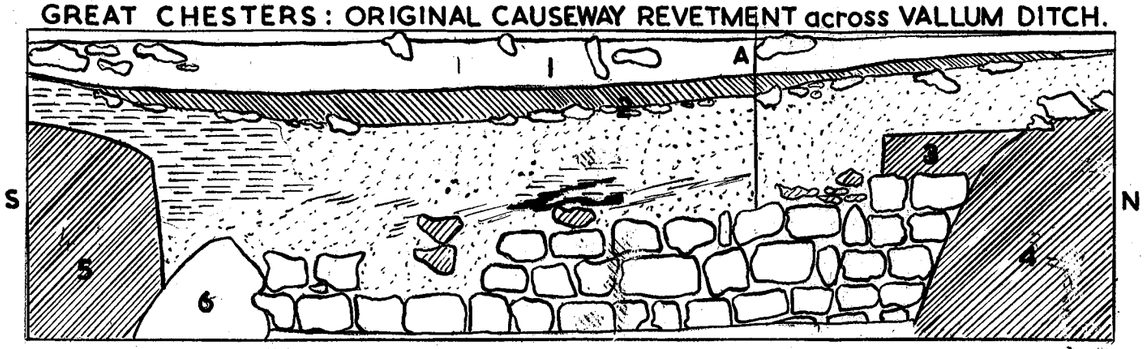
O.S. 25" XV. 12.

Photograph 61.

(Dr. St. Joseph) THE FORT AND WESTERN DITCHES AT GREAT CHESTERS.

Section 62.

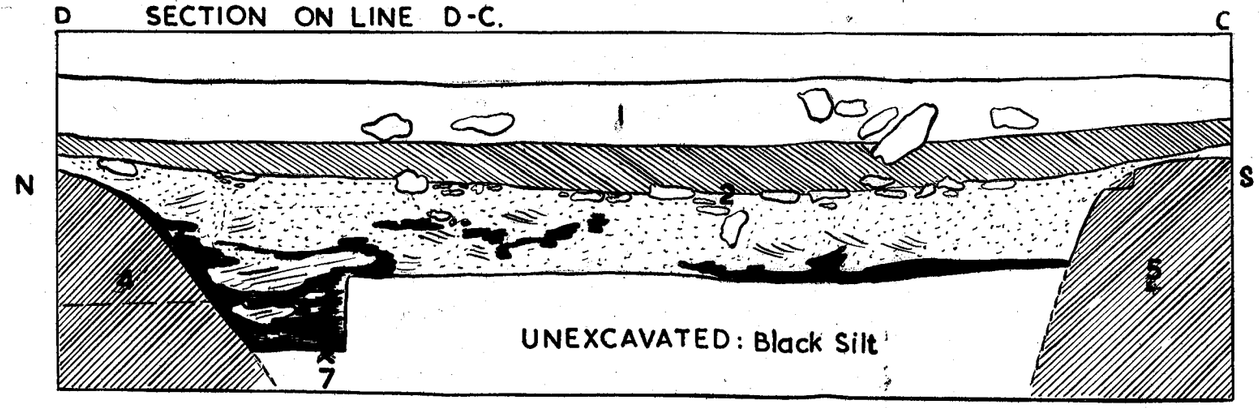
GREAT CHESTERS: ORIGINAL CAUSEWAY REVETMENT across VALLUM DITCH.



Undisturbed red clay subsoil. Not belonging to revetment wall.
Grey silt layer above yellow sandstones. 1. Topsoil: tightly packed stones.
Greyish-yellow fill. 2. Yellow sandstone layer.
Yellow fill with grey tinge. 3. Bank of subsoil.
Grey silt. 4. North slope of Vallum ditch. 5. South slope.
Black silt. 6. Whinstone block. 7. Pilum murale.
To right of vertical line, A, excavated 18 ins. nearer to field-wall.

63.

D SECTION ON LINE D-C. C



Scale: 1 inch = 3 feet.
B.S. 1951.

Photograph 64.

EASTERN REVETMENT OF VALLVM CAUSEWAY, GREAT CHESTERS:
from south-east.

APPENDIX III.

4-55.

THE SPACING OF THE FORTS ON HADRIAN'S WALL.

By BRENDA SWINBANK and J. E. H. SPAUL.

SOCIETY OF ANTIQUARIES OF NEWCASTLE UPON TYNE.
Overprint from *Archæologia Aeliana*, 4th series, vol. xxix.

GATESHEAD ON TYNE.
NORTHUMBERLAND PRESS LIMITED, SOUTH SHORE ROAD.

1951.

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455.

VIII.—THE SPACING OF THE FORTS ON HADRIAN'S WALL

By Brenda Swinbank and J. E. H. Spaul

(Read on 31st May, 1950)

The following abbreviations are employed:

AA[4] = *Archæologia Aeliana*, 4th series.
CIL = *Corpus Inscriptionum Latinarum*.
CW[1, 2] = *Cumberland & Westmorland Transactions* O.S., N.S.
HB = *Handbook to the Roman Wall*, 10th edition (1947).
JRS = *Journal of Roman Studies*.
NCH = *Northumberland County History*.
PSAN[3, 4] = This society's *Proceedings*, 3rd, 4th series.
PSAScot = *Proceedings of the Society of Antiquaries of Scotland*.

The writers wish to thank Mr. Eric Birley and Mr. J. P. Gillam for their unfailing help and encouragement in the preparation of this study; Professor I. A. Richmond has also read it in draft and has contributed a number of valuable suggestions, which have been taken into account in the final version here printed. The text is given substantially as it was read to the Society in May, but reference has been made in one or two footnotes to results obtained by excavations, conducted by the first-named writer, in September, 1950.

I.—The forts on Hadrian's Wall and the Antonine Wall.

In comparing Hadrian's Wall with the Antonine Wall in Scotland, the dissimilarity in the spacing of the forts is immediately apparent. If the Antonine Wall had nineteen forts along its forty miles, as Sir George Macdonald concluded,[1] a simple calculation will show that the forts should

[1] *Roman Wall in Scotland*, 2nd edition (1934).

APPENDIX III.

occur at an average distance of two and one-tenth miles or approximately every 3,700 yards. In fact the distance from Castlecary to Westerwood is 3,047 yards, Westerwood to Croy Hill 3,203, to Bar Hill 3,070, to Auchendarry 3,152, and from Cadder to Balmuildy 4,075, to New Kilpatrick 4,832, to Castle Hill 2,610, to Duntocher 3,365, and to Old Kilpatrick 4,125 yards; in this stretch are seen the greatest and the least distances between any two known forts along the Antonine Wall. A similar calculation for Hadrian's Wall (for which the *Notitia Dignitatum,* the Rudge Cup and surviving structures give a total of seventeen forts for a distance of eighty Roman miles) shows that the average interval should be five Roman miles; but Stanwix is as much as nine Roman miles from Castlesteads, and Carvoran is no more than three miles from Greatchesters on the east and Birdoswald on the west. There is thus great variation in the spacing of forts on Hadrian's Wall.

A suggestion made by Professor Richmond,[2] that there are two distinct series of forts in relation to the Vallum, makes it desirable to examine the course of the Vallum in this connection.

II.—The Vallum.

As the Vallum has not been traced further east than milecastle 5,[3] there is no evidence for its behaviour at Newcastle (in any case, it did not extend as far east as Wallsend), so that the survey must start with Benwell.[4] At this fort the Vallum makes an asymmetrical diversion to the south, in order to avoid the site of the fort, and leaves an original causeway of undisturbed boulder-clay, revetted with stone, opposite the south gate of the fort. There is no diversion at Rudchester,[5] because the Vallum runs well to the south of the fort, but there is a diversion at Halton;[6] and at Chesters, where the Vallum is visible on the west side of the fort running on a line which would coincide with the

[2] HB p. 20. [3] HB p. 47. [4] AA[4] xi, 177. [5] CW[1] xv, 178. [6] NCH x, 468.

latter's south ditch, another diversion seems likely.[7] No attempt has been made to find an original causeway at any of these three forts. At Carrawburgh excavation has shown[8] that the Vallum was obliterated to allow the building of the fort. Housesteads is like Rudchester, except that an original causeway across the Vallum there has been found by excavation.[9] Chesterholm is really a Stanegate fort, lying a mile south of the Wall, though it is included in the *Notitia* as a fort *per lineam valli*; from structural, ceramic and epigraphic evidence it is clear that it was abandoned when Hadrian's Wall was built, and not re-occupied until c. 163, so that it may be left out of account in the present discussion.[10] At Greatchesters, as at Rudchester and Housesteads, the Vallum runs well to the south of the fort; there are visible traces of a causeway, but it is not known whether it is an original one or if, in that case, it went with the fort or with the milecastle which preceded it.[11] Carvoran is like Chesterholm, technically a Stanegate fort, but is deliberately cut off from the Wall zone by a northerly diversion of the Vallum, as though avoiding an earlier structure on a different alignment: this diversion, however, may simply be to avoid a bog.[12] At Birdoswald it is now clear that the fort was built first, and that the Vallum was squeezed through the gap between the fort and the escarpment, with no north mound, a double-sized south mound and an original causeway opposite the south gate of the fort.[13] Although the fort at Castlesteads lies some 300 yards south of the Wall, the Vallum sweeps round at a distance of 90 yards, as though deliberately including a fort within the Wall zone.[14] Although diversions have not been proved

[7] *Cf.* PSAN[3] ii, 284.
[8] *Durham University Journal*, xxix, 97; JRS xxv, 203.
[9] AA[4] ix, 225; xi, 188.
[10] *Cf.* HB p. 136.
[11] *Cf.* HB p. 150. Excavations in September 1950 have proved that this causeway is a stone-revetted one, like those at Benwell, Housesteads and Birdoswald, to be associated therefore with the fort and not with the milecastle.
[12] *Cf.* Horsley, *Britannia Romana* (1732), p. 151.
[13] HB p. 173 and plan at p. 169. [14] CW[1] xv, 254; CW[2] ii, 385 and iii, 339.

at Stanwix[15] or Burgh-by-Sands,[16] the known course of the Vallum in those sectors makes it probable that they occurred; original causeways, too, are likely but have not yet been found. The relation of Drumburgh[17] to the Vallum is unknown, and it is not known what happens to the Vallum when it approaches Bowness.[18]

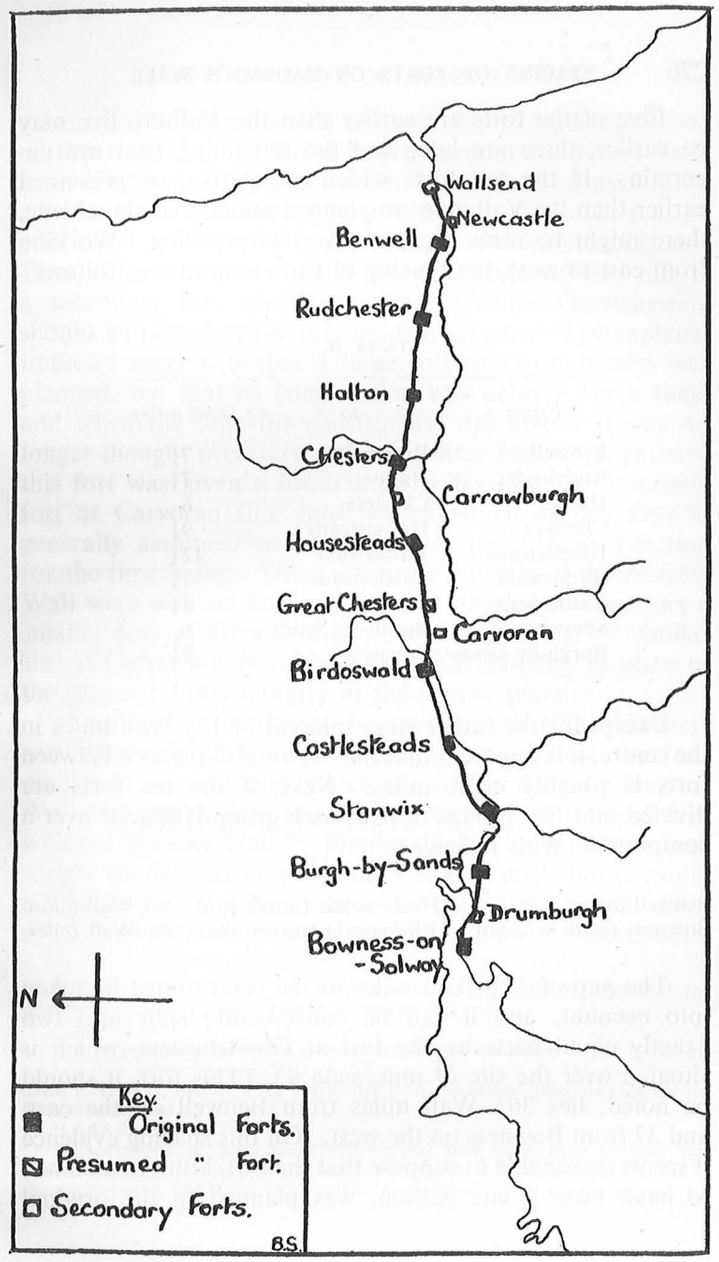
III.—Classification of the forts.

It is now clear that if the Vallum turns to avoid a particular site, that is *prima facie* evidence that the planning, if not the building, of a fort on that site took place before the construction of the Vallum; the converse is true where the Vallum runs underneath a fort. The forts can now be classified into earlier, uncertain and later than the Vallum, as follows:

TABLE I.

Fort	*Vallum deviation*	*Original causeway*	*Relationship*
Wallsend	No	Unnecessary	Later?
Newcastle	Unknown	Unknown	Unknown
Benwell	Yes	Yes	Earlier
Rudchester	No	Likely	Presumably earlier
Halton	Yes	Likely	Earlier
Chesters	Presumed	Likely	Presumably earlier
Carrawburgh	No	No	Later
Housesteads	No	Yes	Earlier
Chesterholm	No	No	Later
Greatchesters	No	Yes[19]	Unknown[19]
Carvoran	Yes, to north	Perhaps?	Later
Birdoswald	Yes	Yes	Earlier
Castlesteads	Yes	Likely	Earlier
Stanwix	Presumed	Likely	Presumably earlier
Burgh-by-Sands	Presumed	Likely	Presumably earlier
Drumburgh	Unlikely	Unlikely	Later?
Bowness	Unlikely	Perhaps?	Presumably earlier

[15] HB p. 200. [16] HB p. 205. [17] HB p. 207. [18] HB p. 209.
[19] Excavations in September 1950 confirmed the existence of an original causeway; for the relationship of the fort *as built* to the Vallum see below.



SKETCH PLAN OF FORTS ON HADRIAN'S WALL.

APPENDIX III.

Five of the forts are earlier than the Vallum, five may be earlier, three are later and the remaining four are uncertain. If the ten forts which are earlier or presumed earlier than the Vallum were planned under a single scheme, there might be some regularity in their spacing. Working from east to west, the spacing of forts is in fact as follows:

TABLE II.

From	*to*	*Wall miles*
Benwell	Rudchester	$7\frac{1}{3}$
Rudchester	Halton	$7\frac{2}{3}$
Halton	Chesters	6
Chesters	Housesteads	$9\frac{1}{3}$
Housesteads	Birdoswald	$12\frac{2}{3}$
Birdoswald	Castlesteads	$7\frac{2}{3}$
Castlesteads	Stanwix	$8\frac{2}{3}$
Stanwix	Burgh-by-Sands	6
Burgh-by-sands	Bowness	$8\frac{1}{3}$

Except for the rather large interval of $12\frac{2}{3}$ Wall miles in the centre, it is apparent that the "normal" distance between forts is roughly eight miles. Next, if the ten forts are divided into two groups of five, each group is spaced over a comparable Wall mileage:

Benwell (near turret 6*a*) to Housesteads (turret 36*b*)=$30\frac{1}{3}$ Wall miles.
Bowness (near m/c 80) to Birdoswald (turret 49*a*)=$30\frac{2}{3}$ Wall miles.

The gap of $12\frac{2}{3}$ Wall miles in the centre must be taken into account, and it can be conveniently split into two exactly equal parts by the fort at Greatchesters, which is situated over the site of milecastle 43. This fort, it should be noted, lies $36\frac{2}{3}$ Wall miles from Benwell on the east, and 37 from Bowness on the west. On this spacing evidence it seems reasonable to suppose that the fort, hitherto assumed to have been a late addition, was planned in the original

scheme for the construction of forts: yet the building-record of the stone fort at Greatchesters cannot be earlier than A.D. 128,[20] in its present form the fort is considerably smaller than the other original ones, and moreover it is of one build with the Narrow Wall,[21] which is secondary. Thus, while the *prima facie* evidence suggests that this is a secondary fort, on the spacing evidence Greatchesters should be placed in the original fort scheme. The explanation, we suggest, is that a large fort at Greatchesters was planned, but that its construction was delayed for a time, and when the time for construction did arrive, it was no longer thought necessary to have a large fort there; perhaps this fort was given a lower priority because the Stanegate fort at Carvoran (the existence of which at this time is generally assumed) could adequately perform its function for the time being. Then, when the builders of the Narrow Wall were well on their way, it was decided to construct a smaller fort at Greatchesters, and another fort of similar size at Carrawburgh, each to hold 500 infantry, in place of the planned 1,000 infantry at the former place.[22]

Another fact reinforces the argument that Greatchesters was originally planned as a large fort. There are four ditches at its west side, which are earlier than the Narrow Wall and earlier than the existing fort, which is bonded in with the Narrow Wall.[23] Similar ditches have not yet been sought on the east or south sides of the fort,[24] but it would not be surprising if excavation were to reveal that the outer ditch at least encloses a space of five acres or more, suffi-

[20] CIL vii, 730, from the site of its *porta praetoria*, credits Hadrian with the title *p(ater) p(atriae)*, only accepted by him in that year.
[21] AA[4] ii, 197.
[22] A fragmentary inscription from Carrawburgh, assignable to the governorship of Sex. Iulius Severus (CIL vii, 620*a*, *cf.* JRS xxxiv, 87-88), may thus be dated *c.* 130-132, two or three years later than the earliest possible date for the Greatchesters text.
[23] AA[4] ii, 197.
[24] Excavations in September 1950 showed that there were at least two ditches on the east side; but the weather prevented a complete examination of the ditch-system, and more work will be needed before the suggestion here put forward can be confirmed.

APPENDIX III.

cient to contain a large fort of the Housesteads type. Excavation in September 1950 has proved the existence of an original fort causeway of the Benwell type across the Vallum south of the fort.

Wallsend was not in the original scheme.[25] It is at this point that the narrow wall complicates the picture. Its exact relationship to the Vallum is uncertain, but it seems certain that the Vallum was at least begun before the change to the narrow wall took place. Although it may be argued that Wallsend was planned as part of the original fort scheme but that its construction was delayed until the change had been made to the narrow wall gauge (as was the case with Greatchesters), it seems unlikely that this was so; for Wallsend was a small fort, of one build with the narrow wall, and the Vallum does not extend further east than Newcastle: and these are sufficiently strong reasons for supposing that Wallsend fort was not part of the original fort scheme, but was a secondary addition to that scheme.

IV.—The placing of the forts.

Working, then, from the assumption that there were eleven forts originally planned, for the distance of 76 miles of Wall from Hadrian's Bridge at Newcastle upon Tyne to Bowness-on-Solway, and assuming the possibility that forts were originally intended to be placed at either end of the Wall (as was the case at Bowness), there are ten "fort intervals" for 76 miles, giving approximately $7\frac{2}{3}$ Wall miles for the normal interval between adjacent forts. More precisely, 76 Wall miles would allow eight intervals of $7\frac{2}{3}$ and two of $7\frac{1}{3}$ Wall miles.

The spacing of the forts[26] may give a valuable clue to the order in which they were planned, at least, if not the order of their construction—whether it was from east to west, from west to east or both at the same time. Beginning from

[25] HB p. 41.

[26] See map at end of HB; MacLauchlan's *Survey of the Roman Wall*; O.S. maps, especially the 25 in. series.

the west coast, Bowness is where it is expected, replacing milecastle 80, thus being the western terminal fort of the Wall. Burgh-by-Sands should be $7\frac{2}{3}$ miles further east, that is, replacing turret 72*a*; but in fact it seems to replace turret 71*b* (though it must be pointed out that the milecastles and turrets of the western sector of the Wall have not yet all been identified). There seem to be two possible explanations of this peculiarity:

(*a*) The fort was placed further east in order to guard the northern approach, by the eastern edge of Burgh Marsh (which, though invaluable for obstructing raiders, would be an obstacle for the cavalry garrison of the fort).

(*b*) The river Eden once flowed further south, where Burgh Marsh now is, so that the fort could not be placed in the planned position.

Stanwix should be situated over turret 64*b*; but in fact it has been moved a mile westwards, to guard the crossing of the river Eden, occupying the site of turret 65*b*. Castlesteads ought to be over milecastle 57; it is indeed very close to that milecastle, but it has been placed on the summit of a steep declivity above the Cambeck, some hundred yards south of the Wall: the advantage of such a situation needs no comment. Birdoswald fort is in its calculated position, overlying turret 49a;[27] it occupies a wonderful site, high on a summit above the Irthing escarpment. Greatchesters, the centre fort, should have been over milecastle 42, which is equidistant from Hadrian's Bridge on the east and Bowness on the west, and is $7\frac{1}{3}$ miles from Birdoswald; but in fact it overlies milecastle 43,[28] which is almost equidistant from Benwell and Bowness.

[27] PSAN[4] x, 274.

[28] JRS xxx, 161, 163-164. The difference of $\frac{1}{3}$ mile is accounted for by the fact that an interval of $7\frac{2}{3}$ miles in each case would produce a total of $76\frac{2}{3}$ miles, whereas the Wall is only 76 miles from Hadrian's Bridge to Bowness; $\frac{2}{3}$ of a mile have to be omitted, and it seems that the Romans intended to effect this by making the two central intervals each $7\frac{1}{3}$ instead of $7\frac{2}{3}$ miles.

APPENDIX III.

There are two possible explanations of the peculiarities in the spacing of the forts in the eastern half of the Wall:

Theory A:

The Wall began at Hadrian's Bridge. The extension to Wallsend had not yet been contemplated. Why, then, was Benwell (the eastern terminal fort at this stage) not placed closer to the bridge? It can only be suggested that the bridge was thought to be sufficiently guarded by the garrison of milecastle 4, then the first milecastle on the Wall; and the first fort, instead of standing in the hollow to guard the bridge, was built on the crest of the hill, with a commanding all-round view, but still within easy reach of the bridge, $2\frac{1}{3}$ Roman miles to the west, a little west of turret 6*a*.

It seems that, in view of the first fort having been built further west than Hadrian's Bridge, the interval between the forts in this eastern sector was reduced from $7\frac{2}{3}$ to $7\frac{1}{3}$ Wall miles, so that the fort builders working from east to west should not upset the spacing of those working from west to east. They were to meet, it may be presumed, half-way along the Wall, that is at milecastle 42, where the central fort was to be placed. Rudchester, therefore, occupies its correct position, some $7\frac{1}{3}$ miles from Benwell, presumably overlying turret 13*b*. Halton should cover milecastle 21, but in fact it lies slightly west of turret 21*a*, $7\frac{2}{3}$ miles from Rudchester; if an explanation of the interval is required, it may well be that it was to avoid having to place a fort on the awkward slope of Down Hill, where milecastle 21 stood. Chesters, the next fort, should be situated over turret 28*a*, but in fact it overlies turret 27*a*.[29] The reason for this is obvious: the fort was moved a mile east of its planned position, so as to guard the crossing of North Tyne —and to obtain the ample water-supply necessary for a cavalry garrison. (By contrast, when we consider the trouble and expense entailed by bringing an adequate water-supply

[29] PSAN[4] x, 274; JRS xxxvi, 134.

to the cavalry fort at Benwell, it is clear that there must have been a compelling reason for placing it there and not at the bridgehead: the outlook and the strength of the hill-top site were held to compensate for the increased cost of water-supply.)

Housesteads fort should replace turret 35*b*, but in fact it overlies turret 36*b*.[30] Here, too, the reason can easily be found in the lie of the ground: the ridge on which the fort stands is obviously more suitable for it than the depression of Busy Gap would have been, and the necessary water-supply could be obtained with little difficulty from the Knag Burn.

Finally we come to Greatchesters, the planned position of which should be over milecastle 43 (that is, 35*b* plus $7\frac{1}{3}$ Wall miles), and that is where the fort is. In other words, the fort builders working from east to west had encroached one mile on the territory assigned to the group working from west to east: as has been said above, milecastle 42 is in the centre of the Wall, from Hadrian's Bridge to Bowness; but measuring from the initial terminal fort at Benwell (placed further westward than anticipated), milecastle 43 is almost half-way between the two terminal forts (as opposed to the two ends of the Wall itself). The average interval between Benwell and Greatchesters is precisely $7\frac{1}{3}$ miles; and it may be added that milecastle 43 provided an ideal situation for a fort, while it would have been out of the question to fit one into the steep-sided gap where milecastle 42 stands.

Theory B:

Theory A, with its modified $7\frac{1}{3}$ mile interval, does not account for the fact that both Birdoswald and Housesteads are $6\frac{1}{3}$ Wall miles from Greatchesters, and suggests that it was a mere accident; Theory B maintains that this spacing was deliberate, and that the two fort intervals in the centre, which should have been $7\frac{1}{3}$ miles each, were reduced to

[30] PSAN[4] x, 274; HB p. 113.

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6⅓ miles. The fundamental difference between the two hypotheses is that Theory A assumes that the forts in the eastern sector were planned in the order in which they were built, from east to west; Theory B assumes that the forts were planned from west to east, but built from east to west, and furthermore that Greatchesters was planned to be equidistant from Bowness and Benwell. The two missing miles in the centre (because the intervals have been reduced to 6⅓ instead of 7⅓ Wall miles) must on this hypothesis be inserted at the eastern end of the Wall; thus the eastern terminal fort should have been at milecastle 6 instead of at either Hadrian's Bridge or the Benwell site. The fort at Greatchesters is equidistant from Bowness and milecastle 6; Rudchester comes in its correct position, 7⅔ miles from milecastle 6; Halton also is in its correct position, 7⅔ miles from Rudchester. Chesters is out of position for the reasons given above, under Theory A. Housesteads is in position, 15⅓ miles from Halton. In other words, the only misplaced fort, apart from Chesters, is Benwell, which is 620 yards west of its planned position; and when one considers that a fort placed at milecastle 6 would be half-way down the hill, with adequate water no easier to obtain than on the summit, the main reason for moving it 620 yards further west will have been to get the better outlook over the Northumberland plain. Theory B, it will be noted, has one less fort out of planned position than Theory A.

V.—The garrisoning of the Wall.

It seems reasonable to expect that there was some logical system in the garrisoning of the eleven original forts which have been dealt with above. It seems certain that Benwell,[31] Rudchester,[32] Halton,[33] Chesters,[34] and Burgh-by-Sands[35] were designed as cavalry forts, each to accommodate 500 men; these five forts have the same basic features and cover similar areas, and the internal buildings of the three of them

[31] AA[4] xix, 1-43; HB p. 50.
[32] HB p. 59.
[33] HB p. 68.
[34] HB pp. 83, 90.
[35] HB p. 205.

which have been examined in detail (Benwell, Halton and Chesters) include cavalry barracks and stables. Stanwix[36] was a cavalry fort for 1,000 men (only one unit of that type being known in the Hadrianic Army of Britain); while Housesteads[37] is known to have accommodated a milliary cohort. It seems clear that Birdoswald held an infantry garrison from the first, though its plan and its relationship with the Wall suggest that it was at first intended for a cavalry regiment:[38] it seems that the projecting forts with six gates can be classed as cavalry forts, and indeed it is difficult to see any other reason for their having side gateways north of the Wall, except to allow a cavalry force to issue rapidly northwards through three main gateways.

There remain Greatchesters, Castlesteads and Bowness to be accounted for. The stone fort at Bowness is big enough to accommodate either a milliary cohort, with two acres to spare, or a quingenary *ala* and the greater part of a quingenary cohort as well. But there is no reason to believe that the existing remains at Bowness belong to the first half of the second century; and even if they do, they are not necessarily Hadrianic. The possibility has been considered, for some time past, that the forts west of the Red Rock Fault were originally of turf, and were later replaced in stone. It is known that that was the case with the Turf Wall in the western sector; and excavation at milecastle 79 in 1949[39] showed that the replacement of turf by stone at that point cannot have taken place before the end of Hadrian's reign at earliest. There is thus a strong case for supposing a similar date for the replacement of turf by stone in the forts, and it may be suggested that there was originally a turf fort of about five acres, to accommodate 500 cavalry, at Bowness.

The unusually large fort at Stanwix, too, may be thought likely to overlie an equally large turf fort; but one may wonder whether it did not project north of the Wall, like

[36] HB p. 198.
[37] HB p. 113.
[38] HB p. 172.
[39] Report to be published in CW[2].

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the other cavalry forts—unless, as at Bowness, the lie of the ground was thought unsuitable for such a projection.

There is evidence for a turf fort below the existing stone one at Castlesteads, though its size and precise layout have not been established.[40] The Vallum sweeps round at a distance of 90 yards, and there is therefore enough room between it and the Cambeck to include a large turf fort, presumably of Hadrianic date, capable of accommodating either an *ala* 500 strong or a milliary cohort; and in view of the fort's situation, it seems that the latter is more likely.

Finally, we come to the garrison of Greatchesters. As has been said, the writers would be quite prepared to find that the extraordinary ditch system on the west of this fort was repeated on the east, and that the outermost ditch encloses a space substantially larger than that occupied by the existing fort: in other words, that a larger fort was originally planned here, and its outer ditch dug to mark its position, but that when the fort builders arrived, it had been decided to build two small forts, one of them here and one at Carrawburgh, instead of one big one at Greatchesters. Carvoran, which had plugged the gap for the time being, and had been excluded from the military zone proper by the Vallum, was presumably now abandoned, only to be reoccupied in the closing years of Hadrian's reign.[41] It is suggested, therefore, that Greatchesters was originally planned to house a milliary cohort, but that in the event quingenary cohorts were established there and at Carrawburgh.

To summarize, it looks as though in the original fort scheme there was to be a block of 4,000 infantry in the centre, with a block of 2,000 cavalry on either flank. But this scheme never materialized, as the result of the introduction of a series of modifications. Carrawburgh was added, to plug the gap of nine miles between Chesters and Housesteads; so were Wallsend and Drumburgh. By the end of Hadrian's reign, the Wall system of milecastles and

[40] CW² xxxiv, 163f.; HB p. 192.

[41] PSAN⁴ ix, 250.

turrets had been continued for 50 miles or more along the Cumberland coast,[42] with a number of forts spaced more widely than those on the Wall, and it is possible that the fort at South Shields, 4½ miles east of Wallsend, should be regarded as representing an eastward extension of the frontier.[43] Outpost forts were constructed at Bewcastle, Netherby and Birrens, but it is not yet known what types of unit they housed under Hadrian.[44] Carvoran was reoccupied *c.* A.D. 136, a stone fort for a cohort 500 strong being built there.[45] One may wonder, on the analogy of Greatchesters and Carrawburgh, whether the rebuilding of Castlesteads in stone was intimately connected with the rehabilitation of Carvoran, two units 500 strong at those two sites replacing one 1,000 strong at the former of them. The importance of Carvoran, guarding the gap between Irthing and South Tyne, can hardly be exaggerated; on the other hand, the reduction in size of garrison at Castlesteads may be connected with the building of the outpost fort at Netherby—or the rebuilding at Castlesteads may have occurred considerably later. But if the replacement of the turf wall by stone did take place late in the reign of Hadrian, as Professor Richmond has suggested, it seems most likely that the stone fort at Castlesteads is Hadrianic also.

To recapitulate: the original design of Hadrian's Wall comprised a stone wall, with milecastles and turrets, from Newcastle to Irthing, and a similar wall in turf from Irthing to Bowness; the Stanegate forts, with fortlets added between them, were at first thought sufficient military backing to the Wall. The first modification was the addition of eleven forts to the Wall itself (and the abandonment of the Stanegate forts), though in fact only ten of the eleven were built to

[42] HB pp. 212-214.

[43] The fort at Newcastle may have been another addition at this stage, but evidence is not yet available.

[44] Bewcastle: CW² xxxviii, 195-287. Netherby: CIL vii, 961. Birrens: PSAScot lxxii, 275f.

[45] PSAN⁴ ix, 250.

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the intended plan. Very shortly after this came the construction of the Vallum and, at that time or later, the decision was taken to reduce the Wall from ten to eight feet in thickness, and to replace the turf wall by a stone wall from Irthing to the Red Rock Fault. The forts at Wallsend and Drumburgh were added, and there was a rearrangement of garrisons in the Chesters-Greatchesters sector. Still later came the reoccupation of Carvoran, most probably the rebuilding in stone of the fort at Castlesteads, and perhaps the replacement of the turf wall by stone wall from the Red Rock Fault westwards to Bowness; and by the end of Hadrian's reign a flourishing outpost system had been established, as well as a strong chain of defence along the Cumberland coast.

The following table summarizes the situation at the end of Hadrian's reign:

Wallsend	500 infantry	
Benwell	500 cavalry	2000 cavalry
Rudchester	500 cavalry	
Halton	500 cavalry	
Chesters	500 cavalry	
Carrawburgh	500 infantry	2000 infantry
Housesteads	1000 infantry	
Greatchesters	500 infantry	
Carvoran	500 infantry	2000 infantry
Birdoswald	1000 infantry	
Castlesteads	500 infantry	
Stanwix	1000 cavalry	2000 cavalry
Burgh-by-Sands	500 cavalry	
Drumburgh and Bowness	500 cavalry? and 500 infantry?	

Note: The writers assume that Drumburgh fort, too small to house a complete cohort, was occupied by part of one unit, the remainder of which shared Bowness fort with a complete unit.

In addition there were the outpost units at Birrens, Netherby and Bewcastle, and the garrisons of the forts on the Cumberland coast. The numerous additions to the original series show that the Romans had realized the shortcomings of their first scheme, and demonstrate increasing pressure on the frontier, which had to be met by increasing its garrison; the radical change in frontier policy effected by Pius becomes easier to understand in the light of this continual modification of the Hadrianic scheme.

Appendix I: The governors of Britain and Hadrian's Wall

It is reasonably certain that there were at least four Hadrianic governors concerned with the Wall:

1. A. Platorius Nepos, A.D. 122-*c.* 126.
2. The unidentified governor of the Bewcastle inscription, CIL vii, 978, *c.* A.D. 126-130.
3. Sex. Iulius Severus, *c.* A.D. 130-133.
4. P. Mummius Sisenna, attested A.D. 135.

It seems reasonable to suppose that some at least of the modifications which have been considered were due to the different policies of successive governors; tentative allocation of specific parts to individual governors is here made:

1. *A. Platorius Nepos.*
   (*a*) Building of broad wall, milecastles and turrets. Wall ditch. Turf wall and its structures.
   (*b*) Decision to build eleven forts on the Wall, and commencement of at least ten of them.

2. *Unidentified governor.*
   (*a*) Addition of Vallum.
   (*b*) Change from broad to narrow wall.
   (*c*) Reduction in size of Greatchesters, and decision to build Carrawburgh.
   (*d*) Extension of Wall to Wallsend and construction of Wallsend fort.
   (*e*) Replacement of turf by stone from Irthing to Red Rock Fault.
   (*f*) Addition of Drumburgh fort.
   (*g*) Commencement of outpost system (CIL vii, 978).
   (*h*) Commencement of Cumberland coastal system.

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3. *Sex. Iulius Severus.*
(*a*) Construction of Carrawburgh.
(*b*) Continuation of outpost system and Cumberland coastal defences.

4. *P. Mummius Sisenna.*
(*a*) Rebuilding of Carvoran fort in stone.
(*b*) Rebuilding of Castlesteads and Wall forts further west in stone.
(*c*) Rebuilding the Wall in stone from the Red Rock Fault westwards.

Appendix II: The spacing of forts on the Stanegate

The spacing of forts on the Stanegate may be worth noting. The writers assume the existence of a cohort-fort, not yet identified, at Newbrough, and leave out of account the fortlets (such as Halt-whistle Burn and Thorp). The distance by the Stanegate from Corbridge to Carlisle amounts to 41 Roman miles, and with five intervening forts one gets six fort-intervals, the average interval being just under seven Roman miles; the following table shows that the actual intervals are in fact fairly close to the average:

From	*To*	*Roman miles*
Carlisle	Old Church	$8\frac{1}{2}$
Old Church	Nether Denton	$6\frac{1}{3}$
Nether Denton	Carvoran	$5\frac{1}{4}$
Carvoran	Chesterholm	7
Chesterholm	Newbrough	7
Newbrough	Corbridge	7

Mr. Birley suggests to the writers that the spacing of forts on the Wall, as originally planned, may have been based on that already found convenient on the Stanegate, but the point is obviously incapable of proof.

Photograph 65.

MASONRY OF EASTERN REVETMENT OF VALLUM CAUSEWAY.

Photograph 66

EASTERN REVETMENT OF VALLVM CAUSEWAY: from south.

Photograph 67

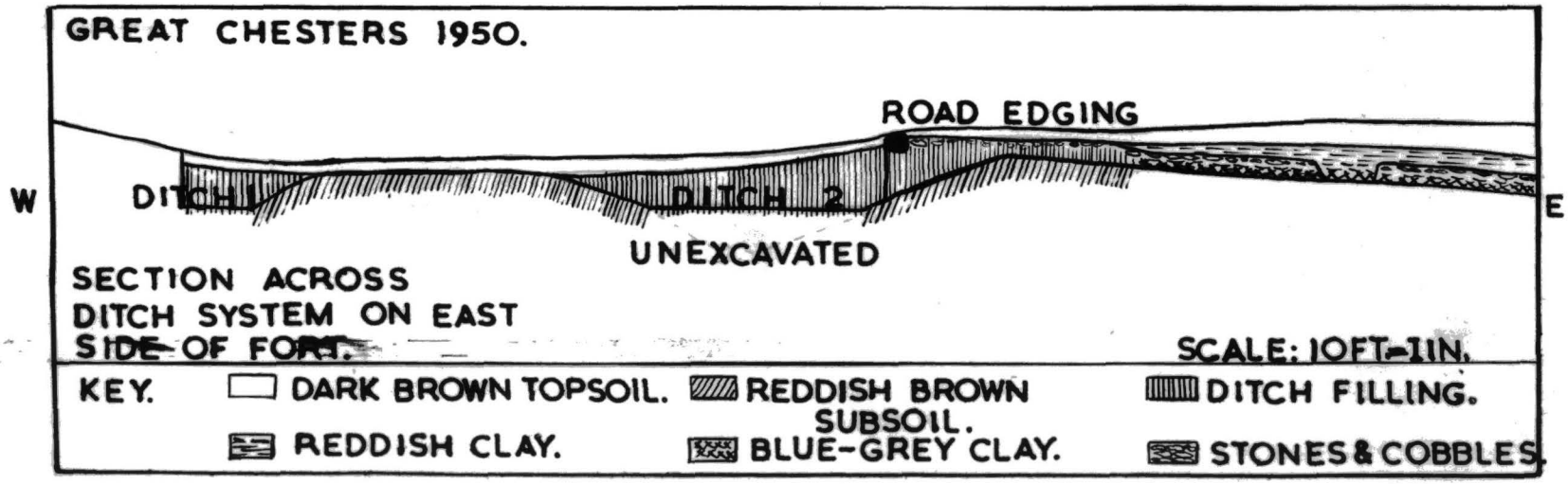
EASTERN REVETMENT OF VALLVM CAUSEWAY, from north-east.

Photograph 68

EASTERN REVETMENT OF VALLVM CAUSEWAY, from north.

Photograph 69.

COBBLING OF THE SECONDARY CAUSEWAY FILLING, from south-west.


GREAT CHESTERS 1950.
ROAD EDGING
W
DITCH 1
DITCH 2
E
UNEXCAVATED
SECTION ACROSS
DITCH SYSTEM ON EAST
SIDE OF FORT.
SCALE: 10FT-1IN.
KEY.
DARK BROWN TOPSOIL.
REDDISH BROWN SUBSOIL.
DITCH FILLING.
REDDISH CLAY.
BLUE-GREY CLAY.
STONES & COBBLES.

Section 70.

Plan 71.

GREAT CHESTERS.
DITCH COMPLICATION
SOUTH-EAST OF FORT.
1951.

Photograph 72.

DITCH RUNNING SOUTH-EASTWARDS FROM OUTER DITCH ON EAST SIDE OF GREAT CHESTERS.

Photograph 73.

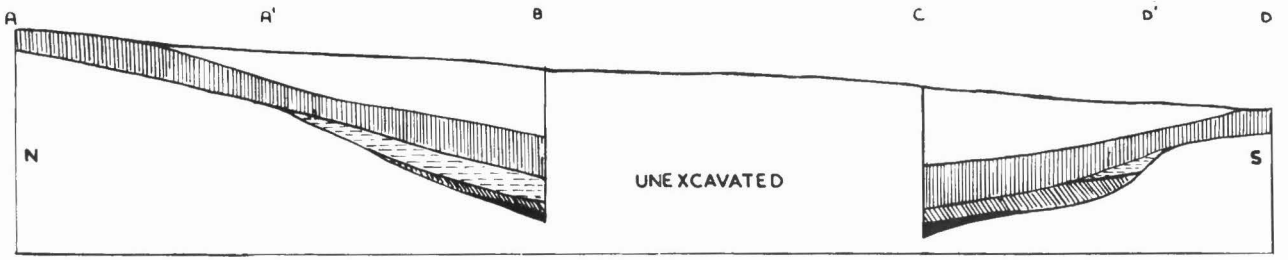
(FGS.) THE FOUR DITCHES ON THE WEST OF GREAT CHESTERS

Section 74.

Photograph 75.

(Dr. St. Joseph) THE FORT AND VALLVM DIVERSION AT CARVORAN.

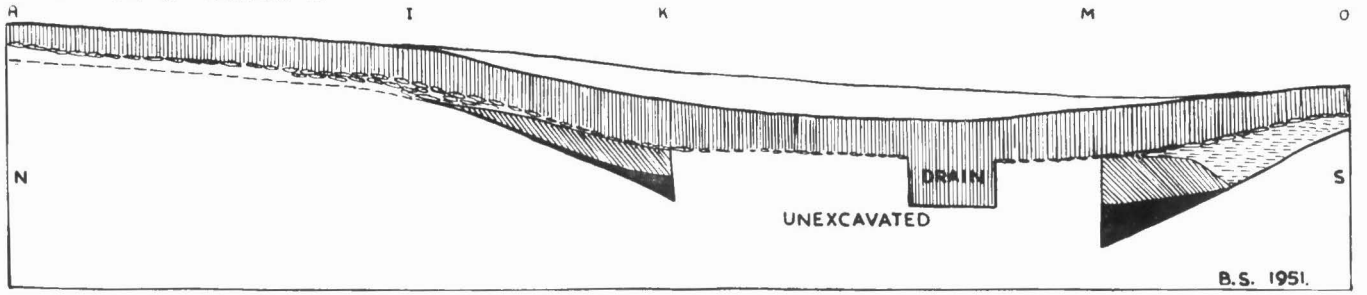
THE VALLUM AT CARVORAN: SECTION OF TRENCH I.



Red quarry material.
Old topsoil.
Soft grey silt.
Yellowish clay till.
Black silt.
Metalling.

Scale: 1inch=3feet.

SECTION OF TRENCH II.



Photograph 77.

METALLING ON THE NORTH BERM OF THE VALLUM AT CARVORAN : looking south.

Photograph 78.

THE SOUTHERN SLOPE OF THE VALLUM DITCH.

Photograph 79.

DITCH FILLING AND SUPERIMPOSED CROSSING:
at south side, looking north.

Photograph 80

DITCH FILLING AND SUPERIMPOSED CROSSING:
at north side, looking south.

APPENDIX III.

4-55.

THE SPACING OF THE FORTS ON HADRIAN'S WALL.

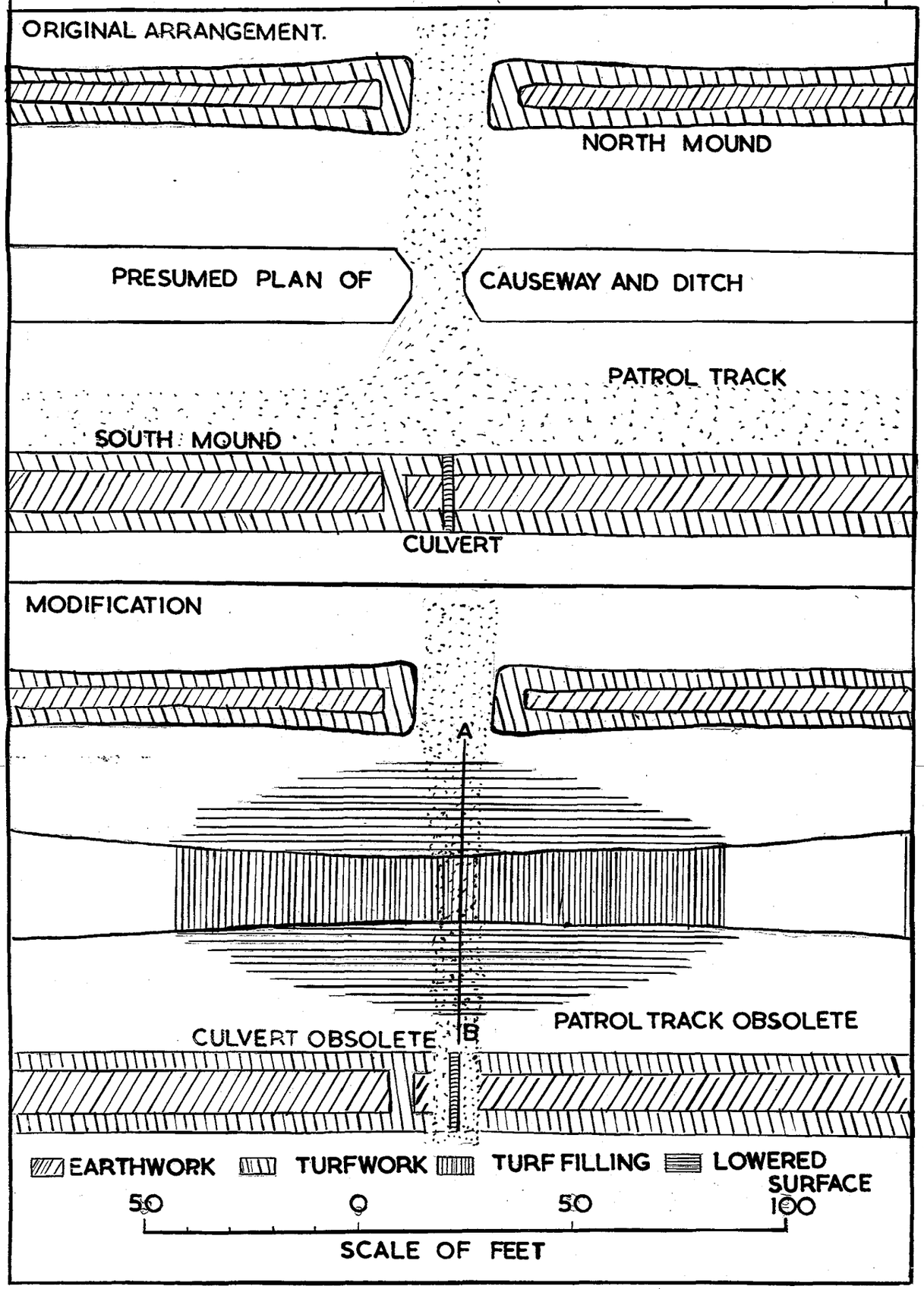
By BRENDA SWINBANK and J. E. H. SPAUL.

SOCIETY OF ANTIQUARIES OF NEWCASTLE UPON TYNE.
Overprint from *Archæologia Aeliana*, 4th series, vol. xxix.

GATESHEAD ON TYNE.
NORTHUMBERLAND PRESS LIMITED, SOUTH SHORE ROAD.

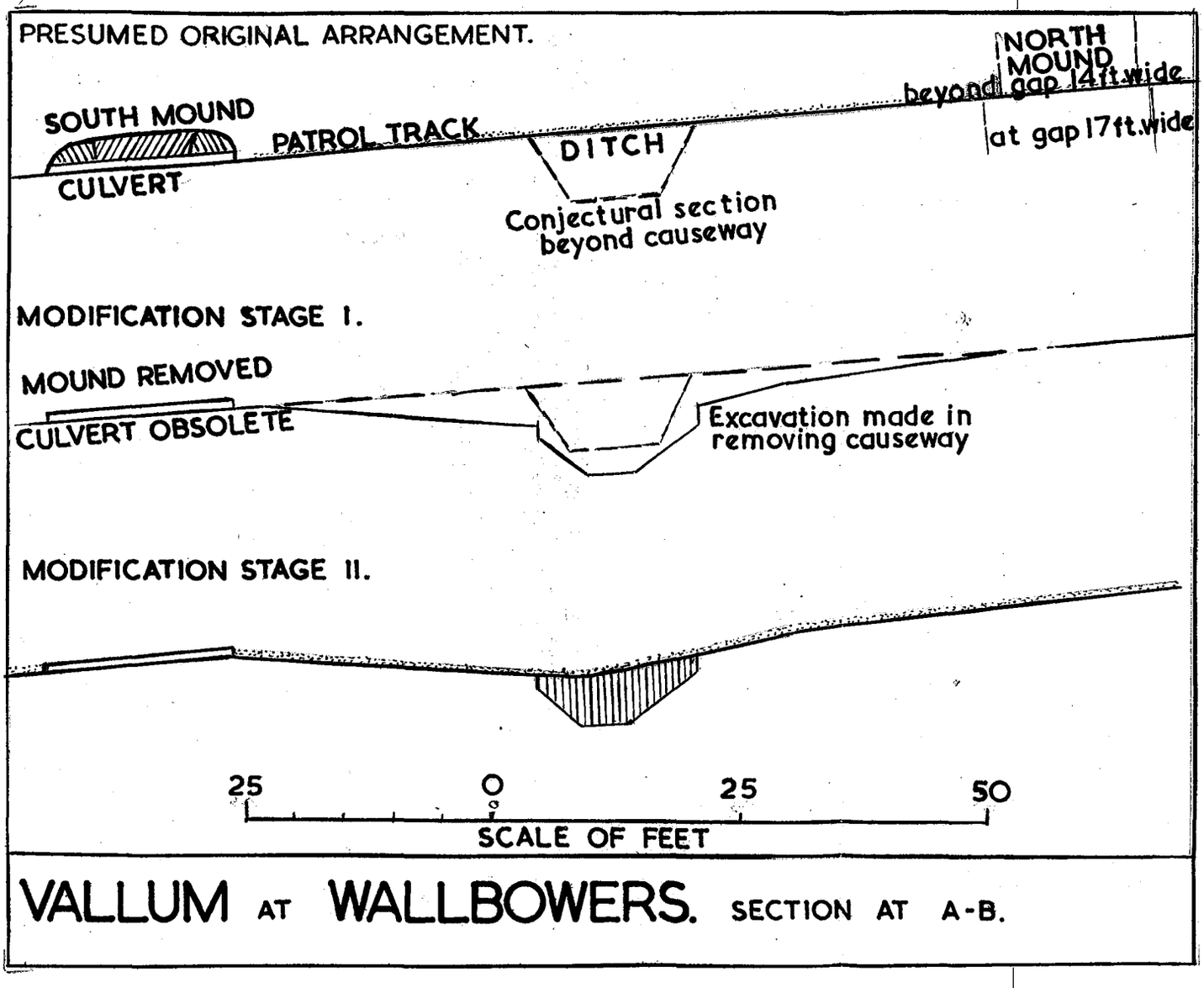
1951.

VALLUM AT WALLBOWERS. TURF WALL MILECASTLE 51.



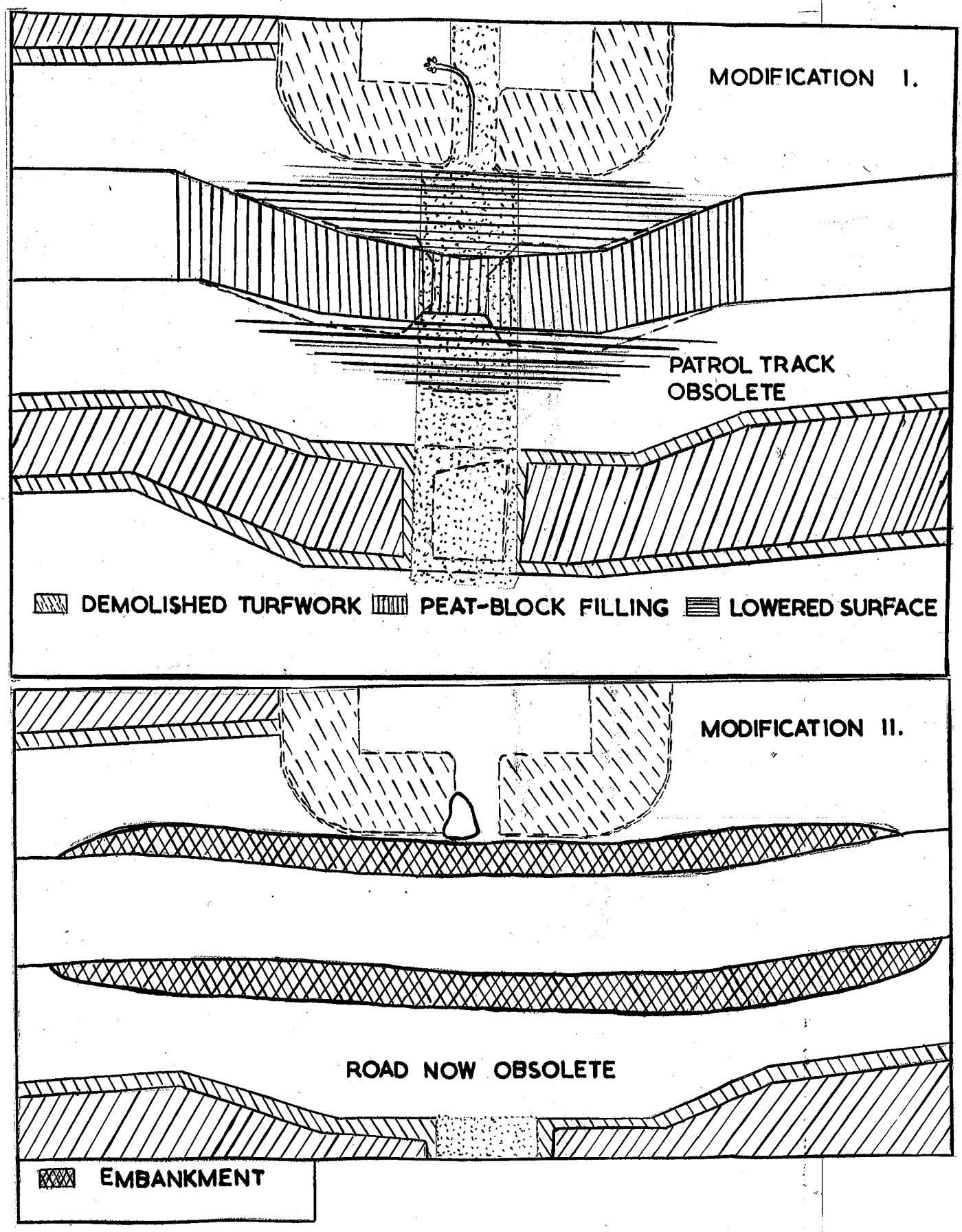
Plan 85.

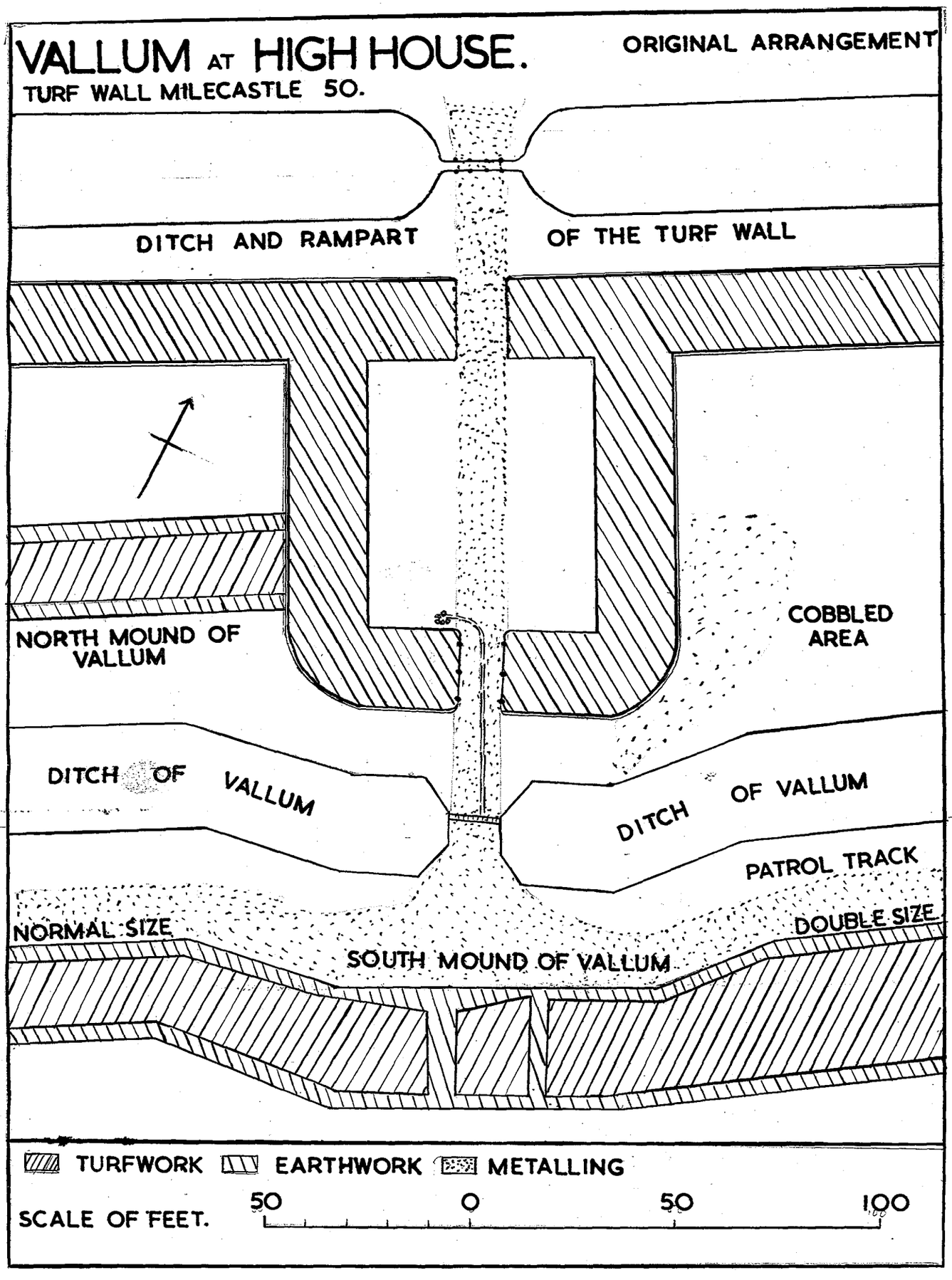
Section 86.



VALLUM AT WALLBOWERS. SECTION AT A-B.

Plan 84


MODIFICATION I.
PATROL TRACK OBSOLETE
DEMOLISHED TURFWORK
PEAT-BLOCK FILLING
LOWERED SURFACE
MODIFICATION II.
ROAD NOW OBSOLETE
EMBANKMENT


VALLUM AT HIGH HOUSE.
ORIGINAL ARRANGEMENT
TURF WALL MILECASTLE 50.
DITCH AND RAMPART
OF THE TURF WALL
NORTH MOUND OF VALLUM
COBBLED AREA
DITCH OF VALLUM
DITCH OF VALLUM
PATROL TRACK
NORMAL SIZE
DOUBLE SIZE
SOUTH MOUND OF VALLUM
TURFWORK
EARTHWORK
METALLING
SCALE OF FEET.
50
0
50
100

Plan 83.

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VIII.—THE SPACING OF THE FORTS ON HADRIAN'S WALL

By Brenda Swinbank and J. E. H. Spaul

(Read on 31st May, 1950)

The following abbreviations are employed:

AA[4] = *Archæologia Aeliana*, 4th series.
CIL = *Corpus Inscriptionum Latinarum*.
CW[1, 2] = *Cumberland & Westmorland Transactions* O.S., N.S.
HB = *Handbook to the Roman Wall*, 10th edition (1947).
JRS = *Journal of Roman Studies*.
NCH = *Northumberland County History*.
PSAN[3, 4] = This society's *Proceedings*, 3rd, 4th series.
PSAScot = *Proceedings of the Society of Antiquaries of Scotland*.

The writers wish to thank Mr. Eric Birley and Mr. J. P. Gillam for their unfailing help and encouragement in the preparation of this study; Professor I. A. Richmond has also read it in draft and has contributed a number of valuable suggestions, which have been taken into account in the final version here printed. The text is given substantially as it was read to the Society in May, but reference has been made in one or two footnotes to results obtained by excavations, conducted by the first-named writer, in September, 1950.

I.—The forts on Hadrian's Wall and the Antonine Wall.

In comparing Hadrian's Wall with the Antonine Wall in Scotland, the dissimilarity in the spacing of the forts is immediately apparent. If the Antonine Wall had nineteen forts along its forty miles, as Sir George Macdonald concluded,[1] a simple calculation will show that the forts should

[1] *Roman Wall in Scotland*, 2nd edition (1934).

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occur at an average distance of two and one-tenth miles or approximately every 3,700 yards. In fact the distance from Castlecary to Westerwood is 3,047 yards, Westerwood to Croy Hill 3,203, to Bar Hill 3,070, to Auchendarry 3,152, and from Cadder to Balmuildy 4,075, to New Kilpatrick 4,832, to Castle Hill 2,610, to Duntocher 3,365, and to Old Kilpatrick 4,125 yards; in this stretch are seen the greatest and the least distances between any two known forts along the Antonine Wall. A similar calculation for Hadrian's Wall (for which the *Notitia Dignitatum,* the Rudge Cup and surviving structures give a total of seventeen forts for a distance of eighty Roman miles) shows that the average interval should be five Roman miles; but Stanwix is as much as nine Roman miles from Castlesteads, and Carvoran is no more than three miles from Greatchesters on the east and Birdoswald on the west. There is thus great variation in the spacing of forts on Hadrian's Wall.

A suggestion made by Professor Richmond,[2] that there are two distinct series of forts in relation to the Vallum, makes it desirable to examine the course of the Vallum in this connection.

II.—The Vallum.

As the Vallum has not been traced further east than milecastle 5,[3] there is no evidence for its behaviour at Newcastle (in any case, it did not extend as far east as Wallsend), so that the survey must start with Benwell.[4] At this fort the Vallum makes an asymmetrical diversion to the south, in order to avoid the site of the fort, and leaves an original causeway of undisturbed boulder-clay, revetted with stone, opposite the south gate of the fort. There is no diversion at Rudchester,[5] because the Vallum runs well to the south of the fort, but there is a diversion at Halton;[6] and at Chesters, where the Vallum is visible on the west side of the fort running on a line which would coincide with the

[2] HB p. 20. [3] HB p. 47. [4] AA[4] xi, 177. [5] CW[1] xv, 178. [6] NCH x, 468.

latter's south ditch, another diversion seems likely.[7] No attempt has been made to find an original causeway at any of these three forts. At Carrawburgh excavation has shown[8] that the Vallum was obliterated to allow the building of the fort. Housesteads is like Rudchester, except that an original causeway across the Vallum there has been found by excavation.[9] Chesterholm is really a Stanegate fort, lying a mile south of the Wall, though it is included in the *Notitia* as a fort *per lineam valli*; from structural, ceramic and epigraphic evidence it is clear that it was abandoned when Hadrian's Wall was built, and not re-occupied until c. 163, so that it may be left out of account in the present discussion.[10] At Greatchesters, as at Rudchester and Housesteads, the Vallum runs well to the south of the fort; there are visible traces of a causeway, but it is not known whether it is an original one or if, in that case, it went with the fort or with the milecastle which preceded it.[11] Carvoran is like Chesterholm, technically a Stanegate fort, but is deliberately cut off from the Wall zone by a northerly diversion of the Vallum, as though avoiding an earlier structure on a different alignment: this diversion, however, may simply be to avoid a bog.[12] At Birdoswald it is now clear that the fort was built first, and that the Vallum was squeezed through the gap between the fort and the escarpment, with no north mound, a double-sized south mound and an original causeway opposite the south gate of the fort.[13] Although the fort at Castlesteads lies some 300 yards south of the Wall, the Vallum sweeps round at a distance of 90 yards, as though deliberately including a fort within the Wall zone.[14] Although diversions have not been proved

[7] *Cf.* PSAN[3] ii, 284.
[8] *Durham University Journal*, xxix, 97; JRS xxv, 203.
[9] AA[4] ix, 225; xi, 188.
[10] *Cf.* HB p. 136.
[11] *Cf.* HB p. 150. Excavations in September 1950 have proved that this causeway is a stone-revetted one, like those at Benwell, Housesteads and Birdoswald, to be associated therefore with the fort and not with the milecastle.
[12] *Cf.* Horsley, *Britannia Romana* (1732), p. 151.
[13] HB p. 173 and plan at p. 169. [14] CW[1] xv, 254; CW[2] ii, 385 and iii, 339.

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at Stanwix[15] or Burgh-by-Sands,[16] the known course of the Vallum in those sectors makes it probable that they occurred; original causeways, too, are likely but have not yet been found. The relation of Drumburgh[17] to the Vallum is unknown, and it is not known what happens to the Vallum when it approaches Bowness.[18]

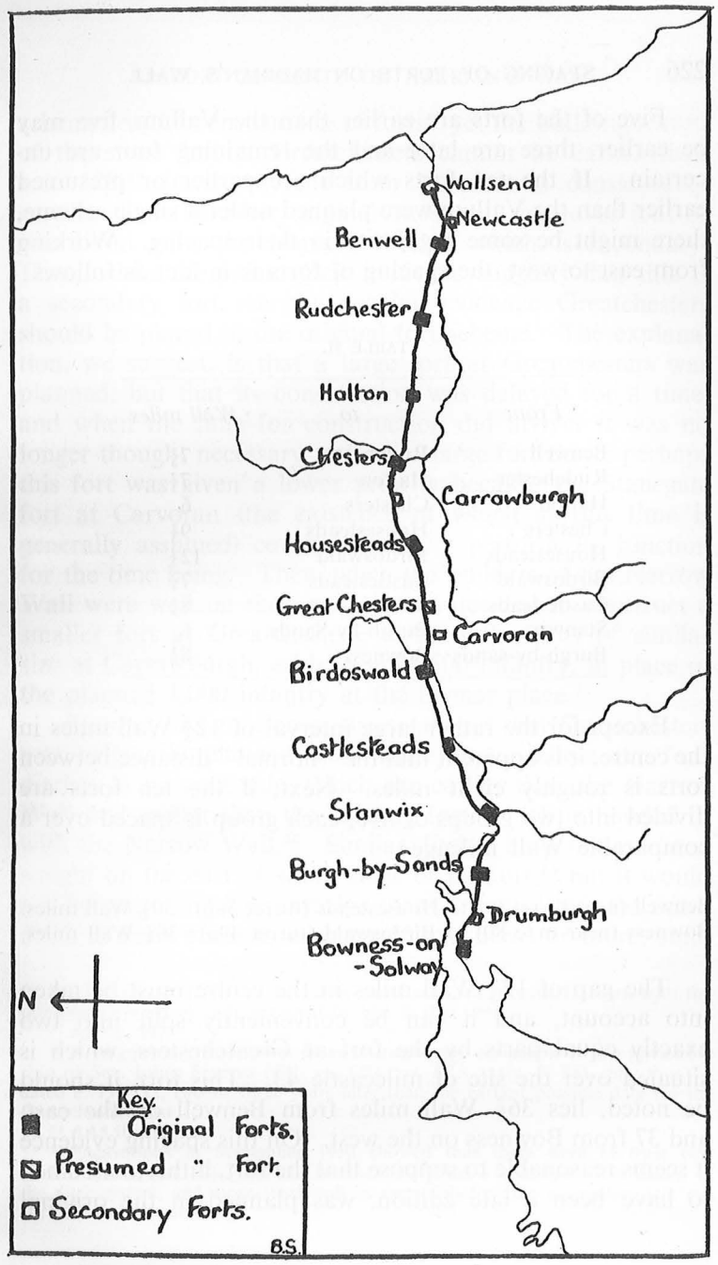
III.—Classification of the forts.

It is now clear that if the Vallum turns to avoid a particular site, that is *prima facie* evidence that the planning, if not the building, of a fort on that site took place before the construction of the Vallum; the converse is true where the Vallum runs underneath a fort. The forts can now be classified into earlier, uncertain and later than the Vallum, as follows:

TABLE I.

Fort	*Vallum deviation*	*Original causeway*	*Relationship*
Wallsend	No	Unnecessary	Later?
Newcastle	Unknown	Unknown	Unknown
Benwell	Yes	Yes	Earlier
Rudchester	No	Likely	Presumably earlier
Halton	Yes	Likely	Earlier
Chesters	Presumed	Likely	Presumably earlier
Carrawburgh	No	No	Later
Housesteads	No	Yes	Earlier
Chesterholm	No	No	Later
Greatchesters	No	Yes[19]	Unknown[19]
Carvoran	Yes, to north	Perhaps?	Later
Birdoswald	Yes	Yes	Earlier
Castlesteads	Yes	Likely	Earlier
Stanwix	Presumed	Likely	Presumably earlier
Burgh-by-Sands	Presumed	Likely	Presumably earlier
Drumburgh	Unlikely	Unlikely	Later?
Bowness	Unlikely	Perhaps?	Presumably earlier

[15] HB p. 200. [16] HB p. 205. [17] HB p. 207. [18] HB p. 209.
[19] Excavations in September 1950 confirmed the existence of an original causeway; for the relationship of the fort *as built* to the Vallum see below.



SKETCH PLAN OF FORTS ON HADRIAN'S WALL.

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Five of the forts are earlier than the Vallum, five may be earlier, three are later and the remaining four are uncertain. If the ten forts which are earlier or presumed earlier than the Vallum were planned under a single scheme, there might be some regularity in their spacing. Working from east to west, the spacing of forts is in fact as follows:

TABLE II.

From	*to*	*Wall miles*
Benwell	Rudchester	$7\frac{1}{3}$
Rudchester	Halton	$7\frac{2}{3}$
Halton	Chesters	6
Chesters	Housesteads	$9\frac{1}{3}$
Housesteads	Birdoswald	$12\frac{2}{3}$
Birdoswald	Castlesteads	$7\frac{2}{3}$
Castlesteads	Stanwix	$8\frac{2}{3}$
Stanwix	Burgh-by-Sands	6
Burgh-by-sands	Bowness	$8\frac{1}{3}$

Except for the rather large interval of $12\frac{2}{3}$ Wall miles in the centre, it is apparent that the "normal" distance between forts is roughly eight miles. Next, if the ten forts are divided into two groups of five, each group is spaced over a comparable Wall mileage:

Benwell (near turret 6*a*) to Housesteads (turret 36*b*)=$30\frac{1}{3}$ Wall miles.
Bowness (near m/c 80) to Birdoswald (turret 49*a*)=$30\frac{2}{3}$ Wall miles.

The gap of $12\frac{2}{3}$ Wall miles in the centre must be taken into account, and it can be conveniently split into two exactly equal parts by the fort at Greatchesters, which is situated over the site of milecastle 43. This fort, it should be noted, lies $36\frac{2}{3}$ Wall miles from Benwell on the east, and 37 from Bowness on the west. On this spacing evidence it seems reasonable to suppose that the fort, hitherto assumed to have been a late addition, was planned in the original

scheme for the construction of forts: yet the building-record of the stone fort at Greatchesters cannot be earlier than A.D. 128,[20] in its present form the fort is considerably smaller than the other original ones, and moreover it is of one build with the Narrow Wall,[21] which is secondary. Thus, while the *prima facie* evidence suggests that this is a secondary fort, on the spacing evidence Greatchesters should be placed in the original fort scheme. The explanation, we suggest, is that a large fort at Greatchesters was planned, but that its construction was delayed for a time, and when the time for construction did arrive, it was no longer thought necessary to have a large fort there; perhaps this fort was given a lower priority because the Stanegate fort at Carvoran (the existence of which at this time is generally assumed) could adequately perform its function for the time being. Then, when the builders of the Narrow Wall were well on their way, it was decided to construct a smaller fort at Greatchesters, and another fort of similar size at Carrawburgh, each to hold 500 infantry, in place of the planned 1,000 infantry at the former place.[22]

Another fact reinforces the argument that Greatchesters was originally planned as a large fort. There are four ditches at its west side, which are earlier than the Narrow Wall and earlier than the existing fort, which is bonded in with the Narrow Wall.[23] Similar ditches have not yet been sought on the east or south sides of the fort,[24] but it would not be surprising if excavation were to reveal that the outer ditch at least encloses a space of five acres or more, suffi-

[20] CIL vii, 730, from the site of its *porta praetoria*, credits Hadrian with the title *p(ater) p(atriae)*, only accepted by him in that year.
[21] AA[4] ii, 197.
[22] A fragmentary inscription from Carrawburgh, assignable to the governorship of Sex. Iulius Severus (CIL vii, 620*a*, *cf.* JRS xxxiv, 87-88), may thus be dated *c.* 130-132, two or three years later than the earliest possible date for the Greatchesters text.
[23] AA[4] ii, 197.
[24] Excavations in September 1950 showed that there were at least two ditches on the east side; but the weather prevented a complete examination of the ditch-system, and more work will be needed before the suggestion here put forward can be confirmed.

APPENDIX III.

cient to contain a large fort of the Housesteads type. Excavation in September 1950 has proved the existence of an original fort causeway of the Benwell type across the Vallum south of the fort.

Wallsend was not in the original scheme.[25] It is at this point that the narrow wall complicates the picture. Its exact relationship to the Vallum is uncertain, but it seems certain that the Vallum was at least begun before the change to the narrow wall took place. Although it may be argued that Wallsend was planned as part of the original fort scheme but that its construction was delayed until the change had been made to the narrow wall gauge (as was the case with Greatchesters), it seems unlikely that this was so; for Wallsend was a small fort, of one build with the narrow wall, and the Vallum does not extend further east than Newcastle: and these are sufficiently strong reasons for supposing that Wallsend fort was not part of the original fort scheme, but was a secondary addition to that scheme.

IV.—The placing of the forts.

Working, then, from the assumption that there were eleven forts originally planned, for the distance of 76 miles of Wall from Hadrian's Bridge at Newcastle upon Tyne to Bowness-on-Solway, and assuming the possibility that forts were originally intended to be placed at either end of the Wall (as was the case at Bowness), there are ten "fort intervals" for 76 miles, giving approximately $7\frac{2}{3}$ Wall miles for the normal interval between adjacent forts. More precisely, 76 Wall miles would allow eight intervals of $7\frac{2}{3}$ and two of $7\frac{1}{3}$ Wall miles.

The spacing of the forts[26] may give a valuable clue to the order in which they were planned, at least, if not the order of their construction—whether it was from east to west, from west to east or both at the same time. Beginning from

[25] HB p. 41.

[26] See map at end of HB; MacLauchlan's *Survey of the Roman Wall*; O.S. maps, especially the 25 in. series.

the west coast, Bowness is where it is expected, replacing milecastle 80, thus being the western terminal fort of the Wall. Burgh-by-Sands should be $7\frac{2}{3}$ miles further east, that is, replacing turret 72*a*; but in fact it seems to replace turret 71*b* (though it must be pointed out that the milecastles and turrets of the western sector of the Wall have not yet all been identified). There seem to be two possible explanations of this peculiarity:

(*a*) The fort was placed further east in order to guard the northern approach, by the eastern edge of Burgh Marsh (which, though invaluable for obstructing raiders, would be an obstacle for the cavalry garrison of the fort).

(*b*) The river Eden once flowed further south, where Burgh Marsh now is, so that the fort could not be placed in the planned position.

Stanwix should be situated over turret 64*b*; but in fact it has been moved a mile westwards, to guard the crossing of the river Eden, occupying the site of turret 65*b*. Castlesteads ought to be over milecastle 57; it is indeed very close to that milecastle, but it has been placed on the summit of a steep declivity above the Cambeck, some hundred yards south of the Wall: the advantage of such a situation needs no comment. Birdoswald fort is in its calculated position, overlying turret 49a;[27] it occupies a wonderful site, high on a summit above the Irthing escarpment. Greatchesters, the centre fort, should have been over milecastle 42, which is equidistant from Hadrian's Bridge on the east and Bowness on the west, and is $7\frac{1}{3}$ miles from Birdoswald; but in fact it overlies milecastle 43,[28] which is almost equidistant from Benwell and Bowness.

[27] PSAN[4] x, 274.

[28] JRS xxx, 161, 163-164. The difference of $\frac{1}{3}$ mile is accounted for by the fact that an interval of $7\frac{2}{3}$ miles in each case would produce a total of $76\frac{2}{3}$ miles, whereas the Wall is only 76 miles from Hadrian's Bridge to Bowness; $\frac{2}{3}$ of a mile have to be omitted, and it seems that the Romans intended to effect this by making the two central intervals each $7\frac{1}{3}$ instead of $7\frac{2}{3}$ miles.

APPENDIX III.

There are two possible explanations of the peculiarities in the spacing of the forts in the eastern half of the Wall:

Theory A:

The Wall began at Hadrian's Bridge. The extension to Wallsend had not yet been contemplated. Why, then, was Benwell (the eastern terminal fort at this stage) not placed closer to the bridge? It can only be suggested that the bridge was thought to be sufficiently guarded by the garrison of milecastle 4, then the first milecastle on the Wall; and the first fort, instead of standing in the hollow to guard the bridge, was built on the crest of the hill, with a commanding all-round view, but still within easy reach of the bridge, $2\frac{1}{3}$ Roman miles to the west, a little west of turret 6*a*.

It seems that, in view of the first fort having been built further west than Hadrian's Bridge, the interval between the forts in this eastern sector was reduced from $7\frac{2}{3}$ to $7\frac{1}{3}$ Wall miles, so that the fort builders working from east to west should not upset the spacing of those working from west to east. They were to meet, it may be presumed, half-way along the Wall, that is at milecastle 42, where the central fort was to be placed. Rudchester, therefore, occupies its correct position, some $7\frac{1}{3}$ miles from Benwell, presumably overlying turret 13*b*. Halton should cover milecastle 21, but in fact it lies slightly west of turret 21*a*, $7\frac{2}{3}$ miles from Rudchester; if an explanation of the interval is required, it may well be that it was to avoid having to place a fort on the awkward slope of Down Hill, where milecastle 21 stood. Chesters, the next fort, should be situated over turret 28*a*, but in fact it overlies turret 27*a*.[29] The reason for this is obvious: the fort was moved a mile east of its planned position, so as to guard the crossing of North Tyne —and to obtain the ample water-supply necessary for a cavalry garrison. (By contrast, when we consider the trouble and expense entailed by bringing an adequate water-supply

[29] PSAN[4] x, 274; JRS xxxvi, 134.

to the cavalry fort at Benwell, it is clear that there must have been a compelling reason for placing it there and not at the bridgehead: the outlook and the strength of the hill-top site were held to compensate for the increased cost of water-supply.)

Housesteads fort should replace turret 35*b*, but in fact it overlies turret 36*b*.[30] Here, too, the reason can easily be found in the lie of the ground: the ridge on which the fort stands is obviously more suitable for it than the depression of Busy Gap would have been, and the necessary water-supply could be obtained with little difficulty from the Knag Burn.

Finally we come to Greatchesters, the planned position of which should be over milecastle 43 (that is, 35*b* plus $7\frac{1}{3}$ Wall miles), and that is where the fort is. In other words, the fort builders working from east to west had encroached one mile on the territory assigned to the group working from west to east: as has been said above, milecastle 42 is in the centre of the Wall, from Hadrian's Bridge to Bowness; but measuring from the initial terminal fort at Benwell (placed further westward than anticipated), milecastle 43 is almost half-way between the two terminal forts (as opposed to the two ends of the Wall itself). The average interval between Benwell and Greatchesters is precisely $7\frac{1}{3}$ miles; and it may be added that milecastle 43 provided an ideal situation for a fort, while it would have been out of the question to fit one into the steep-sided gap where milecastle 42 stands.

Theory B:

Theory A, with its modified $7\frac{1}{3}$ mile interval, does not account for the fact that both Birdoswald and Housesteads are $6\frac{1}{3}$ Wall miles from Greatchesters, and suggests that it was a mere accident; Theory B maintains that this spacing was deliberate, and that the two fort intervals in the centre, which should have been $7\frac{1}{3}$ miles each, were reduced to

[30] PSAN[4] x, 274; HB p. 113.

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$6\frac{1}{3}$ miles. The fundamental difference between the two hypotheses is that Theory A assumes that the forts in the eastern sector were planned in the order in which they were built, from east to west; Theory B assumes that the forts were planned from west to east, but built from east to west, and furthermore that Greatchesters was planned to be equidistant from Bowness and Benwell. The two missing miles in the centre (because the intervals have been reduced to $6\frac{1}{3}$ instead of $7\frac{1}{3}$ Wall miles) must on this hypothesis be inserted at the eastern end of the Wall; thus the eastern terminal fort should have been at milecastle 6 instead of at either Hadrian's Bridge or the Benwell site. The fort at Greatchesters is equidistant from Bowness and milecastle 6; Rudchester comes in its correct position, $7\frac{2}{3}$ miles from milecastle 6; Halton also is in its correct position, $7\frac{2}{3}$ miles from Rudchester. Chesters is out of position for the reasons given above, under Theory A. Housesteads is in position, $15\frac{1}{3}$ miles from Halton. In other words, the only misplaced fort, apart from Chesters, is Benwell, which is 620 yards west of its planned position; and when one considers that a fort placed at milecastle 6 would be half-way down the hill, with adequate water no easier to obtain than on the summit, the main reason for moving it 620 yards further west will have been to get the better outlook over the Northumberland plain. Theory B, it will be noted, has one less fort out of planned position than Theory A.

V.—The garrisoning of the Wall.

It seems reasonable to expect that there was some logical system in the garrisoning of the eleven original forts which have been dealt with above. It seems certain that Benwell,[31] Rudchester,[32] Halton,[33] Chesters,[34] and Burgh-by-Sands[35] were designed as cavalry forts, each to accommodate 500 men; these five forts have the same basic features and cover similar areas, and the internal buildings of the three of them

[31] AA[4] xix, 1-43; HB p. 50.
[32] HB p. 59.
[33] HB p. 68.
[34] HB pp. 83, 90.
[35] HB p. 205.

which have been examined in detail (Benwell, Halton and Chesters) include cavalry barracks and stables. Stanwix[36] was a cavalry fort for 1,000 men (only one unit of that type being known in the Hadrianic Army of Britain); while Housesteads[37] is known to have accommodated a milliary cohort. It seems clear that Birdoswald held an infantry garrison from the first, though its plan and its relationship with the Wall suggest that it was at first intended for a cavalry regiment:[38] it seems that the projecting forts with six gates can be classed as cavalry forts, and indeed it is difficult to see any other reason for their having side gateways north of the Wall, except to allow a cavalry force to issue rapidly northwards through three main gateways.

There remain Greatchesters, Castlesteads and Bowness to be accounted for. The stone fort at Bowness is big enough to accommodate either a milliary cohort, with two acres to spare, or a quingenary *ala* and the greater part of a quingenary cohort as well. But there is no reason to believe that the existing remains at Bowness belong to the first half of the second century; and even if they do, they are not necessarily Hadrianic. The possibility has been considered, for some time past, that the forts west of the Red Rock Fault were originally of turf, and were later replaced in stone. It is known that that was the case with the Turf Wall in the western sector; and excavation at milecastle 79 in 1949[39] showed that the replacement of turf by stone at that point cannot have taken place before the end of Hadrian's reign at earliest. There is thus a strong case for supposing a similar date for the replacement of turf by stone in the forts, and it may be suggested that there was originally a turf fort of about five acres, to accommodate 500 cavalry, at Bowness.

The unusually large fort at Stanwix, too, may be thought likely to overlie an equally large turf fort; but one may wonder whether it did not project north of the Wall, like

[36] HB p. 198.
[37] HB p. 113.
[38] HB p. 172.
[39] Report to be published in CW[2].

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the other cavalry forts—unless, as at Bowness, the lie of the ground was thought unsuitable for such a projection.

There is evidence for a turf fort below the existing stone one at Castlesteads, though its size and precise layout have not been established.[40] The Vallum sweeps round at a distance of 90 yards, and there is therefore enough room between it and the Cambeck to include a large turf fort, presumably of Hadrianic date, capable of accommodating either an *ala* 500 strong or a milliary cohort; and in view of the fort's situation, it seems that the latter is more likely.

Finally, we come to the garrison of Greatchesters. As has been said, the writers would be quite prepared to find that the extraordinary ditch system on the west of this fort was repeated on the east, and that the outermost ditch encloses a space substantially larger than that occupied by the existing fort: in other words, that a larger fort was originally planned here, and its outer ditch dug to mark its position, but that when the fort builders arrived, it had been decided to build two small forts, one of them here and one at Carrawburgh, instead of one big one at Greatchesters. Carvoran, which had plugged the gap for the time being, and had been excluded from the military zone proper by the Vallum, was presumably now abandoned, only to be reoccupied in the closing years of Hadrian's reign.[41] It is suggested, therefore, that Greatchesters was originally planned to house a milliary cohort, but that in the event quingenary cohorts were established there and at Carrawburgh.

To summarize, it looks as though in the original fort scheme there was to be a block of 4,000 infantry in the centre, with a block of 2,000 cavalry on either flank. But this scheme never materialized, as the result of the introduction of a series of modifications. Carrawburgh was added, to plug the gap of nine miles between Chesters and Housesteads; so were Wallsend and Drumburgh. By the end of Hadrian's reign, the Wall system of milecastles and

[40] CW² xxxiv, 163f.; HB p. 192. [41] PSAN⁴ ix, 250.

turrets had been continued for 50 miles or more along the Cumberland coast,[42] with a number of forts spaced more widely than those on the Wall, and it is possible that the fort at South Shields, 4½ miles east of Wallsend, should be regarded as representing an eastward extension of the frontier.[43] Outpost forts were constructed at Bewcastle, Netherby and Birrens, but it is not yet known what types of unit they housed under Hadrian.[44] Carvoran was reoccupied *c.* A.D. 136, a stone fort for a cohort 500 strong being built there.[45] One may wonder, on the analogy of Greatchesters and Carrawburgh, whether the rebuilding of Castlesteads in stone was intimately connected with the rehabilitation of Carvoran, two units 500 strong at those two sites replacing one 1,000 strong at the former of them. The importance of Carvoran, guarding the gap between Irthing and South Tyne, can hardly be exaggerated; on the other hand, the reduction in size of garrison at Castlesteads may be connected with the building of the outpost fort at Netherby—or the rebuilding at Castlesteads may have occurred considerably later. But if the replacement of the turf wall by stone did take place late in the reign of Hadrian, as Professor Richmond has suggested, it seems most likely that the stone fort at Castlesteads is Hadrianic also.

To recapitulate: the original design of Hadrian's Wall comprised a stone wall, with milecastles and turrets, from Newcastle to Irthing, and a similar wall in turf from Irthing to Bowness; the Stanegate forts, with fortlets added between them, were at first thought sufficient military backing to the Wall. The first modification was the addition of eleven forts to the Wall itself (and the abandonment of the Stanegate forts), though in fact only ten of the eleven were built to

[42] HB pp. 212-214.

[43] The fort at Newcastle may have been another addition at this stage, but evidence is not yet available.

[44] Bewcastle: CW² xxxviii, 195-287. Netherby: CIL vii, 961. Birrens: PSAScot lxxii, 275f.

[45] PSAN⁴ ix, 250.

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the intended plan. Very shortly after this came the construction of the Vallum and, at that time or later, the decision was taken to reduce the Wall from ten to eight feet in thickness, and to replace the turf wall by a stone wall from Irthing to the Red Rock Fault. The forts at Wallsend and Drumburgh were added, and there was a rearrangement of garrisons in the Chesters-Greatchesters sector. Still later came the reoccupation of Carvoran, most probably the rebuilding in stone of the fort at Castlesteads, and perhaps the replacement of the turf wall by stone wall from the Red Rock Fault westwards to Bowness; and by the end of Hadrian's reign a flourishing outpost system had been established, as well as a strong chain of defence along the Cumberland coast.

The following table summarizes the situation at the end of Hadrian's reign:

Wallsend	500 infantry	
Benwell	500 cavalry	
Rudchester	500 cavalry	2000 cavalry
Halton	500 cavalry	
Chesters	500 cavalry	
Carrawburgh	500 infantry	
Housesteads	1000 infantry	2000 infantry
Greatchesters	500 infantry	
Carvoran	500 infantry	
Birdoswald	1000 infantry	2000 infantry
Castlesteads	500 infantry	
Stanwix	1000 cavalry	
Burgh-by-Sands	500 cavalry	2000 cavalry
Drumburgh and Bowness	500 cavalry? and 500 infantry?	

Note: The writers assume that Drumburgh fort, too small to house a complete cohort, was occupied by part of one unit, the remainder of which shared Bowness fort with a complete unit.

In addition there were the outpost units at Birrens, Netherby and Bewcastle, and the garrisons of the forts on the Cumberland coast. The numerous additions to the original series show that the Romans had realized the shortcomings of their first scheme, and demonstrate increasing pressure on the frontier, which had to be met by increasing its garrison; the radical change in frontier policy effected by Pius becomes easier to understand in the light of this continual modification of the Hadrianic scheme.

Appendix I: The governors of Britain and Hadrian's Wall

It is reasonably certain that there were at least four Hadrianic governors concerned with the Wall:

1. A. Platorius Nepos, A.D. 122-*c.* 126.
2. The unidentified governor of the Bewcastle inscription, CIL vii, 978, *c.* A.D. 126-130.
3. Sex. Iulius Severus, *c.* A.D. 130-133.
4. P. Mummius Sisenna, attested A.D. 135.

It seems reasonable to suppose that some at least of the modifications which have been considered were due to the different policies of successive governors; tentative allocation of specific parts to individual governors is here made:

1. *A. Platorius Nepos.*
   (*a*) Building of broad wall, milecastles and turrets. Wall ditch. Turf wall and its structures.
   (*b*) Decision to build eleven forts on the Wall, and commencement of at least ten of them.

2. *Unidentified governor.*
   (*a*) Addition of Vallum.
   (*b*) Change from broad to narrow wall.
   (*c*) Reduction in size of Greatchesters, and decision to build Carrawburgh.
   (*d*) Extension of Wall to Wallsend and construction of Wallsend fort.
   (*e*) Replacement of turf by stone from Irthing to Red Rock Fault.
   (*f*) Addition of Drumburgh fort.
   (*g*) Commencement of outpost system (CIL vii, 978).
   (*h*) Commencement of Cumberland coastal system.

3. *Sex. Iulius Severus.*
(*a*) Construction of Carrawburgh.
(*b*) Continuation of outpost system and Cumberland coastal defences.

4. *P. Mummius Sisenna.*
(*a*) Rebuilding of Carvoran fort in stone.
(*b*) Rebuilding of Castlesteads and Wall forts further west in stone.
(*c*) Rebuilding the Wall in stone from the Red Rock Fault westwards.

Appendix II: The spacing of forts on the Stanegate

The spacing of forts on the Stanegate may be worth noting. The writers assume the existence of a cohort-fort, not yet identified, at Newbrough, and leave out of account the fortlets (such as Haltwhistle Burn and Throp). The distance by the Stanegate from Corbridge to Carlisle amounts to 41 Roman miles, and with five intervening forts one gets six fort-intervals, the average interval being just under seven Roman miles; the following table shows that the actual intervals are in fact fairly close to the average:

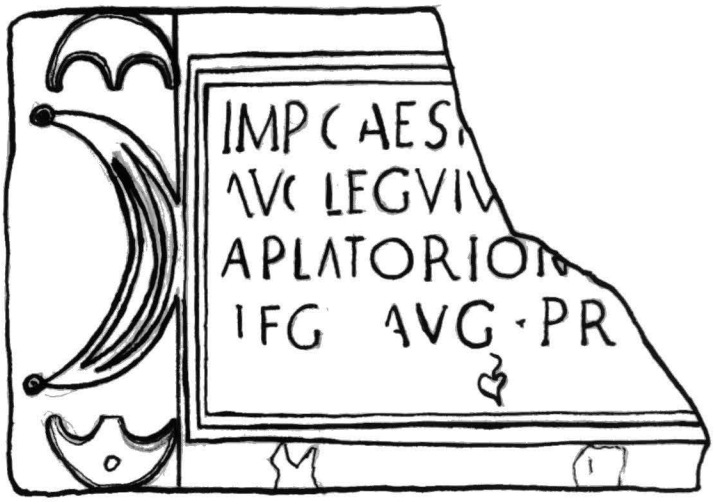
From	*To*	*Roman miles*
Carlisle	Old Church	$8\frac{1}{2}$
Old Church	Nether Denton	$6\frac{1}{3}$
Nether Denton	Carvoran	$5\frac{1}{4}$
Carvoran	Chesterholm	7
Chesterholm	Newbrough	7
Newbrough	Corbridge	7

Mr. Birley suggests to the writers that the spacing of forts on the Wall, as originally planned, may have been based on that already found convenient on the Stanegate, but the point is obviously incapable of proof.

HADRIANIC INSCRIPTIONS. Fig. 81.

1. BENWELL: A.A^{4}. xix plate iv.

2. HALTON: A.A^{4}. xiv plate xxiii.



3. CARRAWBURGH: L.S. 158; C.I.L. vii.620a; JRS. xxxiv 87.

(IMP. CAESARI TRAIANO)
(HADRIANO.AVG.P.P. SVB)
(SEX. IVLIO. SE)VERO.LEG.
(AVG. PR.PR)COH. I. AQVIT
(ANORVM) FECIT
(CVRANTE IVL)IO.NEPOTE
(PRA)EF

4. HOTBANK,milecastle 38: L.S.199; 10th. Edit.HB. 133.

5. GREAT CHESTERS: L.S.284; CIL.vii. 730.

6. CARVORAN: L.S. 301.

7,8,9. CARVORAN: PSAN.[4] ix. 250-6; JRS. xxxi. 142ff.

7 PRIM(ITIVI)
VA(LLA)VIT
P. C X (II)
SVB
FL. SECVNDO
PREF.

7 SILVANI
VALLAVIT
P CXII SVB
FLA. SECVNDO
(PRA)EF.

7 IVL CA(
VALLA (VIT)
P C(

10. HIGH HOUSE, Turf Wall milecastle 50:
CW² xxxv. 229; 10th. Edit. HB. 177.

IMP. CAES. TRAIANI

HADRIANI. AVGVSTI

(LEG. II. AVG) A. PLATORIO. NEPOTE.

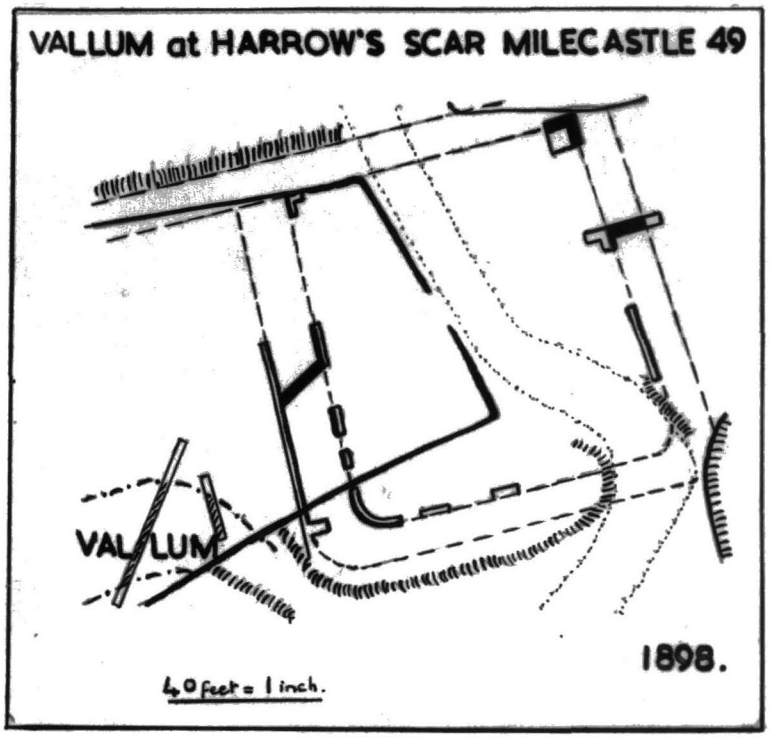
LEG. PR. PR.

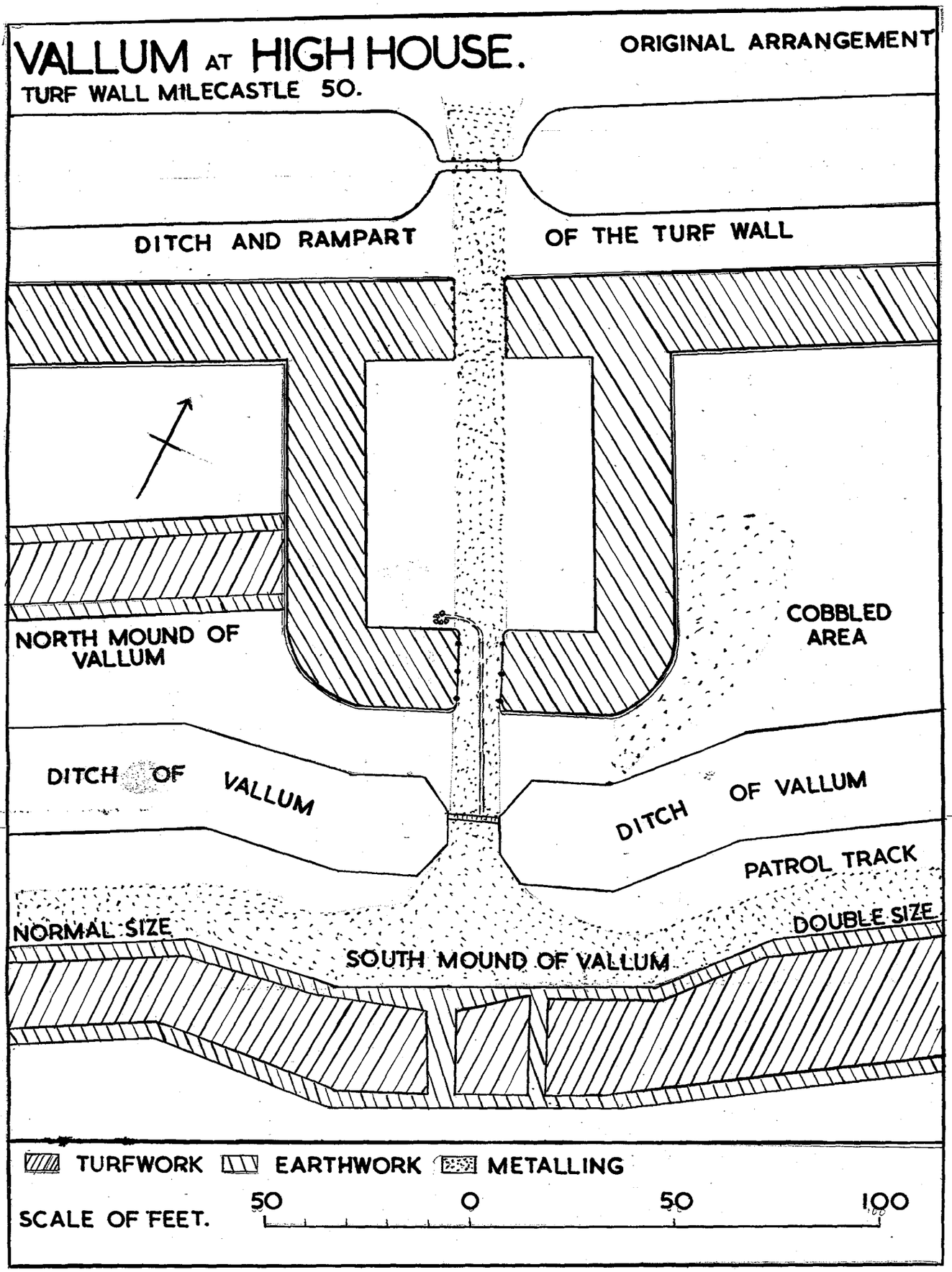
11. MORESBY: CIL. vii. 362.

MORESBY. C.I.L. 7. 362.

IMP. CAES.
TRAIANI HADRI
ANI. AVG. PP.
LEG. XX. VV.

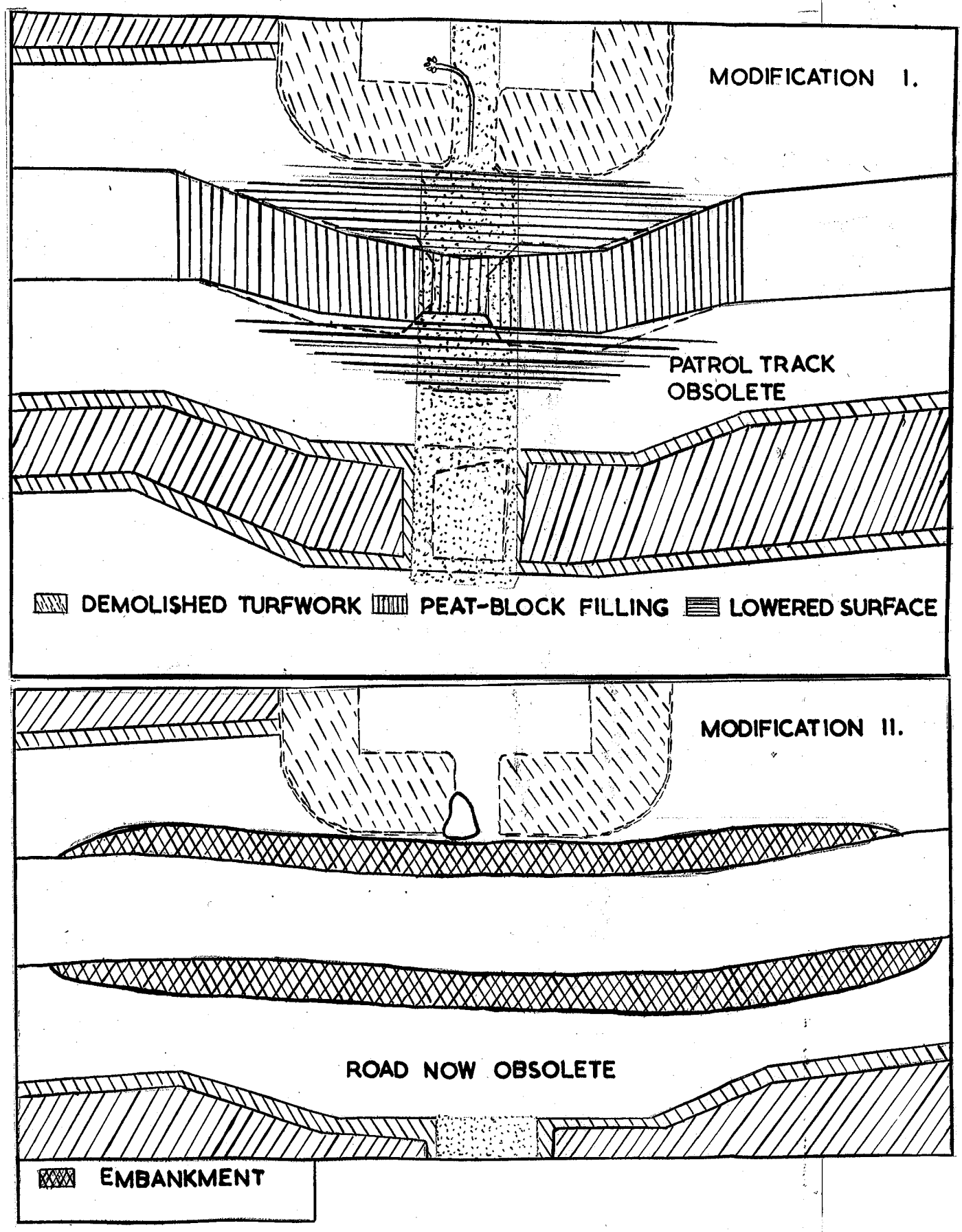
Plan 82.


VALLUM at HARROW'S SCAR MILECASTLE 49
VALLUM
1898.
40 feet = 1 inch.

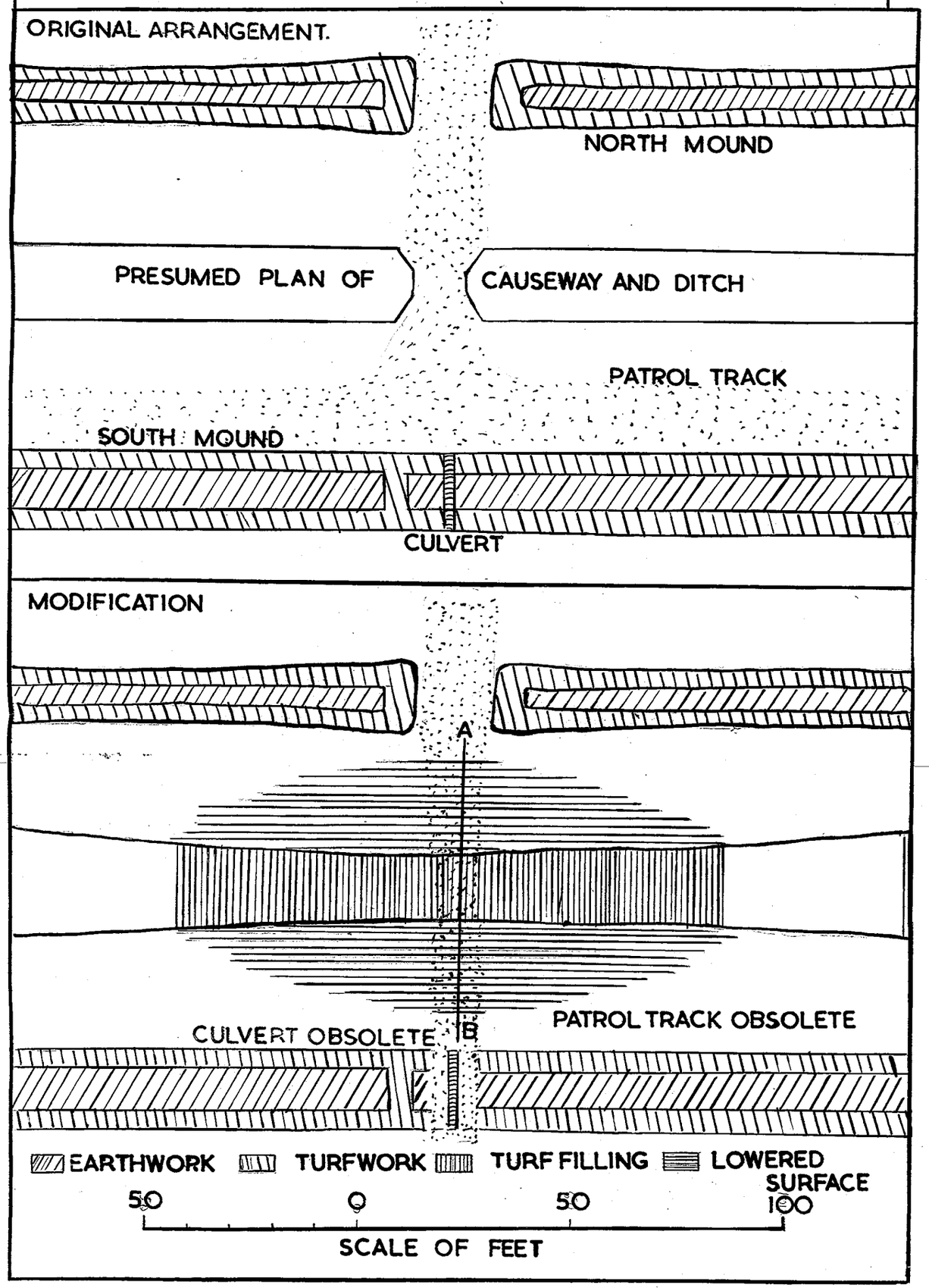

VALLUM AT HIGH HOUSE.
ORIGINAL ARRANGEMENT
TURF WALL MILECASTLE 50.
DITCH AND RAMPART
OF THE TURF WALL
NORTH MOUND OF VALLUM
COBBLED AREA
DITCH OF VALLUM
DITCH OF VALLUM
PATROL TRACK
NORMAL SIZE
DOUBLE SIZE
SOUTH MOUND OF VALLUM
TURFWORK
EARTHWORK
METALLING
SCALE OF FEET.
50
0
50
100

Plan 83.

Plan 84

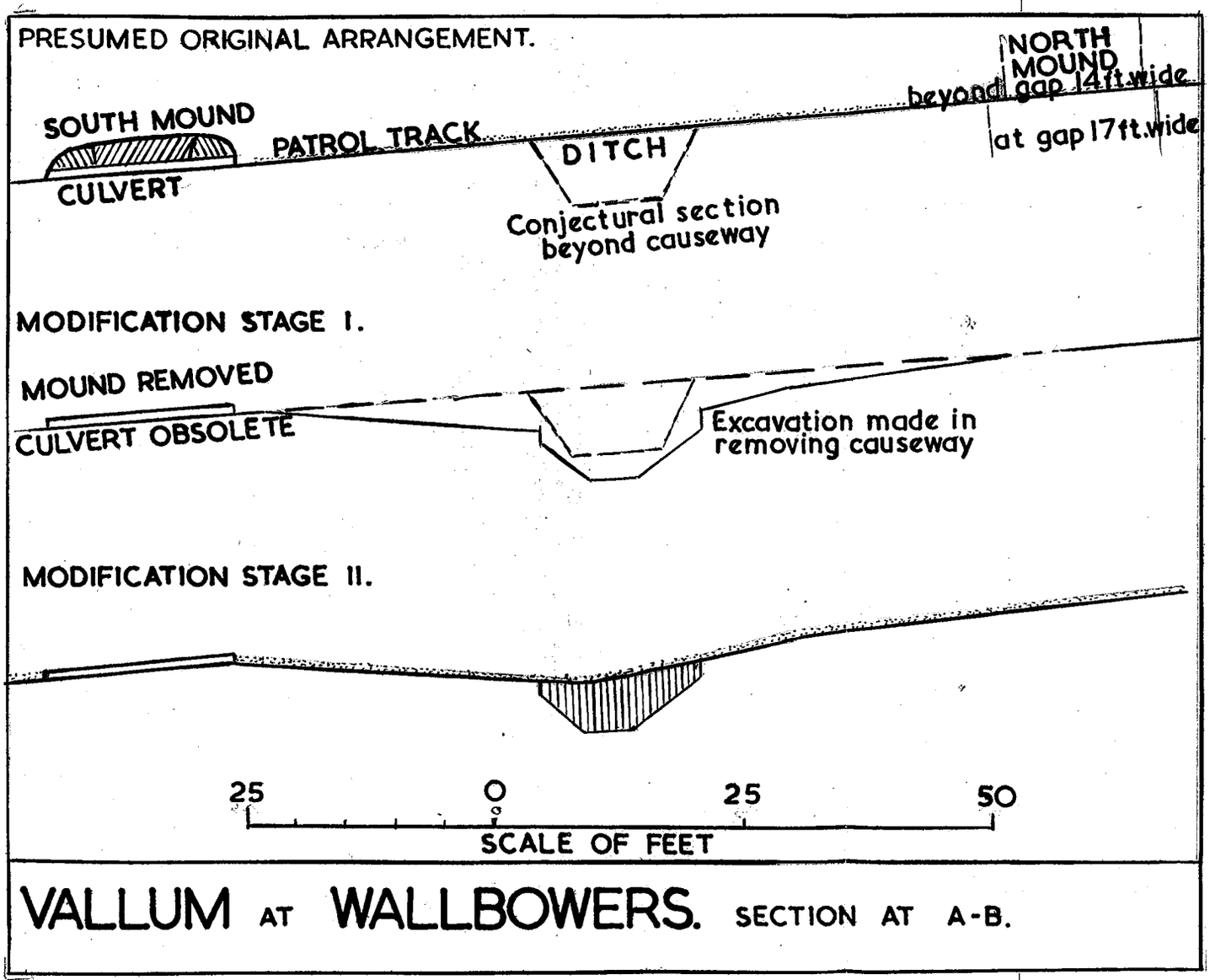

MODIFICATION I.
PATROL TRACK OBSOLETE
DEMOLISHED TURFWORK
PEAT-BLOCK FILLING
LOWERED SURFACE
MODIFICATION II.
ROAD NOW OBSOLETE
EMBANKMENT

VALLUM AT WALLBOWERS. TURF WALL MILECASTLE 51.



Plan 85.

Section 86.



VALLUM AT WALLBOWERS. SECTION AT A-B.

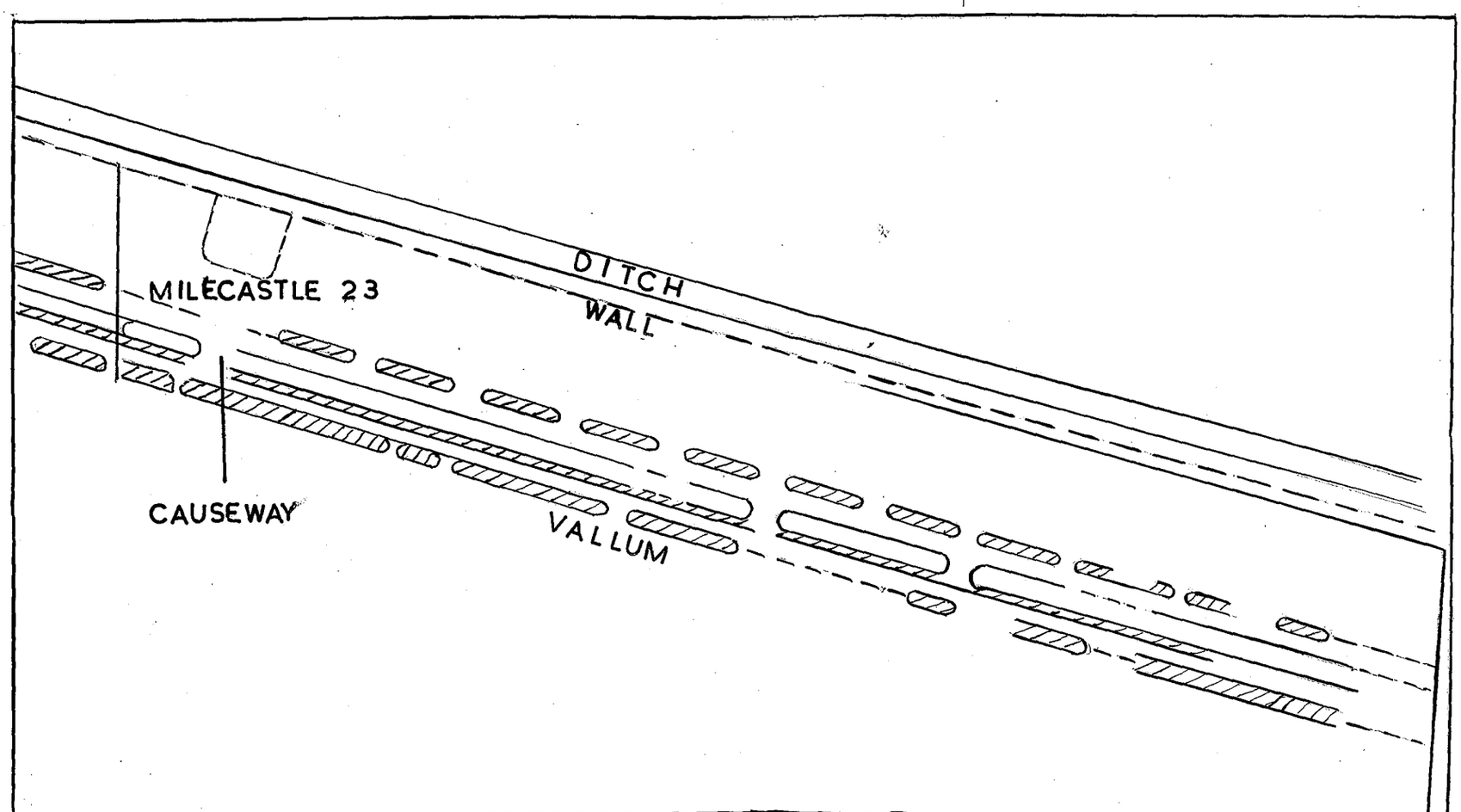
Photograph 87.

SECONDARY FILLING OF THE VALLUM AT MILECASTLE 30.

Photograph 88.

ORIGINAL ROCK OF NORTH LIP OF VALLUM AT MILECASTLE 30 CAUSEWAY.

Plan 89.



No. 90.

KEY TO SECTIONS AT STANLEY PLANTATION.


TOPSOIL.


MOUND UPCAST.


TURF.

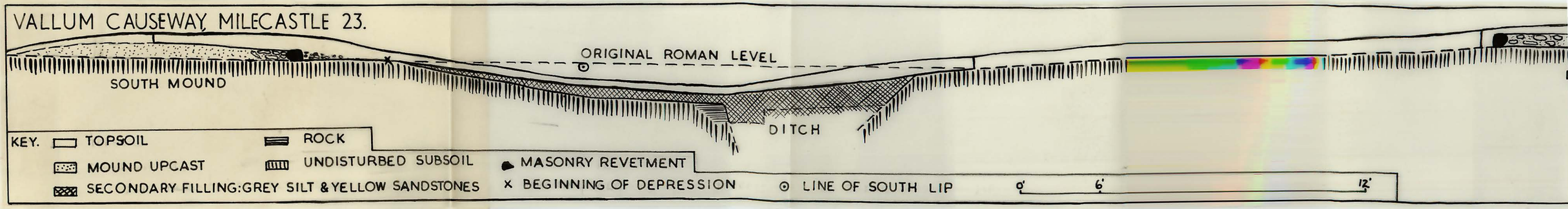

LIGHT-GREY HUMUS.


YELLOW SANDSTONE.

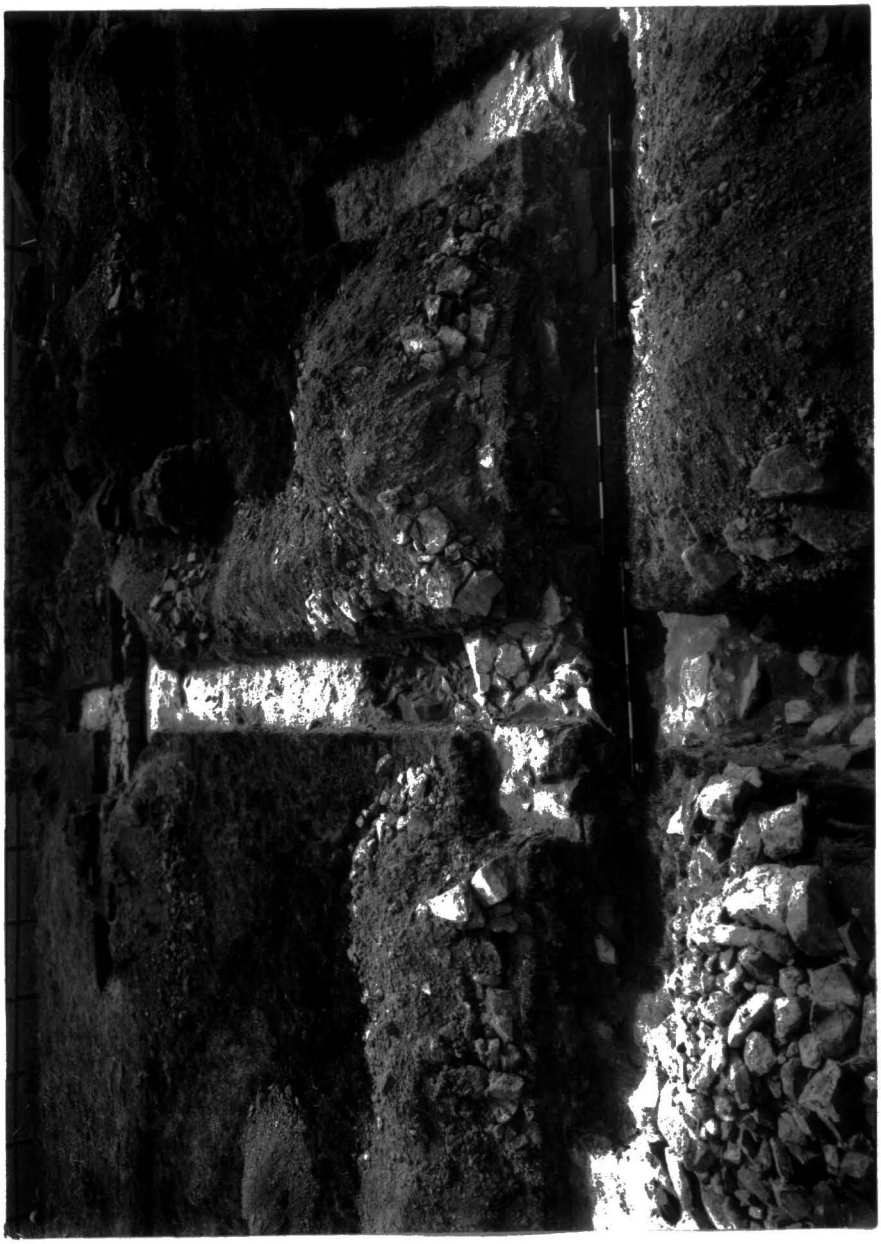

UNDISTURBED SUBSOIL.


STONES.

Section 91.


VALLUM CAUSEWAY, MILECASTLE 23.
ORIGINAL ROMAN LEVEL
SOUTH MOUND
DITCH
KEY.
TOPSOIL
ROCK
MOUND UPCAST
UNDISTURBED SUBSOIL
MASONRY REVETMENT
SECONDARY FILLING: GREY SILT & YELLOW SANDSTONES
× BEGINNING OF DEPRESSION
⊙ LINE OF SOUTH LIP
0'
6'
12'

Photograph 92.



(F45) GENERAL VIEW OF EXCAVATION OF VALLUM CAUSEWAY, MILECASTLE 23: looking south.

Photograph 93.

(FGS) NORTH AND SOUTH DITCH SLOPES AT VALLUM CAUSEWAY, MILECASTLE 23.

Photograph 94, 95.

94. ORIGINAL ROCK PROJECTION OF THE SOUTHERN SLOPE OF VALLUM DITCH.

95. THE WESTERN LIMIT OF THE ROCK PROJECTION.

Photograph 96.

STONE REVETMENT OF SOUTHERN EDGE OF NORTH MOUND: looking north-west.

97. MASONRY OF SOUTHERN REVETMENT OF NORTH MOUND

98. NORTHERN REVETMENT OF NORTH MOUND, OPPOSITE VALLUM CAUSEWAY.

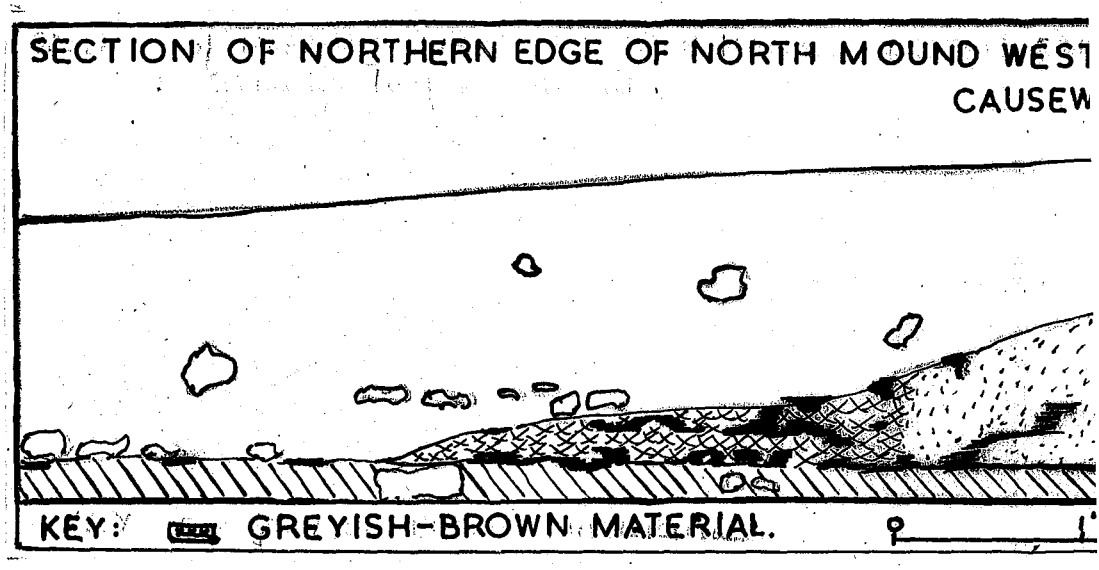
Photograph 97, 98.

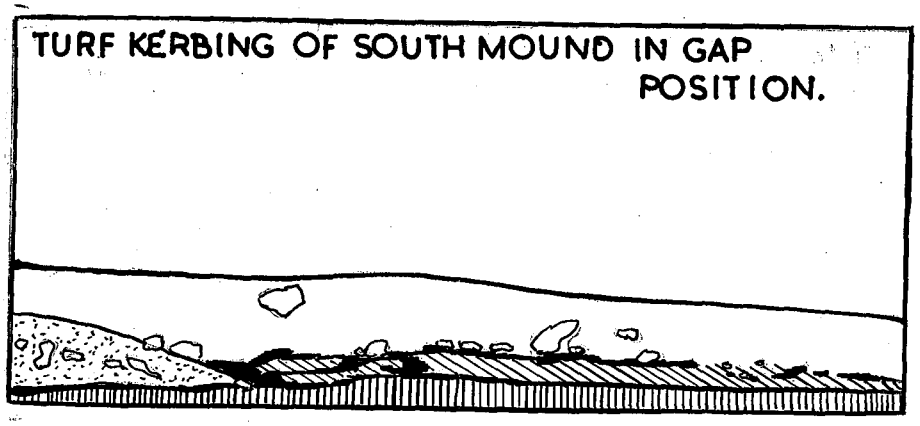
SECTION ALONG CENTRE OF NORTH MOUND: SHOWING ORIGINAL TURF REVETMENT & GAP.
KEY; GREYISH-YELLOW MATERIAL.
SCALE; 0 1' 2' 3' 4' 5'

Photograph 100.

(FGS.) SECTION ALONG CENTRE OF NORTH MOUND OPPOSITE CAUSEWAY:
SHOWING ORIGINAL TURF REVETMENT AND GAP.

Section 101, 102.





1" = 2'

Photograph 103.

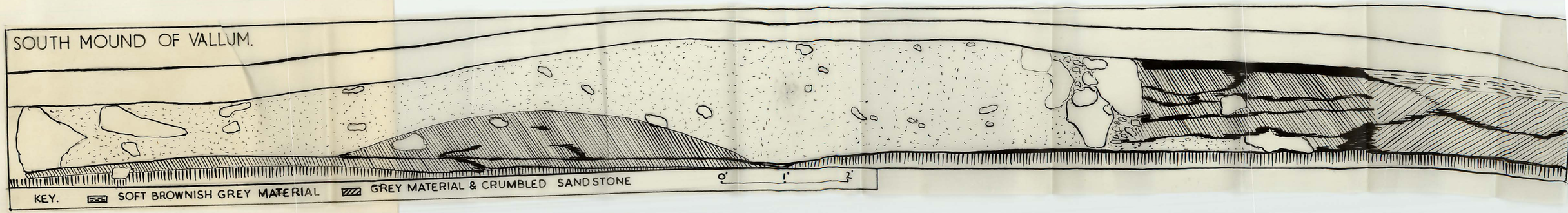
STONE REVETMENT OF NORTHERN EDGE OF SOUTH MOUND: looking west.

104. MASONRY AND CORING OF REVETMENT.

105. SOUTH MOUND REVETMENT, Showing TWO COURSES.

Photograph 104, 105.

Section 106.


SOUTH MOUND OF VALLUM.
KEY.
SOFT BROWNISH GREY MATERIAL
GREY MATERIAL & CRUMBLED SANDSTONE
0'
1'
2'

Photograph 107

(FQS) SECTION ACROSS SOUTH MOUND.

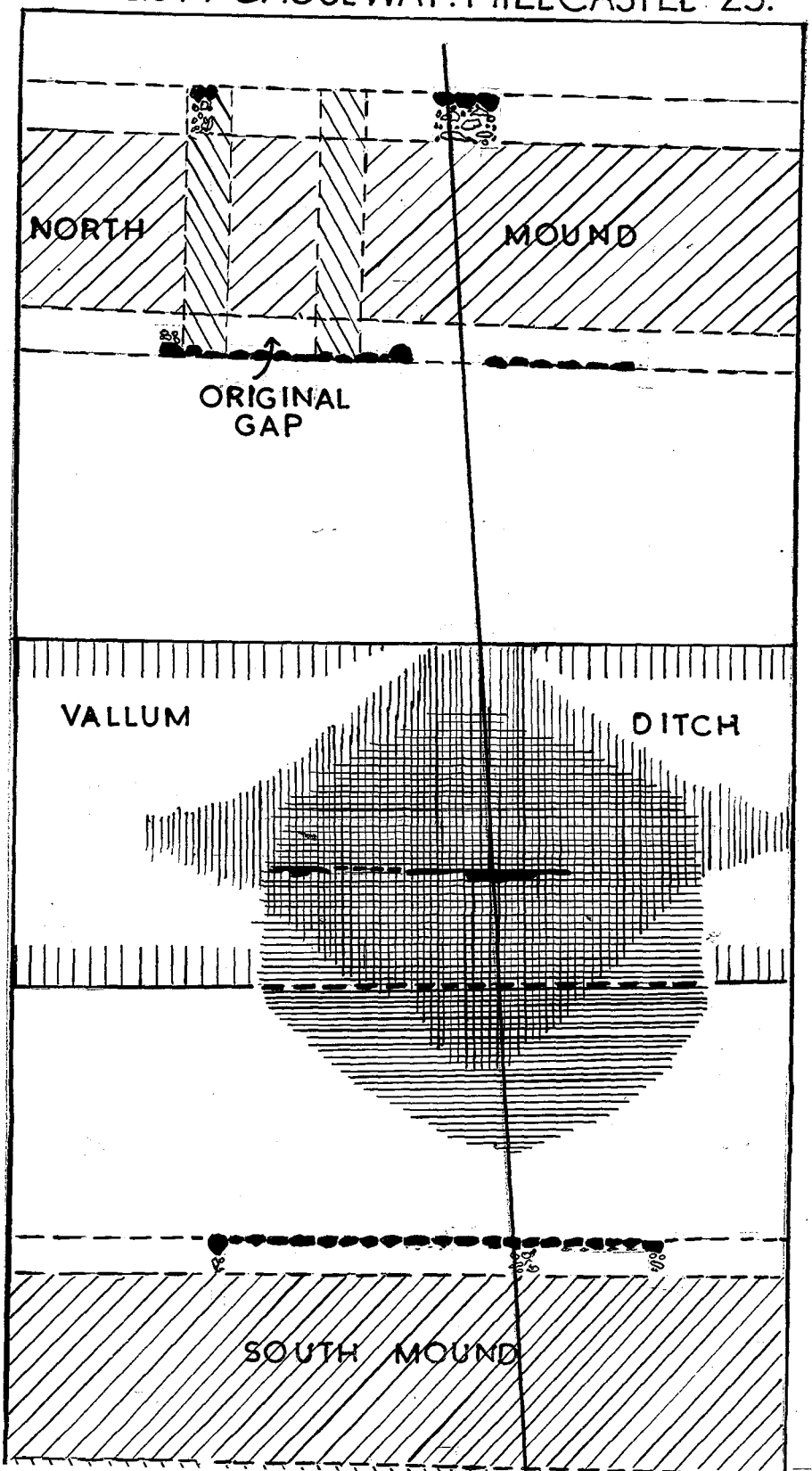
108. TURF REVETMENT OF SOUTHERN EDGE OF SOUTH MOUND.

109. HEAP OF STONES IN SOUTH MOUND UPCAST.

Photograph 108, 109.

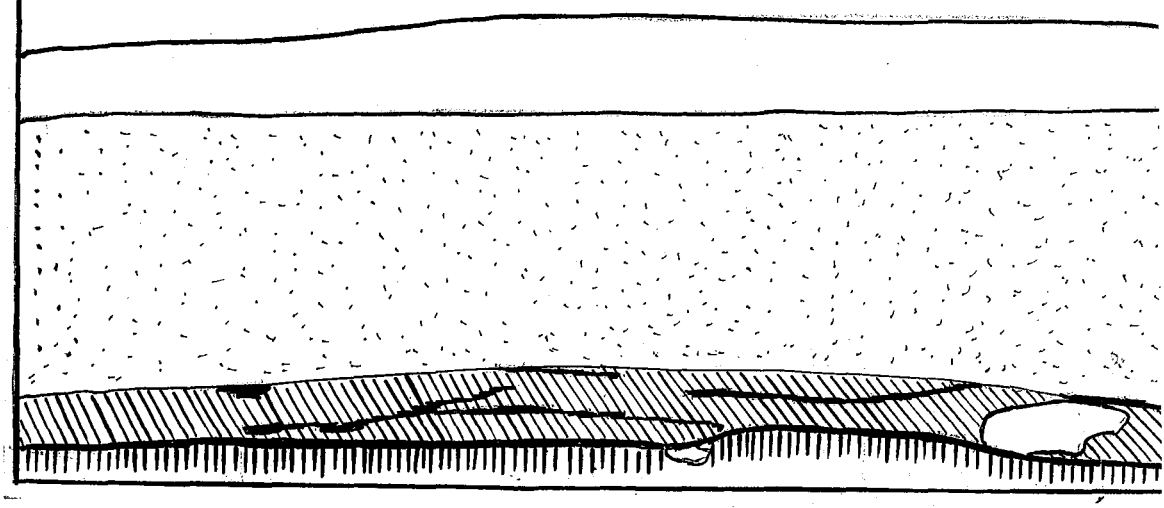
Plan 112.

VALLUM CAUSEWAY: MILECASTLE 23.



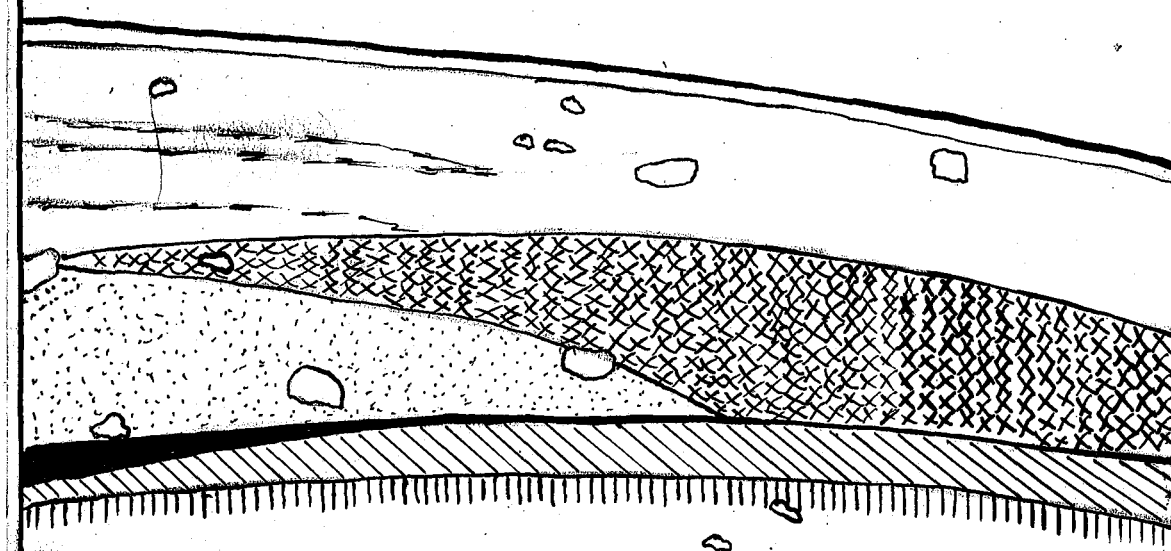
Section 110, 111.

SECTION ALONG SOUTH MOUND THROUGH GREY FEATURE.



1" = 1'

SECTION OF NORTHERN EDGE OF SOUTH MOUND JUST EAST OF STONE REVETMENT.



KEY: TOPSOIL-GREY-BROWN LOOSE MATERIAL.
LIGHT SANDY SOIL.

113. NATURE OF THE FILLING OF THE SECONDARY CAUSEWAY.

114. SURFACE OF SECONDARY CAUSEWAY AT MILECASTLE 23: from west.

Photograph 113, 114.

Photograph 115.

CORING OF NARROW WALL EAST OF MILECASTLE 30:
looking south.

Photograph 116.

SOUTHERN FACE OF NARROW WALL, east of MILECASTLE 30.

Photograph 117.

BROAD WALL FOUNDATIONS PROJECTING SOUTH OF NARROW WALL, EAST OF MILECASTLE 30.

118. METALLING ON SOUTH BERM AT DOWN HILL, looking south.

119. METALLING SOUTH OF THE VALLUM BEND AT DOWN HILL.

Photograph 118, 119.

APPENDIX IV.

Excavations in High House paddock, Cumberland

By

BRENDA SWINBANK, B.A.

[Reprinted from the Cumberland and Westmorland Antiquarian and Archæological Society's *Transactions* Volume LII—New Series.]

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1953

ART. IV.—*Excavations in High House paddock, Cumberland.* By BRENDA SWINBANK, B.A.

Read at Carlisle, May 3rd, 1952.

DURING the Centenary Pilgrimage of Hadrian's Wall, in July 1949, a new hypothesis as to the origin of the Vallum was outlined, namely that it was constructed along a line which had already been utilised by a "service road".[1] This hypothesis was not indeed original in its general conception, since antiquaries as early as John Horsley had noted that the course of the Vallum formed an excellent line for a road; but it was not until 1949 that an attempt was made, in the light of recent research on, and the progress of knowledge of, the Hadrianic frontier, to explain the lay-out of the Vallum in terms of the contemporary road-system. It will be convenient to quote Mr Birley's formulation of the hypothesis:—

"The line selected for the Vallum was that which had already been chosen for the Wall's immediate line of communication, which will be designated *the service road*; the general suitability of the Vallum's course for a line of communication has long been recognised, and excavation has now revealed the service road in many places, running on the south berm of the Vallum and sending off branch-roads to the forts and milecastles. The places where the close proximity of Wall and Vallum to one another has compelled the Romans to modify their basic designs . . . , and the pre-existence of the service road, and its selection as the line round which the Vallum was to be constructed, seem to provide the only logical explanation of the uncomfortable proximity of the two barriers in such stretches."[2]

The strongest evidence for the existence of a metalled service road was undoubtedly the heavy road-bottoming discovered on the south berm of the Vallum at High House

[1] Cf. Eric Birley, *The Centenary Pilgrimage &c.* (1949), 23 f.
[2] *Ibid.*, 24.

in 1936 and described in these *Transactions* in the following year.[3] Excavation of the milecastle causeways at High House and Wallbowers had demonstrated the presence of gravel on the south berm of the Vallum at those points; and at a point 40 yards east of milecastle 50 (Turf Wall), surfacing was uncovered, apparently continuing in spasmodic patches further eastwards, on the south berm. In High House paddock both berms were trenched, at 75 and at 110 yards west of the east fence of the paddock:—

"Here the ground is sandy, and heavy road-bottoming, at least 18 feet wide, was discovered; while the south mound had also been revetted in stone, six courses of the clay-built walling remaining in position. This treatment of the south berm is so far unique, and will undoubtedly repay further study. The north berm, on the other hand, revealed no surfacing; while the north mound was kerbed with humus."

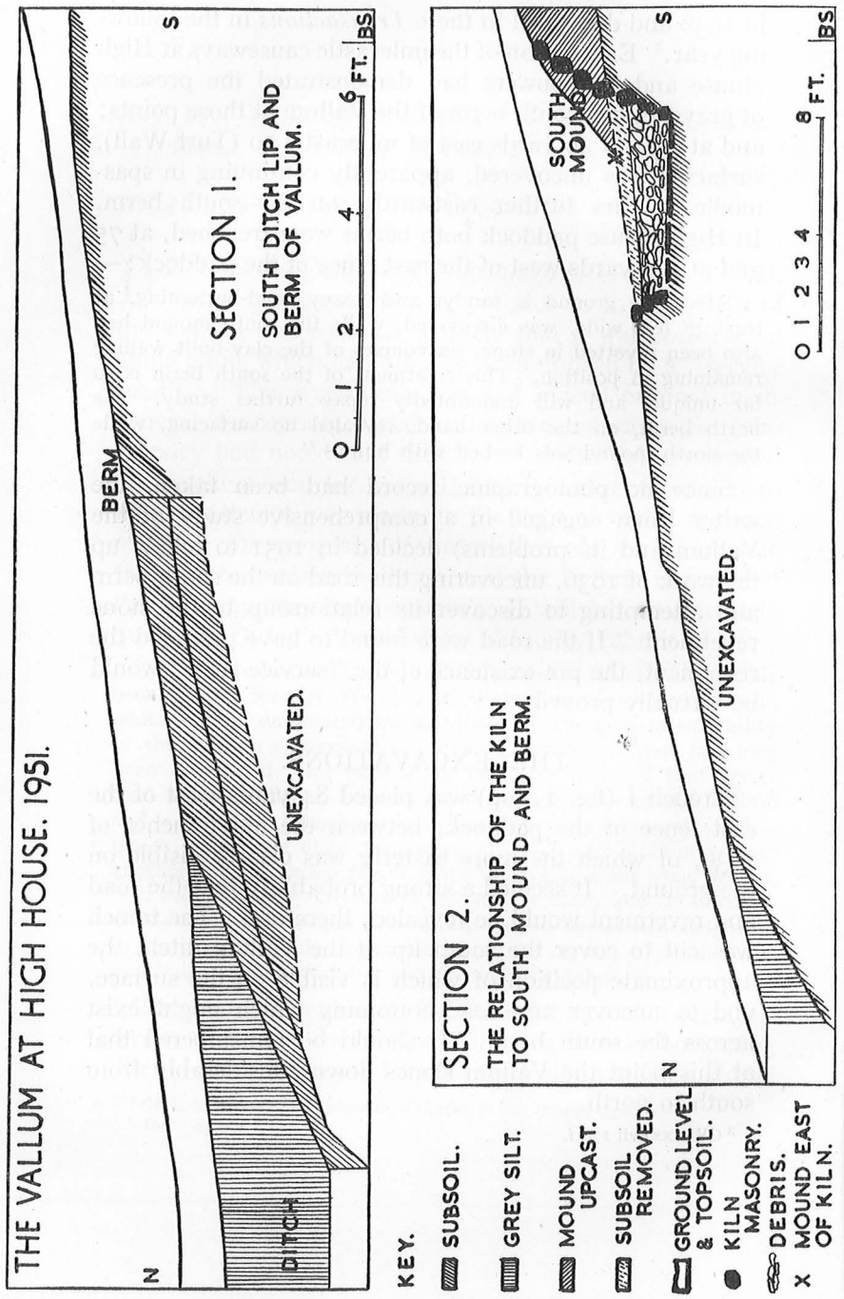
Since no photographic record had been taken, the writer (then engaged in a comprehensive study of the Vallum and its problems) decided in 1951 to follow up the work of 1936, uncovering this road on the south berm and attempting to discover its relationship to the stone revetment. If the road were found to have preceded the revetment, the pre-existence of the "service road" would be virtually proved.

THE EXCAVATIONS.

Trench I (fig. 1, top) was placed 84 yards west of the east fence of the paddock, between the old trenches of 1936, of which the more easterly was clearly visible on the ground. It seemed a strong probability that the road and revetment would be revealed, therefore. The trench was cut to cover the south lip of the Vallum ditch, the approximate position of which is visible on the surface, and to uncover any road-bottoming which might exist across the south berm. It should be remembered that at this point the Vallum slopes down considerably from south to north.

[3] CW2 xxxvii 170 f.

APPENDIX IV.



The top-soil, of greyish-brown, light soil, soon gave way to a sandy, orange-grey material with very sparse, small stones set upon it. This was traced on its gradual slope downwards to the north for approximately 15 ft.; at that point its gradient altered to a sharper angle downwards, and a thick layer of grey silt, clearly representing the ditch-filling, commenced. The ditch had obviously been accumulating silt up to modern times. The slope of the sub-soil was still so gradual, and so unlike the standard original profile of the ditch, that it was in part removed in order to discover whether a more convincing lip existed. Further down, a sharper edge of pink boulder-clay was uncovered, but the softer, grey "sub-soil" ran right over it. Southwards, on the ditch-lip and berm, there was no distinct line between the "sub-soil" and the pink clay, but the two seemed to merge, suggesting that they were one and the same. The lack, not merely of heavy road-bottoming but even of light metalling, was unaccountable.

A gap of 2 ft. 6 in. was left at the south end of Trench I, and then Trench II was cut, 13 ft. long, to investigate the junction between the south berm and the south mound of the Vallum. The core of the mound, which was only partially uncovered, was of solid greyish-yellow material, clearly sub-soil dug from the ditch; it gradually became pinker towards the top. Immediately to the north of the mound a light grey material, with a clayey feel, abutted on to it; this was presumably a humus revetment. It diminished in thickness northwards, for a distance of 6 ft., but at 5 ft. from the south edge of the trench definite cobbling (pl. I, fig. 1) was set upon this light grey material as it gradually diminished. Both it and the cobbling petered out at approximately 9 ft. 4 in. from the end of the trench, and the sub-soil then resumed its natural course — a grey-yellowish or light brown pebbly, clayey substance, comparable to that of Trench I: mixed looking, but very solid and at least 2 feet thick.

There can be no reasonable doubt that the cobbling had been placed by human agency, and that it was part of the patrol-track, set immediately north of the south mound; but what was more important was, that neither road-bottoming nor revetment in stone was present. To avoid further waste of time, the more easterly of the 1936 trenches was next re-excavated.

The masonry revetment and mass of "road-bottoming", extending for 9 ft. to the north (i.e., to the limit of the trench), were soon uncovered. On the west side of the trench six courses of masonry were visible, on the east side only three, and they seemed to be falling outwards from their original position. But in the process of cleaning the revetment before photographing it, it became clear that the "falling" masonry was not in fact falling, but was proceeding in a curve to the north-east—and it was soon apparent that the so-called revetment was in fact a circular structure, set against the south mound. The light-coloured humus revetment of the mound had been partially cut away to allow the insertion of the wall of the structure, a kiln (cf. section, fig. 1, bottom, and plan, fig. 2). The whole of it was excavated, and the masonry was found to be neatly coursed, well-dressed ashlar typically Roman in execution. Eight courses existed just west of the original trench, but by and large only three or four courses remained on any but the southern side. It was clear, too, that the sub-soil of the south berm had been cut through to take the base of the kiln. Just east of its wall, the curve of the south mound, undisturbed since its original construction, reached the sub-soil at approximately the level of the top of the sixth course of stones (numbering the courses from top to bottom). Within the walls, at roughly the bottom of the sixth course, the "road-bottoming" commenced. On excavation it proved to be merely fallen masonry and débris from the walls of the kiln, and emphatically not a road surface. Its limits were within the kiln wall, roughly 9 ft. in diameter across the base.

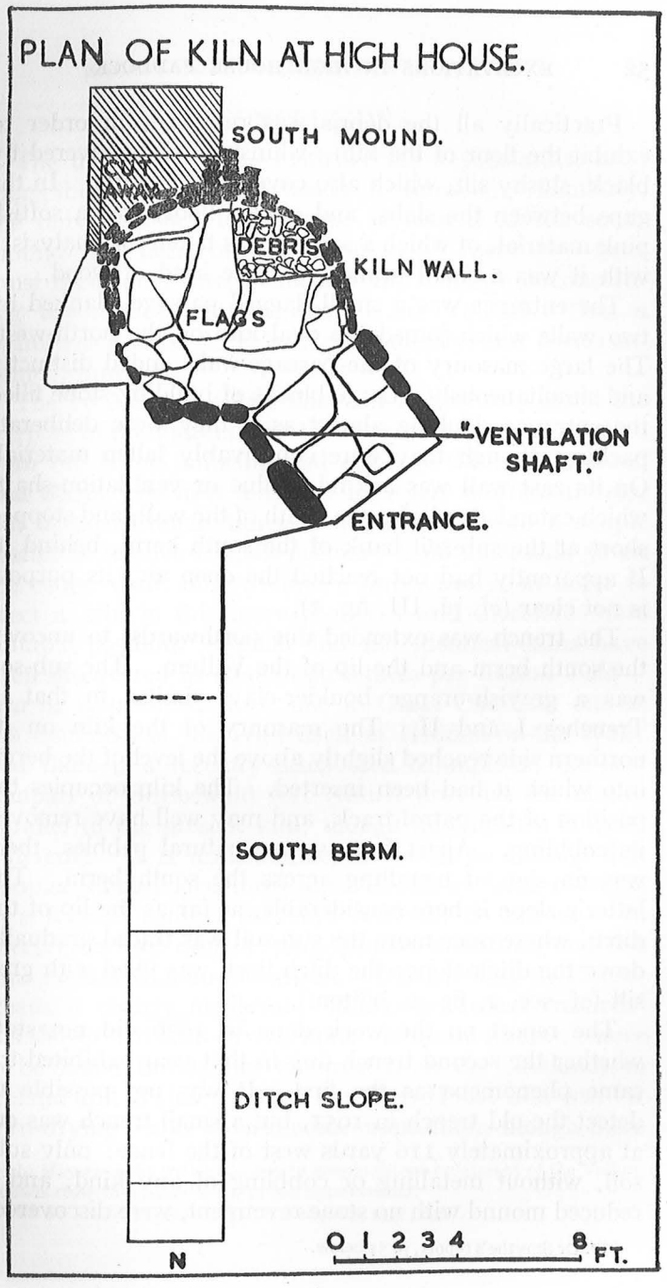


FIG. 2

APPENDIX IV.

Practically all the débris was removed, in order to exhibit the floor of the kiln—whinstone slabs covered by black, slushy silt, which also covered the débris. In the gaps between the slabs, and on the floor, was a softish pink material, of which a sample was taken for analysis[4]; with it was a small branch of some kind of wood.

The entrance was a small flagged passage, flanked by two walls which joined the oval kiln on the north-west. The large masonry of the passage-walls ended distinctly and simultaneously. Large blocks of building-stone filled the entrance, looking almost as if they were deliberate packing, though they were conceivably fallen material. On its east wall was a kind of flue or ventilation-shaft, which extended only for the width of the wall, and stopped short at the sub-soil bank of the south berm, behind it. It apparently had not reached the open air; its purpose is not clear (cf. pl. III, fig. 2).

The trench was extended due northwards, to uncover the south berm and the lip of the Vallum. The sub-soil was a greyish-orange boulder-clay, similar to that in Trenches I and II. The masonry of the kiln on its northern side reached slightly above the level of the berm, into which it had been inserted. The kiln occupies the position of the patrol-track, and may well have removed its cobbling. Apart from sparse natural pebbles, there was no sign of metalling across the south berm. The latter's slope is here considerable, as far as the lip of the ditch, where once more the sub-soil was traced gradually down the ditch-slope; the ditch itself was filled with grey silt (cf. sec. 2, fig. 1, bottom).

The report on the work done in 1936 did not state whether the second trench dug in that year exhibited the same phenomena as the first. It was not possible to detect the old trench in 1951, but a small trench was cut at approximately 110 yards west of the fence: only sub-soil, without metalling or cobbling of any kind, and a reduced mound with no stone revetment, were discovered.

[4] Cf. Dr Smythe's report, p. 54 below.

CONCLUSIONS.

The most convincing evidence for a substantial road along the south berm has thus been destroyed. Similarly, the only evidence for a stone revetment of the south mound has been proved incorrect.[5] These two facts must necessarily alter or modify any conception concerning the nature and purpose of the Vallum. That a patrol-track existed, at least sporadically, has been confirmed, however.

The presence of a kiln does not in any way affect the purpose of the Vallum, for it is clearly later in construction than the latter, utilising and cut into the south mound and berm. Its neat masonry is clearly of Roman date, but in post-Roman times it would have been a simple matter to remove Roman masonry from milecastle 50 on the Stone Wall, only a stone's throw away, in order to erect a kiln in this more sheltered and therefore more suitable position. Similar but not identical kilns have been discovered in Roman structures *per lineam Valli*—two in Housesteads fort, one in Great Chesters, one in the thickness of the Wall itself at Heddon-on-the-Wall; and there is a recently discovered example in the east rampart of Birdoswald fort (which provides the closest parallel to the present kiln, though its entrance is quite different). It is unjustifiable, however, to assume that because similar structures have elsewhere been revealed in a Roman context the kilns must all be Roman. In every case they destroy some Roman structure, and can thus be late Roman at earliest. One of those at Housesteads is clearly medieval. Moreover, recent research[6] has shown that corn-drying kilns "in recent times. . . were to be found throughout the west from the Shetlands to Ireland and Wales". That the High House kiln was for corn-drying seems a reasonable supposition, though there

[5] In May 1952 the writer discovered genuine stone revetment of the Vallum mounds close to milecastle 23, in Northumberland.

[6] Cf. Sir Lindsay Scott's paper in *Antiquity*, 1951, 196 f.

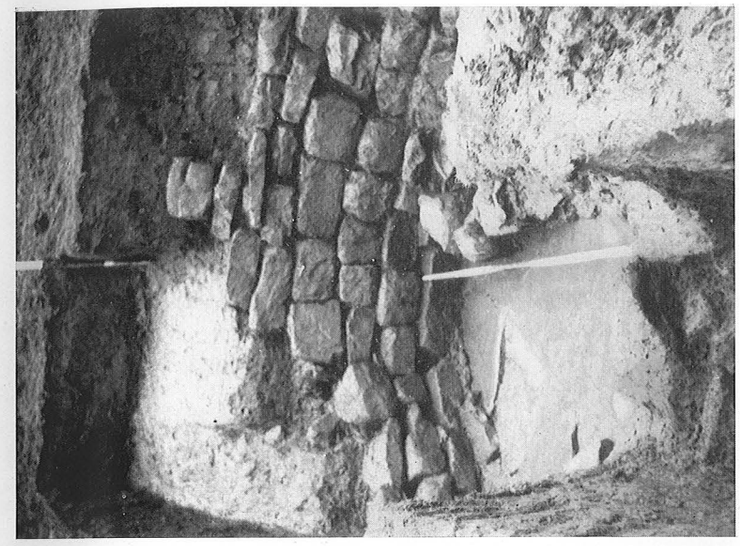
is nothing (except the low temperature of the firing of the kiln-lining) to support a definite conclusion. Dr Smythe's analysis, quoted below, makes it certain that the kiln has not been associated with either lime-burning or metal-working. It seems likely to have been connected not with the garrison of milecastle 50, but rather with a farm at High House, but whether with the existing one or a predecessor, it is impossible to judge.

The writer wishes to thank Mr Eric Birley and Professor I. A. Richmond for their help in the formulation and discussion of these conclusions.

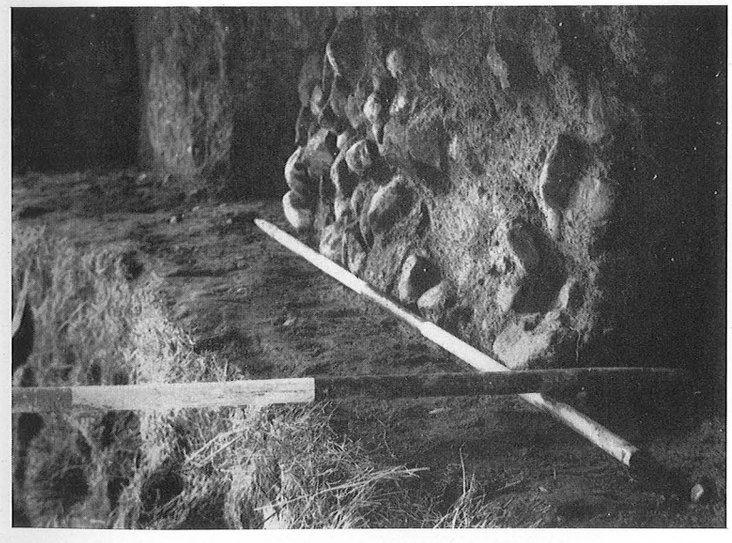
APPENDIX.

Dr. J. A. Smythe, formerly Reader in Metallurgy at King's College, Newcastle-upon-Tyne, has kindly provided the following analysis:—

"The sample is kiln-lining, fired at a very low temperature and still containing a good deal of the wood with which the clay was reinforced. It has not been associated with either lime-burning or metal-working."



Pl. I, 2.—Kiln set in south mound, looking south.



Pl. I, 1.—Cobbling in Trench II.

facing p. 54

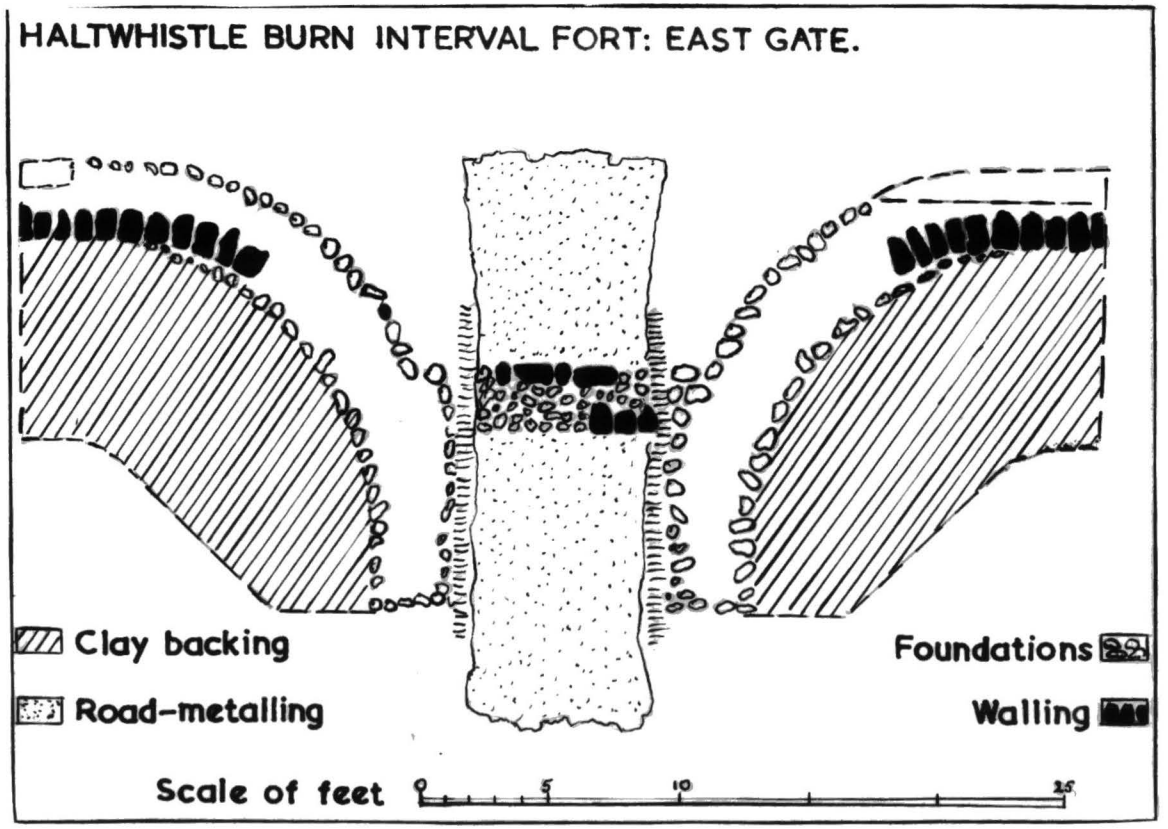
APPENDIX IV.

Pl. II, 2.—Kiln, debris and flagged floor.

Pl. II, 1.—Kiln, looking south, showing debris.

PL. III, 1.—Kiln entrance looking north.

PL. III, 2.—Ventilation shaft in kiln entrance.


HALTWHISTLE BURN INTERVAL FORT: EAST GATE.
Clay backing
Road-metalling
Foundations
Walling
Scale of feet
0
5
10
25

Plan 120

APPENDIX. V.

Excavations on the Vallum west of Limestone Corner.

In June 1952 two weeks were devoted to the excavation of a complete section across the Vallum west of Limestone Corner. The aim of the excavation was to investigate particularly the composition of the marginal mound, the nature of the subsoil into which the ditch had been dug, the kind of upcast in the south mound; in addition, to discover whether the mounds and ditch were revetted in any way, and whether a patrol track existed on the south berm; finally to discover the nature of the Military Way which here crowns the north mound of the Vallum. The Durham University Excavation Committee sponsored the work and Thomas Batey undertook the work of digging. E. Birley and J. P. Gillam were amongst the visitors to the site.

The single trench[1] was planned to cut through the Vallum in a sector ostensibly free from rock, free from the complications of a crossing and at a point where the ditch was of the recut type similar to the Cawfields section. The trench was to cut through the south mound, to expose the south berm, cut through the marginal mound and ditch, and uncover the north berm, north mound and Military Way.

The old surface level was clear only beneath the south mound where it was distinguishable as a dark grey band of clayey material. Above this level was the clean upcast of the mound, a soft rusty-red gravel.[2] Above the gravel which, as the excavation of the ditch showed, had clearly come from the ditch, was another thick layer of light-coloured stoney gravel rather different from the gravel beneath it. Many small stones were present in this second layer. The presence of such material is odd since the ditch did not cut through a layer of subsoil of a similar nature. It looks almost as though the small stones and relatively loose soil have come from elsewhere to add to the height of the south mound, which still stands to the height of 6 feet just west of the section. Above this layer the topsoil and turf were quite distinct. There were no signs of any kind of mound revetment. The mound was 20 feet wide.

The subsoil of the south berm, a sandy loam, was uncovered. 4½ feet north of the limit of the mound and stretching for roughly 6 feet northwards on the berm, were

1. See section 121.

2 ibid. + photograph 122.

a number of flat whin boulders[3] embedded into the subsoil. Whether these were placed there by nature or by human agency is difficult to determine, but in either case they may have served as a patrol track. No attempt was made to discover whether they were a continuous feature.

The marginal mound proved to be of amazingly small stature when stripped of its turf and topsoil. But its material was quite different in character from the rusty-red gravel of the south mound, or even of the light-coloured stoney gravel above it. One large freestone came from it and many fragments of whin boulders. Apart from these, the mound was composed of loose dark soil resembling loose top-soil. The mound clearly was not composed of material gained from digging the ditch anew. Otherwise, in the nature of things, the mound would have been composed of rusty gravel material.

The rust-coloured sandy subsoil was traced down the south ditch slope[4] and soon seemed to become a fine gravel. The topsoil did not differ greatly in colour and consistency and therefore it was difficult to discover the exact line of the ditch. But it did not appear to be flat-bottomed, but rather had a fairly narrow, slightly rounded bottom. The north slope was also cut through rusty-red gravel though on the north lip rock reached the surface.[5] None of the black silty filling common to a ditch cut in clay was present in the ditch. The ditch was quite dry and the filling was of compressed sandy topsoil and an occasional stone.

The north berm too was clearly traceable, with neither marginal mound nor cobbles. But approaching the north there was a spill of stones presumably from the top of the mound. No attempt was made to cut through the north mound because of its huge dimensions, but the Roman profile of the mound was uncovered. The surface of the Military Way proved disappointingly poor and was merely a layer of loose gravel and angular stones set immediately above the lighter gravel of the mound.[6] The spill of stones over the north berm near the mound was clearly from the road. No edging existed to the Military Way at this point. It is noteworthy too, that although the north mound is of great height, it is rather narrow. This is doubtless why a bank of solid dark brown soil was added to the southern limit of the north mound in an attempt at least to support the mound in its new purpose, if not to

3. See photograph no. 123.
4. See photograph 124.
5. See photograph 125.
6. See photograph 126.

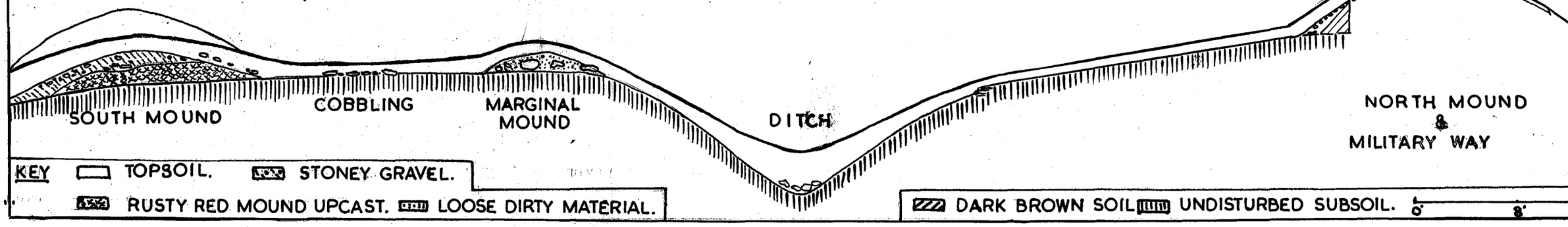
widen its effective crest. The material is quite unlike the subsoil or mound upcast. When part of this bank together with the spread of stones were removed[7], the north berm proceeded below it as flat as the south berm.

The section across the Vallum proved to be of great interest for a variety of reasons and quite justified the attention devoted to it. In particular the nature of the marginal mound was more closely determined, and an interesting point raised in connection with the composition of the south mound. A probable patrol track came to light, and evidence for the nature of the Military Way and the extra bank of soil added to the north mound to support it.

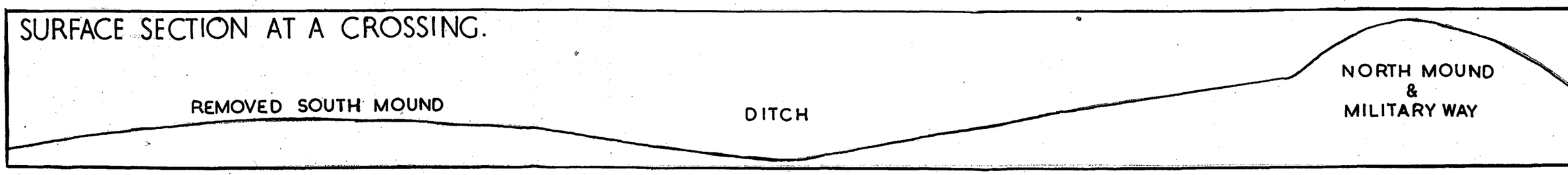
7. See photograph 127

Section 121.

LIMESTONE CORNER 1952. SECTION ACROSS VALLUM.



SURFACE SECTION AT A CROSSING.



Photograph 122, 123.

123. WHIN COBBLING ON SOUTH BERM.

122. SECTION ACROSS SOUTH MOUND OF VALLUM, WEST OF LIMESTONE CORNER.

Photograph 124, 125.

125. VALLUM DITCH, from NORTH LIP.

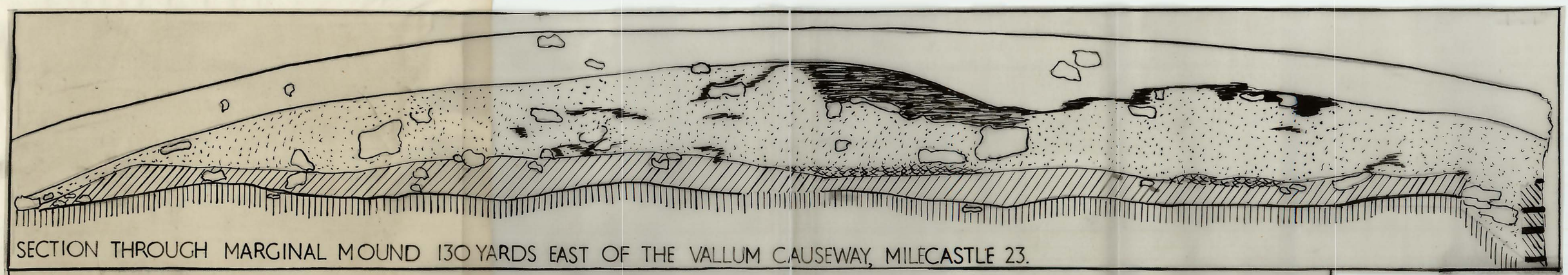
124. VALLUM DITCH, with MARGINAL MOUND IN FOREGROUND.

126. STONEY SPILL OF NORTH MOUND, and VIEW OF TRENCH ACROSS VALLVM.

127. SOUTHERN EDGE OF NORTH MOUND with STONEY SPILL PARTIALLY REMOVED.

Photograph 126, 127.

Section 128



SECTION THROUGH MARGINAL MOUND 130 YARDS EAST OF THE VALLUM CAUSEWAY, MILECASTLE 23.

KEY

- TOPSOIL-BROWN SOIL & STONES.
- UPCAST-LOOSE BROWN SOIL & STONES.
- DARK BROWN & BLACK MATERIAL.
- LAYER OF CRUMBLED YELLOW SANDSTONE
- GREY MATERIAL.
- BLOCKS OF TURF & HUMUS.
- UNDISTURBED SUBSOIL.

SCALE. 1' 0' 1' 2'

Photograph 129

SOUTHERN KERBING OF MILITARY WAY SET ON SOLID ROCK, SOUTH OF MILECASTLE 30.

VERAN INSCRIPTIONS. Fig. 130

1. TYNE: E.E. ix. 1163.

IMP. ANTONI
NO. AVG. PIO. P
PAT. VEXILATIO
LEG. II. AVG. ET. LEG.
VI. VIC. ET. LEG.
XX. VV. CONR
BVTI. EX. GER. DV
OBVS. SVB. IVLIO. VE
RO. LEG. AVG. PR. P

2. CORBRIDGE: E.E. ix. 1383.

(DEO MARTI)
VL(TORI VEX. LEG)
VI (VIC. PF. SVB)
CN. IVL. (VERO LEG AVG)
PER L.O.(
TRIBVNVM

3. CORBRIGE: ~~ExE~~.CIL. 563; E.E. IX. p. 584. (found near Heddon)

LEG VI VP
F REF TE
R ET SAC COS

MARCAN INSCRIPTIONS. Fig. 131.

4. CORBRIDGE: 1911 report p. 50.

SOLI INVICTO

VEXILLATIO

LEG VI VIC PFF

SUB CURA SEX

CALPURN AGRICO

LAE LEG AUG PR PR

5. CORBRIDGE: A.A. xxi. 239.

IMPERAT(ORIBVS CAESARIBVS)

M.AVRELIO A(NTONINO. AVG. TRIBVNICIAE)

POTESTAT(IS XVII C)OS(III. ET. L. AVR.)

(ELIO. VERO. AVG. ARMENIACO. TRIB)

(VNICIAE POTESTATIS III) CO(S. II)

(VEXILLATIO LEG. XX) VV FECIT SV(B C)VRA

(SEXTI CALPVRNI) AG(R)ICOLAE

(LEGATI AVGVSTORV)M PR. PR.

6. CHESTERHOLM: A.A^{4}. viii. 190.

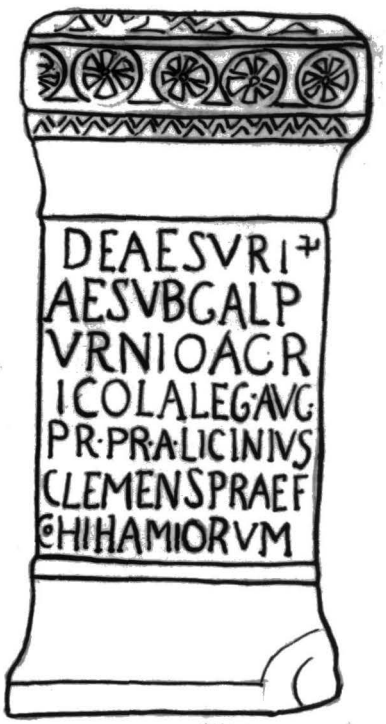
SV(B SEXTO CALPVRNIO)

AG(RICOLA LEG AVG PR PR)

(IMP. CAESA)RI TR(AIANO)

(HADRI)ANO (AVG.)

7. CARVORAN: L.S. 303. CIL. vii. 758.



8. CARVORAN: L.S. 327. CIL. vii. 773.

9. CARVORAN: L.S. 328. CIL. vii. 774.

10. HOUSESTEADS: L.S. 203. CIL. vii. 664.

11. GREAT CHESTERS: L.S. 286. CIL. vii. 731.

APPENDIX. VI.

Pottery from the Vallum filling at Birdoswald.

By
BRENDA SWINBANK and J. P. GILLAM, M.A.

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1951

APPENDIX. VI.

ART. VI.—*Pottery from the Vallum filling at Birdoswald.* By BRENDA SWINBANK and J. P. GILLAM.

Communicated at Carlisle, April 7th, 1951.

THE purpose of this paper is to place on record three small groups of pottery found in the ditch of the Vallum at Birdoswald fort, during the excavations of 1929 and 1932, and not hitherto published.[1]

In the 10th edition of the *Handbook to the Roman Wall* (1947), Professor Richmond writes that the Vallum was obliterated at this fort very soon after its creation. The main evidence for this statement is to be found in the report on the excavations in 1928. It was discovered that near the south-east and south-west angles of the fort, the Vallum ditch had been filled up with cut blocks of peat thrown in anyhow, one on top of the other, and sealed with a layer of boulder clay. A section of the ditch filling was sent to Dr Kathleen Blackburn for analysis, with a view to finding out how long the ditch had been open before it was filled with peat. She found that, though the seeds of such plants as establish themselves quickly were present in the layer between the ditch bottom and the peat filling, there was none of the decayed vegetable matter that would have been expected if the plants had had time to establish themselves completely. She concluded that the ditch could only have been open for a year or two before the re-filling with the peat. The speedy disuse of the Vallum ditch in this area is thus indisputably established. The excavations

[1] The reports on the successive seasons' work at Birdoswald, by the Cumberland Excavation Committee, under the direction of F. G. Simpson and I. A. Richmond, from 1928 to 1933, are published in CW2 xxix-xxxiv.

of 1932 established that the peat filling had not been put into the ditch until the stone-revetted causeway which carried the road to the south gate of the fort over the Vallum ditch had been partly demolished. The disuse of the causeway and of the gate by which traffic across it was once controlled, is then contemporaneous with the obliteration of the Vallum ditch.

The excavation reports contain no explicit reference to the pottery found in the Vallum ditch, but the excavators carefully packed the different groups of pottery in separate bags, each with a label giving the exact find-spot. Three of the bags contain pottery from the filling of the Vallum ditch; this pottery is described and discussed below.

Nos. 1 to 7 were found in 1932 in the layers immediately above the peat filling, by the causeway.

1. Rim and shoulder fragment of a cooking jar in hard, undecorated, plain grey fabric.

cf.

Chesterholm	22	pre-Wall-fort,
Corbridge, 1911	23	pre-Wall-fort,
Haltwhistle Burn	16	Hadrianic,
Poltross Burn, M/C 48	III, 26	period I A,
Throp	11	Hadrianic.

Wheel-made vessels in this fabric, referred to here as cooking jars to distinguish them from cooking pots in black fumed ware, are common at sites abandoned when the fort garrison was moved on to the line of the Wall: they are also common in the earliest levels of sites on the Wall, but they are very rare on the Antonine Wall.[2]

2. Rim and wall fragment of a mortarium in pinkish buff fabric with a grey core; sparsely sprinkled with large grey grit.

cf.

Balmuildy	XLI, 16	Antonine,
Chesterholm	61	pre-Wall-fort,
Corbridge, 1911	100	Antonine,
Corbridge, 1938	11 lower, 4	stamped SVLLON, unstratified,
High House, M/C 50	101	period I A/B,
Throp	3	Hadrianic.

[2] S. N. Miller, *The Roman Fort at Balmuildy*, p. 88.

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The unstratified example from Corbridge is stamped by the firm which used the trade-mark SVLLONIAC, and was active early in the second century; it is not impossible that the present piece was made by that firm. The peak period of use for this type is clearly Hadrianic-Antonine.

3. Four fragments of a mortarium in a soft dirty buff fabric; no grit survives.

cf.

Birdoswald, 1929	4	period I.

The parallel with the published example from Birdoswald, which was found in the barracks, is remarkably close both in shape and fabric. The low bead and hooked rim are features found more frequently in mortaria of the earlier part of period I than of the later.

4. Three fragments of a flat-rimmed bowl in the normal black fumed fabric, with distinct cross hatching right up to the rim.

cf.

Birdoswald, 1929	65	period I,
Poltross Burn, M/C 48	III, 4	period I A.

Although the vessel is incomplete, the depth of the existing fragments shows that they are from a bowl and not from a platter; the black fabric is typically Hadrianic-Antonine; the vessel has therefore been restored as a deeply chamfered bowl of this period.

5. Rim and wall of a bowl in hard, gritty, red fabric; undecorated.

Close parallels are lacking; the fabric is very similar to that of several vessels in the Tolson Memorial Museum, Huddersfield, found at Slack which was occupied from *circa* A.D. 80 to *circa* A.D. 140.

6. The greater part of a flat-rimmed platter in dense, slightly gritty, black fumed fabric; the vessel is decorated with cross hatching, lightly scored on an already burnished surface.

cf.

Cardurnock	27	Hadrianic,
Corbridge, 1911	44	pre-Wall-fort,
Corbridge, 1911	85	Antonine,
Haltwhistle Burn	8	Hadrianic,
Slack	66	pre-Antonine.

This type of platter without a chamfer, but with a flat rim, is exclusively Hadrianic-Antonine; it differs from the later

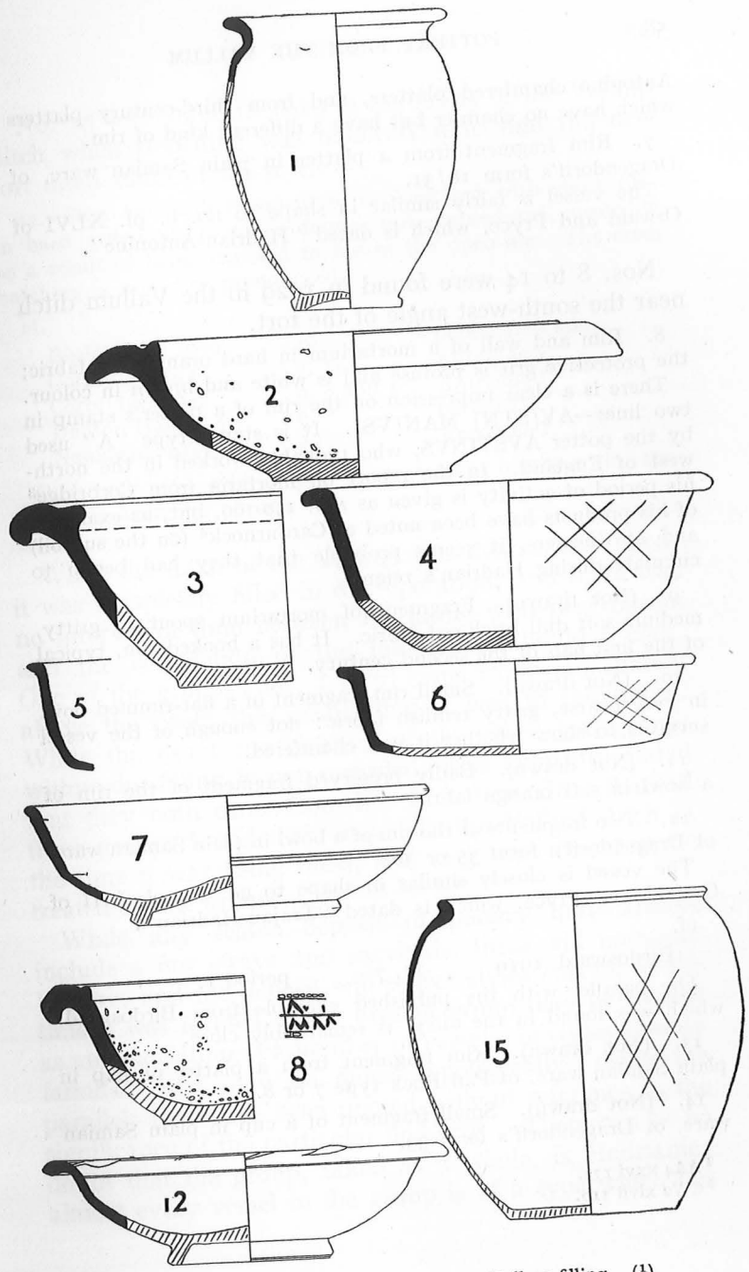

FIG. 1.—Birdoswald: pottery from the Vallum filling. (¼).

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Antonine chamfered platters, and from third-century platters which have no chamfer but have a different kind of rim.

7. Rim fragment from a platter in plain Samian ware, of Dragendorff's form 18/31.

The vessel is fairly similar in shape to no. 6, pl. XLVI of Oswald and Pryce, which is dated "Hadrian-Antonine".

Nos. 8 to 14 were found in 1929 in the Vallum ditch near the south-west angle of the fort.

8. Rim and wall of a mortarium in hard orange-buff fabric; the protective grit is profuse and is white and brown in colour.

There is a clear impression on the rim of a potter's stamp in two lines—AV[STN] MAN[VS]. It is stamp type "A" used by the potter AVSTINVS, who probably worked in the north-west of England. In the report on mortaria from Corbridge[3] his period of activity is given as A.D. 140-160, but, as examples of his products have been noted at Cardurnock[4] (on the subsoil) and at Chesters, it seems probable that they had begun to circulate during Hadrian's reign.

9. (Not drawn). Fragment of mortarium spout in gritty, medium-soft dull brick-red fabric. It has a hooked rim, typical of the first half of the second century.

10. (Not drawn). Small rim fragment of a flat-rimmed bowl in very coarse, gritty reddish fabric: not enough of the vessel survives to show whether it was chamfered.

11. (Not drawn). Badly preserved fragment of the rim of a bowl in soft orange fabric.

12. Two fragments of the rim of a bowl in plain Samian ware, of Dragendorff's form 35 or 36.

The vessel is closely similar in shape to no. 12, pl. LIII of Oswald and Pryce, which is dated "Trajan-Hadrian".

cf.

Birdoswald, 1929	11, 7	period 1.

The parallel with the published example from Birdoswald, which was found in the alley, is remarkably close.

13. (Not drawn). Rim fragment from a platter or cup in plain Samian ware, of Pan Rock type 7 or 8.

14. (Not drawn). Small fragment of a cup in plain Samian ware, of Dragendorff's form 33.

[3] AA4 xxvi 175.
[4] CW2 xlvii 118.

No. 15 was found in 1929 in the filling of the Vallum ditch when trenching was undertaken to find the new fort ditch south of the fort.

15. Rim and wall fragment of cooking pot with short rim, in hard gritty black fumed fabric, now turned red, probably as a result of being exposed to fire in the open air. The cross hatching is not very pronounced.

cf.

Birdoswald, 1929	39	period I — alley,
Corbridge, 1938	8, 15	Antonine I,
Corbridge, 1938	9, 8 and 10	Antonine I,
Denton Hall, T 7b	6	period I,
Newstead, 1947	14	Antonine I.

This type of cooking pot is especially common in the Hadrianic-Antonine period.

When the ditch of the Vallum was deliberately filled, it was completely filled in one operation, and there was no interval of time between the filling with peat blocks and the completion of the filling with boulder clay. One of the groups (nos. 1 to 7) came from immediately above the peat; this means that it was in the filling. While the exact stratification of the other two groups within the filling is not recorded, it is explicitly stated that they both came from it. It is thus clear that all three groups found their way into the Vallum ditch at the time it was being filled, and they may therefore be treated as one group.

While any sealed deposit of pottery may always include a few strays and survivals, these will normally be rare, and the deposit will reflect styles current at the time it was formed. The present group may be treated as an association of a number of vessels, in styles already familiar, and may be dated typologically, using the parallels that have been quoted without reference to the significance of the particular find-spot. There can be no doubt that the group, taken as a whole, is Hadrianic; almost every vessel in the group is of a type which has

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already been recorded from a Hadrianic deposit, while none would be out of place in such a deposit. None of the vessels are of types whose peak period of use falls long before or after the reign of Hadrian. A closer dating within the period is possible. Nos. 1, 2 and 6 are of types which had emerged before the first series of forts was built on Hadrian's Wall; but, except that the cooking jar no. 1 was becoming rare, the types had not wasted out completely by the time that the Antonine Wall was built. On the other hand nos. 8 and 15 have not yet been noted in a pre-Wall-fort deposit—Cardurnock is probably to be connected with the later building phase, in and after A.D. 128[5] — and the types are as common in early-Antonine as in Hadrianic deposits. The group then appears to belong to late rather than early in Hadrian's reign. This provides an approximate date for the filling of the Vallum ditch at Birdoswald—some time in the 130's.

The structural evidence for the date that the ditch of the Vallum was filled, considered without reference to the pottery, gives similar results. The Turf-Wall milecastle at High House (M/C 50 TW) was built while A. Platorius Nepos was governor of Britain[6]; his term of office began in A.D. 122. This milecastle was abandoned when the corresponding Stone-Wall milecastle was built, some time before the end of Wall period I A. The Vallum diverges from its course to avoid the Turf-Wall milecastle, and it was therefore constructed after A.D. 122 but some time before the end of Wall period I A. Evidence from the Wall in Northumberland confirms this and allows greater precision to be attained. The forts at Halton Chesters[7] and at Benwell[8] were built while A. Platorius Nepos was still in office, though

[5] CW2 xlvii 123.
[6] CW2 xxxv 229.
[7] AA4 xiv 161.
[8] AA4 xix 19.

Halton Chesters fort was not built until after the ditch of the Wall had been dug. The Vallum diverges from its course to avoid both forts, and at Benwell a causeway of undisturbed subsoil was left in the Vallum ditch opposite the south gate.[9] The Vallum was therefore probably constructed several years after A.D. 122. The fort at Carrawburgh was built over the filled-in Vallum ditch.[10] The most plausible interpretation of a building inscription[11] found at the fort is that it records the initial building while Sextus Julius Severus was governor of Britain, that is in the early 130's. The upper and lower limits for the construction of the Vallum are thus known; and further, an approximate date, late in the 120's, for the actual operation is obtained by considering the probable length of time that elapsed between the various stages of the Wall building programme.

The botanical analysis of 1928, already referred to, shows that a very few years had elapsed between the digging and the re-filling of the Vallum ditch. When this fact is taken in connection with the evidence for the date of construction of the Vallum, it brings the act of re-filling to some time in the latter half of Hadrian's reign.

Two separate lines of approach thus lead to the same conclusion; the structural and botanical evidence, without reference to the pottery, and the style of the pottery in the filling, without reference to the known date of the vallum or to the botanical evidence, each independently establishes the fact that the Vallum, its ditch and its crossing were obliterated at Birdoswald in the latter half of Hadrian's reign.

The complete references to the reports from which parallels have been quoted are as follows. The usual abbreviations have been used for periodicals.

[9] AA4 xi 176.
[10] Durham University Journal xxix 95.
[11] JRS xxxiv 87.

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Balmuildy	S. N. Miller, *The Roman Fort at Balmuildy*, 1922.
Birdoswald, 1929	CW2 xxx 175f.
Cardurnock	CW2 xlvii 108f.
Chesterholm	AA4 xv 222f.
Corbridge, 1911 and 1938	AA3 viii 168f, and AA4 xv 266f.
Denton Hall, T 7b	AA4 vii 151f.
Haltwhistle Burn	AA3 v 264f.
High House, M/C 50	CW2 xiii 339f.
Newstead, 1947	PSAScot., forthcoming.
Poltross Burn, M/C 48	CW2 xi 446f.
Slack	YAJ xxvi 61f.
Throp	CW2 xiii 374f.

APPENDIX VII. POTTERY FROM THE VALLUM FILLING AT BENWELL.

The Pottery -

The writer wishes to point out that what small knowledge she does possess of Roman pottery she has learned from E. BIRLEY, Esq., M.A., F.S.A., and J. P. GILLAM, Esq., M.A. She wishes to thank Mr. Gillam for his advice and help in the drawing and dating of the pottery, Mr. Birley for his valuable criticism on the discussion of the context and significance of the pottery, and Professor Richmond and Mr. Birley for their aid in the presentation of this report generally.

The following abbreviations have been used:-

AA$^{3/4}$ - ARCHAEOLOGIA AELIANA, 3rd or 4th series.
CW^{2} - TRANSACTIONS OF THE CUMBERLAND AND WESTMORLAND ANTIQUARIAN AND ARCHAEOLOGICAL SOCIETY, New Series.
Y.A.J. - YORKSHIRE ARCHAEOLOGICAL JOURNAL.
Mc. - Milecastle
S.W. - Stone Wall (Hadrian's)

REFERENCES

The following reports have been referred to in the case of each fragment of pottery. Only the reports in which the parallels have been discovered have been listed after the description of each fragment of pottery, and the default of any report from the list signifies a complete lack of parallels. The parallels are exact unless otherwise stated, and are in alphabetical order. Cross-references to other similar fragments in the deposit have not been made except with unusual pieces not having parallels elsewhere.

Balmuildy. "The Roman Fort at Balmuildy" by S. N. Miller, 1922.
Benwell 1926. AA^{4} vol. iv. p. 175-83. Hadrian's Wall Fort.
Bewcastle. CW^{2} vol. xxxviii. p. 219-29. Outpost Fort of Hadrian's Wall.
Birdoswald. CW^{2} vol. xxx. p. 187-98. Hadrian's Wall Fort.
Cardurnock. CW^{2} vol. xlvii. p. 108-21. Mile-fortlet on the Cumberland Coast.
Carlisle. Tullie House catalogue. CW^{2} vol. XVII.
Chesterholm. AA^{4} vol. xv. p. 222-37. Stanegate Fort.
Corbridge 1911. AA^{3} vol. viii. p. 168-86. Fort on Stanegate.
Corbridge 1938. AA^{4} vol. xv. p. 266-84. Fort on Stanegate.
Corbridge 1947. AA^{4} vol. xxviii. p. 177-201. Fort on Stanegate.

Haltwhistle Burn. AA[3] vol. v. p. 264-70. Hadrianic interval Fort.

Milecastle 9, Chapel House. AA[4] vol. vii. p. 158-64.
Milecastle 48, Poltross Burn. CW[2] vol. xi. p. 446-58.
Milecastle 50, S.W., High House. CW[2] vol. xiii. p. 356-9.
Mithraeum, AA[4] vol. xxix. p. 62-84. Temple on Hadrian's Wall, at Carrawburgh.
Slack. (Excavations 1913-15). Y.A.J. xxvi. p. 61-71. Pennine fort occupied from c. A.D. 80-140.
Throp. CW[2] vol. xiii. p. 374-9. Hadrianic interval fort.
Turret 7b, Denton Hall. AA[4] vol. vii. p. 150-2.
Turret 49b, Birdoswald. CW vol. xiii, p. 346-50
Turret 50a, S.W., High House. CW[2] vol. xiii. p. 350-1.
Turret 50b, S.W., Appletree. CW[2] vol. xiii. p. 351-6.

SAMIAN REFERENCES. Oswald and Pryce: Terra Sigillata. Report on Excavations at Silchester.

Reference Dating

References to all Wall structures follow the usual Wall periods for dating purposes:

IA	- A.D. 120-140.
IB	- A.D. 160-197.
II	- A.D. 197-295.
III	- A.D. 297-367.

Chesterholm and Corbridge were originally Flavian forts and were occupied from c. A.D. 79-125. Corbridge was reoccupied in A.D. 139, Chesterholm in c. A.D. 160, both following henceforth the usual Wall periods. Hadrianic interval forts were occupied only during the first stage of building of Hadrian's Wall, c. A.D. 122-25.

In every case the dates quoted in references are those given in the reports. Where precise dating is lacking in the texts, the date of the fort is substituted: for example - references to Slack are invariably "Trajan-Hadrian" since the fort is presumed to be occupied during that period: "Flavian" is omitted in this case since the fragments in question are obviously not so early.

TREATMENT AND DESCRIPTION OF VESSELS

All coarse pottery, sufficiently well-preserved to draw,

whether stamped or not, has been drawn, described, discussed, and where possible, approximately dated. Where there are a great number of the same type of vessel, the less well preserved fragments have not been drawn, but have been described and dated. A small proportion of interesting but undrawable pieces have also been noted, and if possible roughly dated.

The division of pottery into classes, and the general order for treatment follow precisely the lines laid down by Mr. Gillam in the Corbridge 1947 report i.e. from "bulbous, narrow-necked vessels to flat open vessels" in this order:

(a) Flagons.
(b) Jars: miscellaneous: narrow-, medium-, and wide-mouthed in that order.
(c) Cooking pots.
(d) Beakers.
(e) Mortaria.
(f) Bowls and Platters.

Where vessels of the "olla" class are not recognisably cooking pots they have been classed as jars. The distinction between bowls and platters is not always clear, since often only very small fragments remain of the vessel. Where uncertain they have been described as "bowl-platter". The cooking pots and bowl-platter classes compose the highest proportion of fragments in the deposit.

A small amount of Samian is included in the deposit. It is invariably plain, and has not been drawn, but the types have been noted.

FABRIC.

Apart from a small number of fragments recognisably Flavian, and a small proportion of vessels of the white-yellow-red colour group e.g. mortaria, the deposit consists almost exclusively of what are familiarly known as "fumed" ware (first described as such by May: "The Roman Pottery in York Museum, Part III": Report of the Yorkshire Philosophical Society, 1910), i.e. ranging from a light-grey colour to a deep black. It has become well known since that time that the surfaces of such "fumed" ware have been treated differently. Sometimes they have been burnished, i.e. polished, to varying degrees; sometimes not. The cooking pots typical of the Hadrian-Antonine period are deep black, with lightly polished surface, and an unburnished area round the body of the vessel, usually decorated with lattice or cross-hatching. The deposit at

present under consideration consists of a small number of similar polished vessels. But by far the greater proportion are of a hard, rough, grey (not black) fabric with matt surface; sometimes with a slight brownish or pinkish tinge. This fact is most interesting and indeed illuminating in the typological study of pottery, and has been considered in the dating of the deposit above. Another interesting fact has emerged. Quite a number of the bowls described, and a relatively small number of cooking pots all belonging to the "fumed" ware type, seem to be coated with a lightish-grey "slip" i.e. wash, or thin colour-coat put on after the vessel has been fired, giving a "streaky" effect. The surface is usually matt, but occasionally polished examples occur. Neither this unusual characteristic nor the rough, matt surface mentioned above can be explained away by the effects of chemicals in the soil, since occasional examples of the black, burnished type survive in the same deposit. These characteristics must be regarded as of chronological and therefore of typological significance, and perhaps of a localised one. Corbridge, Chesterholm and other sites provide examples of the grey matt-surfaced cooking pot, with a slight brownish or pinkish tinge, but so far as the writer is aware, there is no other instance of the "streaky" appearance characteristic of a number of vessels in this deposit.

All jars, cooking pots, bowls and platters have been described accordingly. The term "fumed" is usually taken for granted. The terms "matt", "polished", and "streaky" have been employed to describe the surfaces.

SHAPE.
Cooking Pots

The preponderant type of rim-shape is the rather straight out-bending rim, sometimes slightly curved and with a slight bead, giving a squatter effect than the somewhat more upright, though curved Hadrian-Antonine type. The stage of the "cavetto" rim (i.e. curving well out, roughly at an angle of 45 degrees from the horizon, and with a marked bead) of the third and fourth centuries, has not yet been reached, in typological development. The shoulder usually runs straight from its junction with the rim, instead of arching as in the Hadrian-Antonine and the late third and fourth century vessels of the same class. The appended drawings speak more adequately and accurately than any description, but these two characteristics ought to be stated. In the bowl-platter class, the typological development from the roll- or bead-rim is manifest in the accompanying drawings. Suffice it to add that the greater proportion are of the roll-rimmed and not the flat-rimmed type.

DIAMETER

The diameter is invariably given in the centre of each drawing. The measurement, unless otherwise stated, is taken from the outside of the rim. I.D. means Internal Diameter.

BOX I
(from the first occupation layer over Vallum filling)
Flagons
1. The neck of a single-handed flagon of "screw-neck" type in hard, light-buff fabric with cream slip. The lip is exaggerated and protruding, with vestiges of three grooved lines below. The handle, with a deep groove slightly off-centre, is rounded.

Cf.	Benwell 1926,	fig. 11. 53.	2nd century.
	Cardurnock,	fig. 11. 45.	(pinkish-grey) Unstratified.
	Carlisle,	pl. 10. 131b.	(cloudy-cream) Mid 2nd cent.
	Corbridge 1911,	fig. 8. 92.	Derived from 1st century types.
	Haltwhistle Burn,	2.	(red fabric) Early Hadrian.
	Slack,	pl. xxiv. 117.	(red) Trajan/Hadrian.
	Turret 49b,	pl. xvi. 6.	(pinkish-yellow) Period I.

Both typologically and empirically this flagon may be assigned to circa A.D. 120-140.

2. The neck of a single-handled flagon of "screw-neck" type in a fabric identical with that of no. 1. No. 2 is far superior in workmanship, being symmetrical and more slender. The lip is more protruding than in no. 1 but the grooves are more pronounced, suggesting a slightly earlier date. The handle is much squarer.

Cf.	Balmuildy,	pl. XLIII. 3.	(red with cream slip) Antonine fort.
	Benwell 1926,	fig. 11. 53.	2nd century.
	Cardurnock,	fig. 11. 45.	(pinkish-grey) Unstratified.
	Carlisle,	pl. x. 130.	(light-reddish brown) Beginning of 2nd century.
	Corbridge 1911,	fig. 6. 89.	(squatter) Derived from 1st century types.
	Corbridge 1938,	fig. 9. 7.	Antonine.
	Haltwhistle Burn,	2.	(red) Early Hadrian.
	mc. 50	107.	(reddish-buff) Period I.
	Slack,	pl. xxiv, 116.	(red) Trajan/Hadrian.
	Turret 49b,	6.	(pinkish-yellow) Period I.

This flagon may also be assigned to a date circa A.D. 120-140.

Jars

3. A badly preserved rim fragment of a jar, in smooth, hard, orangey-buff fabric. The rim type is of a late second/early third century date.

There are no parallels to this fragment.

Cooking Pots

4. A rim fragment of a cooking pot in coarse, hard, grey fabric, with a matt surface and the remains of soot on the rim.

Cf.	Birdoswald,	fig. 14. 18f.	(black fumed) from Alley.
	mc. 48,	pl. iv. 25.	Period II.
	turret 7b,	pl. LI. 14.	Period II.
	turret 50a,	pl. xvi. 52.	Unstratified.

The lip is beginning to turn outwards, and the shoulder is flat. These two characteristics, in conjunction with the fabric, enable us to state a late 2nd/early 3rd century date.

5. A rim fragment of a cooking pot in hard, coarse, light-grey fabric.

Cf.	Balmuildy,	p. XLV. 7.	(black fumed) Antonine fort.
	Corbridge 1947,	fig. 7. 34.	(black and highly polished) circa A.D. 200.
	turret 7b,	pl. LI. 15.	(dark buff) Period II.

The lip is turning well outwards, approaching the fourth century "cavetto" rim type, but without a bead: the shoulder is flat as in no. 4. This fragment may be dated to the late second/early third century.

6. A rim fragment of a black fumed cooking pot with two lightly scored lines on the neck. Soot still remains on the fragment.

Cf.	Birdoswald,	fig. 14. 18d.	From Alley.
	Cardurnock,	fig. 10. 6.	(brownish-grey) 2nd century.
	Corbridge 1938,	fig. 7. 14.	(wavy line) Early 3rd cent.
	mc. 9,	pl. LIII. 59.	Period IB.
	turret 49b,	pl. xvi. 21.	(grey) Period II.

This may be assigned to the late 2nd century.

7. A rim fragment of a hard, grey cooking pot with matt surface.

Cf. Similar:-

mc. 9,	pl. LIII. 51.	Period IA.
Slack,	pl. xxiii. 13.	Trajan/Hadrian.
Throp,	9.	Period IA.
turret 50b,	pl. xvii. 55.	Period IA.

Though the only parallels are Hadrianic, the fabric closely resembles that of the majority of cooking pots in this deposit, and thus the fragment may be assigned to a late second century date.

8. This fragment is not drawn. A small rim fragment of a hard cooking pot, with matt surface. There are signs of soot. A late second/early third century date may be assigned.

9. Undrawn. A small rim fragment of a softish, light-grey cooking pot, with signs of soot. Late 2nd/early 3rd century.

10. Undrawn. A small rim fragment of a grey cooking pot of third century type.

11. Undrawn. A base fragment of a hard grey cooking pot with matt surface and vestiges of right-angled cross-hatching. The date of this piece is uncertain.

12. Undrawn. A base fragment of a black fumed cooking pot, grey on the inside and with acute-angled cross-hatching. The fragment may be of Antonine date.

13. Undrawn. The base of a small, soft, light-grey cooking pot of uncertain date.

Beakers

14. Undrawn. Two small side fragments of a beaker in orange colour-coated, rough-cast ware.

Mortaria

15. A rim fragment of a hard, pinky-buff mortarium. The rim is very flat, sparsely covered with white opaque grit, and with only slight bead.

Cf.	Balmuildy,	pl. XLI. 2/4.	Survival from first century.
	Benwell 1926,	fig. 9. 10.	(pipe-clay) Survival from first century.
	Birdoswald,	fig. 13. 6.	(brown, bead too large) From Alley.
	Carlisle,	pl. xi. 138.	(dirty grey) cf. Hofheim. Mid first century.
	Chesterholm,	fig. 5. 61.	(grey orange slip) Early first century.
	Corbridge 1911,	pl. xi. 12, 13.	A.D. 90-100.
	Mc. 48,	pl. iv. 2/6.	Period I.
	Mc. 50	pl. XVIII.101.	Period I.
	Slack,	fig. 44a. 1.	(yellowish-buff) Trajan/Hadrian.

This mortarium is typically Flavian.

Bowls and Platters

16. A rim fragment of a grey fumed bowl burnt red with a polished surface and acute-angled cross-hatching on the sides.

Cf.	Bewcastle,	fig. 24. 31/32.	3rd century.
	Corbridge 1947,	fig. 9. 80.	circa A.D. 200.

Late second/early third century.

17. A small rim fragment of a black fumed bowl with a polished surface and acute-angled cross-hatching;

Cf.	Birdoswald,	fig. 16. 80.	(dark grey fumed) Period 2.
	Corbridge 1911,	fig. 6. 81.	(no cross-hatching) Antonine.
	Mithraeum,	fig. 9, 14.	(dark grey fumed) Third century.

Late second/early third century.

18. A small rim fragment of a black fumed bowl or platter with a polished surface.

Cf.	Balmuildy,	pl. XLVII. 12.	Antonine.
	Corbridge 1947,	fig. 9. 77.	circa A.D. 200.

Late second/early third century.

19. One rim fragment of a hard grey bowl with a light-grey "streaky", matt surface. The chamfer is small and instead of cross-hatching decoration, scored lines run diagonally from top right to bottom left.

Cf. Similar:-
Balmuildy, pl. XLVII. 11. Antonine.
Corbridge 1947, fig. 9. 79. circa A.D. 200.

Late second/early third century.

20. A small rim fragment of hard black bowl with grey core. There are traces of lightly scored lines on the side.

Cf. turret 7b, pl. LI. 18. (dark grey fumed) Unstratified.

Though there are no dated parallels, this fragment is obviously of the same type and date as nos. 16-20.

21. A rim fragment of a softish, light-grey bowl or platter; the walls seem slightly concave, and are decorated by large, obtuse-angled cross-hatching.

Cf. Birdoswald, fig. 16. 65. (decoration different) From Alley.
Cardurnock, fig. 12. 35. Unstratified.
Corbridge 1911, fig. 6. 78. Antonine.
Corbridge 1938, fig. 8. 4. Antonine II.
mc. 9, pl. LII. 35. Unstratified.
Slack, pl. xxiv. 67/71. Trajan/Hadrian.

A second century date may be assigned.

22. A rim fragment of a hard, greyish-white platter, with a "streaky" surface.

Cf. Corbridge 1911, fig. 7. 43. Domitian/Trajan.

Though the one parallel suggests an early date the fabric need not be of the same date and the fabric of no. 22 closely approximates to that of a number of bowls in the deposit. Thus a date in the late second/early third century is indicated.

23. A rim and base fragment of a buff platter with orange slip, partially burnt black.

Cf. Corbridge 1911, fig. 5. 19. Flavian.
Haltwhistle Burn, 10. Early Hadrian.

This platter is typically Flavian.

24. A rim fragment of a black fumed cooking platter with a wavy line. It is difficult to decide whether there is a chamfer or not.

Cf.	Carlisle,	pl. xiii. 176.	(decoration different)
	Corbridge 1911,	fig. 6. 84.	2nd century.
	Corbridge 1947,	fig. 10. 89.	(undecorated) circa A.D. 200.
	Mithraeum,	fig. 10. 19.	(decoration different) Period IIB.
	Mithraeum,	fig. 12. 58.	(with chamfer) Unstratified.

This type of vessel was used both in the second and in the third centuries. It is almost impossible to date it more closely.

25. Undrawn. A rim fragment of a small, grey platter, with a matt light-grey surface. Lines run from top to bottom but are not parallel. Late second century type.

26. Undrawn. A base fragment of a hard, grey chamfered bowl, with light-grey "slip", of a late second century date.

27. Undrawn. A tiny rim fragment of a black fumed platter, of the late second century.

28. Undrawn. Miscellaneous fragments of a coarse grey vessel of uncertain date.

Samian

29. Undrawn. A base fragment of Dragendorff's form 37 with internal rouletting.

Box 2.
(from the first occupation layer over the Vallum filling.)

Jars

1. A rim fragment of a hard orangey-buff jar.

Cf.	Bewcastle,	fig. 26. 68.	(red) Similar type of vessel but not a close parallel.
	Chesterholm,	fig. 4. 46.	(soft light grey) Pre-Hadrianic. Date probably Trajanic.

2. Undrawn. A rim fragment of a small grey jar burnt red.

3. Undrawn. A base fragment of a light-grey smooth jar, with matt surface and moulded base. This fragment is of uncertain date.

4. A rim and shoulder fragment of a large, dark-grey jar with matt surface.

Cf.	Bewcastle,	fig. 25. 36.	(black polished) 4th century.
	Corbridge 1938,	fig. 7. 5.	3rd century.
	turret 7b,	pl. LI. 15.	(for rim shape) Period II.

A third century date is indicated.

5. Two rim fragments of a dark-grey wide-mouthed jar with matt surface.
There is no close parallel, but for the type of vessel see turret 7b, pl. LI. 20. The fabric is of the usual late second/early third century type.

Cooking Pots

6. One rim and shoulder fragment of a smooth grey cooking pot with matt surface, acute-angled cross-hatching, and traces of soot.

Cf.	Balmuildy,	pl. XLV. 8.	Antonine.
	turret 7b,	pl. LI. 9.	(black fumed) Period I.
	turret 49b,	pl. XVI. 24.	(blue-grey) Period III.

The fabric and rim-shape are both typical of late second/early third century.

7. Two fragments of light-grey cooking pot with traces of cross-hatching below a polished shoulder.

Cf.	Balmuildy,	pl. XLV. 14.	Antonine.
	Bewcastle,	fig. 24. 25.	3rd century.
	Birdoswald,	fig. 14. 18m.	(black) Early 3rd century.
	Corbridge 1911,	fig. 6. 48.	Second half of 2nd century.
	Corbridge 1947,	fig. 8. 43.	(black fumed) circa A.D. 200.
	Haltwhistle Burn,	pl. III. 22.	(black) 1st and 2nd periods.
	Mc. 50,	pl. XVIII.119.	period II.

Late second/early third century date.

8. A rim and shoulder fragment of a smooth grey cooking pot with matt surface and black slip on the inside up to the rim.

Cf.	Balmuildy,	pl. XLV. 2.	Antonine.
	Corbridge 1947,	fig. 7. 26.	circa A.D. 200.
	Mc. 48,	pl. IV. 22.	Period II.
	turret 49b,	pl. XVI. 23.	(blue-grey) Period III.
	turret 50b,	pl. XVII. 69.	(red) Period IB.

Late second/early third century date.

9. One rim and shoulder fragment of a hard, light-grey cooking pot with matt surface.

Cf.	Balmuildy,	pl. XLV. 8.	Antonine.
	turret 7b,	pl. LI. 15.	Period II.
	turret 49b,	pl. XVI. 24.	Period III.

Typical of the late second/early third century.

10. One rim and shoulder fragment of a dark-grey cooking pot with matt surface.

Cf.	Balmuildy,	pl. XLV. 9.	Antonine.
	Corbridge 1947,	fig. 7. 22.	(larger) circa A.D. 200.
	turret 50b,	pl. XVII. 81.	Period IB.

Late second century.

11. One rim and shoulder fragment of a grey cooking pot with matt surface. There are traces of soot on the fragment.

Cf.	Mc. 48,	pl. IV. 27.	(soft brown) Period II.

The rim shape is unusual but the fabric is consistent with a late second/early third century date.

12. A rim fragment of a softish grey cooking pot with matt surface and traces of soot.
There are no parallels to this fragment but the fabric and rim-shape suggest a late second/early third century date.

13. A rim fragment of a dark-grey cooking pot.
There are no parallels to the high shoulder, but the rim shape may be compared with Balmuildy pl. XLV. 7.
A late second/early third century date may be assigned.

14. Undrawn. A rim fragment of a hard, coarse, grey cooking pot, with matt surface and soot.
Late second/early third century.

15. Undrawn. A rim fragment of an orange cooking pot which has been wrongly fired.
Late second/early third century.

16. Undrawn. A rim fragment of a dark-grey cooking pot with matt surface; slightly burnt.
Late second/early third century.

17, 18 & 19. Undrawn. Rim fragments of grey cooking pots with matt surfaces.
Late second/early third century.

20. Undrawn. A flaked rim and shoulder fragment of a grey calcite-gritted cooking pot with a shoulder pattern of short diagonal lines within a double line. The fragment is burnt. Its date is unknown.

21 & 22. Undrawn. Base fragments of a hard grey cooking pot with matt surface.
Late second/early third century.

Beakers

23. A rim and shoulder fragment of a dark-grey beaker with traces of line decoration.

Cf.	Balmuildy,	pl. XLVI. 2.	Antonine.
	Birdoswald,	fig. 15. 42.	(blue-grey) Late Period II.
	Cardurnock,	fig. 10. 12.	2nd century.
	Corbridge 1911,	fig. 6. 59.	Late 2nd century.
	Corbridge 1938,	fig. 9. 8.	Antonine II.
	Corbridge 1947,	fig. 8. 44.	circa A.D. 200.
	Mc. 9,	pl. LIII. 55.	(black fumed) Period IB.
	Slack,	pl. XXIII. 11.	(similar) Trajan/Hadrian.
	turret 50a,	pl. XVI. 49.	Unstratified.
	turret 50b,	pl. XVII. 88.	Period IB.

The fragment may be assigned to the late second century.

24. A rim fragment of a lightish-grey beaker.

Cf.	Birdoswald,	fig. 15. 40.	Beginning of period I.
	turret 49b,	pl. XVI. 29.	Unstratified.

The dating of this piece is difficult but the fabric is consistent with a second century date.

25. Undrawn. A small rim fragment of a hard-grey beaker, of uncertain date.

Cf. Box 5, no. 4 which is smooth.

26. Undrawn. A tiny fragment of a whitish beaker with a red colour-coat.

Bowls and Platters

27. The greater part of a black fumed bowl with matt surface, decorative lines running from top right to bottom left and a slight chamfer.

Cf.	Bewcastle,	fig. 24. 31.	(cross-hatched) 3rd century
	Corbridge 1947,	fig. 9. 80.	(cross-hatched) circa A.D. 200.
	Mc. 9,	pl. LII. 40.	(lines in other direction) period II.

An early third century date is indicated.

28. One rim and side fragment of a grey bowl with "streaky" surface. The cross-hatching is still acute-angled but wide and irregular.

Cf.	Balmuildy,	pl. XLVII. 11/12.	Antonine.
	Corbridge 1947,	fig. 9. 79.	circa A.D. 200.
	turret 7b,	pl. LI. 18.	Unstratified.

Late second/early third century date.

29. One rim and side fragment of a dark grey platter/bowl with roughly rectangular cross-hatching.

There is no close parallel to the rather flat rim, but the fragment is clearly of the same general date as no. 28 and many others in the deposit, i.e. late second/early third century.

30. One rim and side fragment of a hard, grey bowl/platter, with almost vertical decorative lines.

There is no close parallel, but

	Balmuildy,	pl. XLVII. 12.	Antonine
and	Corbridge 1947,	fig. 9. 79.	circa A.D. 200

are alike in essential details.

A late second/early third century date may be assigned.

31. One rim and side fragment of a light-grey bowl with "streaky" surface and a decoration of lines running from top right to bottom left.

There are no close parallels but

	Balmuildy,	pl. XLVII. 11.	Antonine
and	Corbridge 1947,	fig. 9. 78.	circa A.D. 200.

are similar.

Late second/early third century.

32. Two rim fragments of a dark-grey bowl with polished surface and no traces of decoration.

Cf. Birdoswald, fig. 16. 80. Period II.
Corbridge 1911, fig. 6. 81. Antonine.
Corbridge 1947, fig. 10 bottom right. 3rd century.
Mithraeum, fig. 9. 14. 3rd century.

This bowl is of third century type.

33. A rim fragment of a dark-grey bowl with no traces of decoration.
No close parallel has been found but the bowl is obviously of the same date as no. 32.

34. Two rim fragments of a hard, light-grey, flat-rimmed bowl, with slightly concave walls and slight traces of cross-hatching.

Cf. Birdoswald, fig. 16. 65. Alley. Period I.
Cardurnock, fig. 12. 35. Unstratified.
Corbridge 1911, fig. 6. 82. Antonine.
Corbridge 1938, fig. 8. 4. (wavy line) Antonine II.
Mc. 9, pl. LII. 35. Unstratified.
Slack, pl. XXIV. 70/71. Trajan/Hadrian.

Late second century date.

35. One rim and side fragment of a black fumed cooking platter with acute cross-hatching and slight chamfer.

Cf. Birdoswald, fig. 16. 83. Alley. Period I.
Corbridge 1947, fig. 10. 89. circa A.D. 200.
Mithraeum, fig. 12. 58. (decoration different) Unstratified.

This platter is of a type which persists throughout the second and into the third century.

36. Undrawn. A rim fragment of a grey platter, burnt red, with no trace of decoration, and of a late second century date.

37, 38, 39 & 40. Undrawn. Rim fragments of grey platters, usually decorated, and of a late second/early third century date.

41 & 42. Undrawn. Rim fragments of a dark-grey bowl and platter, with "streaky" surface.
Late second/early third century.

43. Undrawn. Chamfer fragment of a black fumed bowl. The chamfer is only slight. The bowl is decorated with large cross-hatching with angles approaching 90 degrees.
Late second/early third century.

44, 45 & 46. Undrawn. Three base and chamfer fragments of hard, grey bowls. One is burnt red, another with a "streaky" surface.
Late second/early third century.

47. Undrawn. Two fragments of a dark-grey lid with matt surface. The fabric suggests the usual late second/early third century date.

BOX 3
(from the first occupation layer over the Vallum filling)

Flagons

1. Undrawn. The greater part of a single-handed orangey/pink flagon neck with a creamy-buff slip. The date is uncertain.

Jars

2. Three rim fragments of a hard coarse grey jar burnt slightly red. The surface is matt, the neck and rim double-grooved.
There is no precise parallel but the fabric is suggestive of a late second/early third century date.

3. One rim and side fragment of a tiny, thin, light-grey jar with matt surface.

Cf. Balmuildy, pl. XLV. 9. (cooking pot) Antonine.

Late second century date.

4. A rim fragment of a hard, coarse grey jar with squat fat rim and matt surface.

Cf. Chesterholm, fig. 4. 52. (black fumed) 2nd century?
Corbridge 1938, fig. 7. 4. 2nd/3rd century.
Haltwhistle Burn, 12. (similar) 2nd century.

Second century date.

Cooking Pots

5. A rim fragment of a hard, light-grey cooking pot with a burnished neck. This vessel is of unusual type. The only parallel known is an unpublished example from turret 52a. Period IIA. This shows cross-hatching.

6. Undrawn. The base of a red-fired cooking pot with acute-angled cross-hatching, and of second century type.

7. Undrawn. Half the base of a grey cooking pot with matt surface. This fragment may be dated to the late second/early third century.

Mortaria

8. Undrawn. A badly burnt fragment of a buff coloured mortarium of the late "hammer-head" type and therefore of third century date.

Bowls

9. A small rim fragment of a hard orange bowl of the mortarium type. The only rim-shape parallels come from third century deposits or later, e.g. Bewcastle, fig. 25. 53; Mithraeum, fig. 12. 51; Corbridge 1938, fig. 7. 12: but in every case the fabric is different, since the above parallels are uniformly in fumed ware. The fabric of the present example suggests a Trajan/Hadrian date.

10. Undrawn. One fragment of the chamfer and side of a black fumed cooking platter/bowl with acute-angled cross-hatching.

Second century date.

11. Undrawn. A chamfer and base fragment of a black platter, with decorative vertical lines on a matt surface. The decoration suggests a late second century date.

12. Undrawn. A small rim fragment of a black fumed platter, too flaked to draw.

Samian

13. Undrawn. A small rim fragment, badly burnt in wood fire, of a late second century Curle type no. 21.

Cf. Oswald, pl. LXXIII. 4.
Silchester, pl. XXXIV. LI. Antonine.

BOX 4
(from between the first occupation layer and the Vallum filling)

Flagon

1. Undrawn. The neck of an indented flagon with spout, in buff ware with a light-brown slip. The date is uncertain.

Jars

2. A rim fragment of a softish, coarse, light-grey narrow-mouthed jar.

Cf.	Balmuildy,	pl. XLIV. 1.	Antonine.
	Corbridge 1911,	fig. 6. 68.	(for type) Antonine?
	Corbridge 1938,	fig. 8. 12.	Antonine II.
	Mc. 48,	pl. IV. 37.	Probably period I.
	Slack,	pl. xxiii. 23.	Trajan/Hadrian.

Second century date.

3. A rim fragment of a hard, buff jar with traces of a light-brown slip. There is no close parallel to this example.

Cf.	Box 2 no. I.		
	Bewcastle,	fig. 26. 68.	(red) Second half of 4th century.
	Chesterholm,	fig. 4. 46.	(soft, light-grey) Pre-Hadrian.
	Haltwhistle Burn,	11.	(no groove) Early Hadrian.

The fabric is suggestive of a Trajanic date.

4. One rim and side fragment of a hard coarse grey jar with quartz. On inside, from the neck downwards, the vessel is of a light buff colour.

Cf.	Birdoswald,	fig. 14. 18e.	(black fumed) Alley. Period I

The fabric is rather unusual. Hadrianic/Antonine date.

5. A rim fragment of a soft, light-grey jar, with matt surface.

Cf.	Birdoswald,	fig. 14. 22e.	Alley. Period I.
	Corbridge 1938,	fig. 11. 6.	(similar) Earliest occupation.
	Mc. 9,	pl. LIII. 54.	Period IB.

Second century date.

6. A rim fragment of a soft grey jar with matt surface.

Cf.	Carlisle,	pl. XLI. 157.	(rim shape only) Late 1st century.
	Mc. 9,	pl. LIII. 51.	Period IA.

The fabric is of early Hadrianic type but the piece is not necessarily as early.

7. Two rim fragments of a soft grey jar, with a brownish tinge.

Cf.	Corbridge 1911, fig. 5. 3.		1st century?
	Corbridge 1938, fig. 7. 6.		(polished) 2nd/3rd century.
	Mc. 48,	pl. III. 24.	(brown-red) Early 1st period.
	turret 7b,	pl. LI. 20.	Unstratified.

The date is rather doubtful, but the fabric is once more typical of late second/early third century.

8. A rim fragment of a large dark-grey wide-mouthed jar, with matt surface.
There are no precise parallels, but Cardurnock, fig. 11. 14 (unstratified) shows the type of vessel.
For the date see no. 7.

9. Undrawn. A small rim fragment of a hard, light-grey jar, of early third century type.

10 & 11. Undrawn. Base fragments of a hard, light-grey jar with moulded base.
Second/third century date.

12. Undrawn. A complete base of a thick, coarse, hard, cooking jar.
The fabric is of second/third century date.

Cooking Pots

13. A small rim fragment of a badly flaked, black fumed cooking pot. The vessel is polished, and on the inside the black coating covers only the lip.

Cf.	Cardurnock, fig. 10. 4.		(brownish-grey) 2nd century.
	Corbridge 1947, fig. 7. 20.		circa A.D. 200.
	Mc. 48,	pl. IV. 25.	(grey) Period II.
	Slack,	pl. XXIII. 2.	Trajan/Hadrian.

The vessel is of Antonine date.

14. A rim fragment of a hard, coarse, light-grey cooking pot with matt surface.

Cf. Balmuildy, pl. XLV. 14. Antonine.
Birdoswald, fig. 14. 18f. (black fumed) Alley. Period I
Cardurnock, fig. 10. 6. (brownish-grey) 2nd century.
Corbridge 1938, fig. 8. 11. Antonine onwards.
Mc. 9, pl. LIII. 59. (black fumed) Period IB.
Mc. 50, pl. XVIII.119. Period II.

Late second/early third century.

15. A rim fragment of a hard, coarse, grey cooking pot with matt surface and signs of acute-angled cross-hatching.

Cf. Balmuildy, pl. XLV. 8. Antonine.
Mithraeum, fig. 9. 3. (similar black surface) 3rd century.
turret 7b, pl. LI. 13b. (black fumed) Period II.

Late second/early third century.

16. A large rim fragment of a coarse, grey cooking pot with matt surface.

Cf. Balmuildy, pl. XLV. 9. (smaller) Antonine.
Corbridge 1947, fig. 7. 23. circa A.D. 200.
turret 49b, pl. XVI. 23. (blue-grey) Period III.

Late second/early third century.

17. A small rim fragment of a gritty, grey cooking pot with a soft matt surface.

Cf. Corbridge 1947, fig. 7. 22. circa A.D. 200.
Mc. 9, pl. LIII. 51. Period IA.

Late second/early third century.

18. Undrawn. A small rim fragment of a black fumed cooking pot of the Hadrian/Antonine type.

19. Undrawn. A small rim fragment of a hard light-grey cooking pot with a darker-grey surface.
Second/third century.

20. Undrawn. A good example of a base of a grey cooking pot with matt surface and acute-angled cross-hatching of the late second/early third century.

Beakers

21. A rim fragment of a polished black fumed cooking pot with a beaker rim.

Cf. Balmuildy, pl. XLVI. 3. Antonine.
Birdoswald, fig. 15. 40. Early period I.
turret 7b, pl. LI. 17. Unstratified.
turret 50b, pl. XVII. 57. Period IA.

Second century.

22. One rim fragment of a small soft, light-grey vessel of beaker type, with a flat rim. The vessel, though not colour-coated ware, is of that type.

Cf. Carlisle, p. IX. 113. (Castor type)
Corbridge 1911, fig. 7. 32. 1st century - Flavian.

The vessel may be an early stray.

Castor Beaker

23. The whole of a Castor type of jar in six fragments. The fabric is hard, whitish-buff with orange colour-coat.

Cf. Carlisle, pl. IX. 114. 2nd century.
Corbridge 1911, fig. 6. 75. 2nd century.

Second century.

24. The greater part of a black fumed bowl with a "streaky" surface, a wavy line as decoration and a slight chamfer typical of period.

There is no precise parallel but Balmuildy, pl. XLVII. 18, is of similar type.

Late second/early third century.

BOX 5
(from between the first occupation layer and the Vallum filling).

Jars

1. A badly flaked rim fragment of a hard, coarse, buff-coloured jar.

Cf. Box. 2. no. 1, and Box 4. no. 3.

Cooking Pots

2. A rim fragment of a soft, light-grey cooking pot with matt surface.

There is no close parallel.

Cf. Corbridge 1947, fig. 7. 22/23. circa A.D. 200.
turret 7b, pl. LI. 15. (dark buff, polished) Period II.

Early third century.

3. A rim fragment of a hard, light-grey cooking pot with matt surface and scored lines on inside of shoulder.

Cf. Balmuildy, pl. XLV. 5/24. Antonine.
Birdoswald, fig. 14. 22f. (similar) Early period I.
Corbridge 1911, fig. 7.22/23. (similar) Pre-Hadrian.
Mc. 48, pl. VI. 25. (similar) Period II.
Slack, pl. XXIII. 34. Trajan/Hadrian.
turret 7b, pl. LI. 8. (black fumed) period I.

Second century.

4. A rim fragment of a grey cooking pot with matt surface and traces of soot.

No close parallel has been found.

Cf. Balmuildy, pl. XLV. 7. Antonine.
turret 7b, pl. LI. 15. (dark buff, polished) PeriodII

The vessel clearly has the same general likeness to typical late second/early third century types.

Bowls and Platters

5. Two rim fragments of a hard, grey cooking bowl/platter, with a "streaky" finish and faint traces of cross-hatching.

Cf. Balmuildy, pl. XLVII. 12. Antonine.
Bewcastle, fig. 24. 32. Period II.
Corbridge 1947, fig. 9. 80. circa A.D. 200.

Late second/early third century.

6. A badly preserved rim fragment of a grey cooking platter burnt red.

Cf. Balmuildy, pl. XLVII. 11. Antonine.
Corbridge 1947, fig. 9. 78. circa A.D. 200.
Mithraeum, fig. 11. 38. 3rd century.

Late second/early third century.

7. A badly preserved rim fragment of a black fumed cooking platter with a polished surface.

Cf. Balmuildy, pl. XLVII. 7. Antonine.
Corbridge 1911, fig. 6. 86. (similar) Antonine.
Corbridge 1947, fig. 10. 81. (similar) circa A.D. 200.
Mc. 50, pl. XVIII. 106. (coarse yellow) Period I?
turret 50b, pl. XVII. 65. (red) Period IB.

Late second century.

Samian

8. Undrawn. A well-preserved fragment of a Dragendorff's form 33.

BOX 6
(from between the first occupation layer and the Vallum filling

Flagons

1. Undrawn. A crudely-made neck of a single-handled flagon in light orangey/buff fabric.

Jars

2. A rim fragment of a light-grey narrow-mouthed jar with dark-grey matt surface and brownish tinge.

For the type of vessel,
Cf. Bewcastle, fig. 23. 19. Period II.
Haltwhistle Burn, 17. Early Hadrian.

The fabric is comparable with that of the majority of cooking pots in this deposit and therefore is suggestive of similar date, that is, late second/early third century.

3. A rim fragment of a softish, grey fumed vessel, with white clay core. The surface is highly polished and with a

micaeceous look. Lines are lightly scored round the body, and there are wheel marks round the neck but no real line.

The fabric is without parallel, but for the rim shape see:

Balmuildy,	pl. XLV. 21.	Antonine.
Chesterholm,	fig. 4. 51.	(moulding) Pre-Hadrian.
Mc. 48,	pl. III. 16.	Period I.
turret 50b,	pl. XVII. 87.	Period IB.

The vessel may belong to the second century.

4. A rim fragment of a hard, light-grey jar. Signs of soot show that the jar has been used for cooking purposes.

Cf.	Balmuildy,	pl. XLV. 20.	Antonine.
	Benwell,	fig. 10. 7.	Hadrian.
	Corbridge 1911,	fig. 7. 22.	Pre-Hadrian.
	Mc. 48,	pl. IV. 19.	(similar) Period II.

This fragment is closely dateable, but is not inconsistent with the context.

5. One rim fragment of a small, soft, undecorated light-grey vessel. There is no close parallel.

Cf. turret 49b, pl. XVI. 18. (black) period I.

Early Hadrian?

6. A rim fragment of a small, soft grey jar.

There is no close parallel, and therefore the date is uncertain

Cf. Balmuildy, pl. XLV. 7. Antonine.

7. A rim fragment of a large, soft, grey jar with a black surface.

Cf. Box 4, no. 8.
Cardurnock, fig. 11. 14. for type of vessel.

Late second/early third century.

8. Undrawn. A small rim fragment of a hard, light-grey jar with a smooth surface. The shape is Antonine.
Late second century.

9.- 11. Undrawn. Moulded base fragments of small, soft, grey jars.

12-15. Undrawn. Moulded base fragments of soft red jars with a bluey core and buff-coloured slip.

Cooking Pots

16. One rim and side fragment of a hard grey/black cooking pot. The cross-hatching is large, open, but still acute-angled. Soot still remains on the fragment.

Cf.	Balmuildy,	pl. XLV. 7.	Antonine.
	Corbridge 1947,	fig. 7. 29.	circa A.D. 200.
	turret 7b,	pl. LI. 15.	(dark buff, polished) PeriodII
	turret 50a,	pl. XVI. 52.	Unstratified.
	turret 50b,	pl. XVII. 72.	(polished brown) Period IB.

Late second/early third century.

17. A rim fragment of a hard, light-grey cooking pot with clayey slip.

Cf.	Balmuildy,	pl. XLV. 14.	Antonine.
	Birdoswald,	fig. 14. 18m.	(black) Early 3rd century.
	Corbridge 1938,	fig. 8. 9.	Antonine II.
	Mc. 48,	pl. III. 22.	Periods I & II.
	Mc. 50,	pl. XVIII. 120.	Period II.

Late second/early third century.

18. Two rim fragments of a hard, grey cooking pot with a "streaky" surface.

Cf.	Bewcastle,	fig. 21. 3.	Period II.
	Carlisle,	pl. XII.161.	
	Corbridge 1947,	fig. 7.33.	circa A.D. 200.
	turret 7b,	pl. LI. 13.	(black fumed with wavy line) Period II.
	turret 50a,	pl. XVI. 52.	Unstratified.
	turret 50b,	pl. XVII.72.	(polished brown) Period IB.

Early third century.

19. A rim fragment of a soft-grey cooking pot burnt red.

Cf.	Balmuildy,	pl. XLV. 8.	Antonine.
	Birdoswald,	fig. 14. 22.	Period I.

	Corbridge 1947,	fig. 7. 33.	circa A.D. 200.
	Mithraeum,	fig. 9. 4.	
	turret 7b,	pl. LI. 14.	(black) Period II.

Late second/early third century.

20. A rim fragment of a hard, coarse, light-grey cooking pot with matt surface.

Cf.	Benwell,	fig. 10. 28.	2nd century.
	Birdoswald,	fig. 14. 22d.	(blue-grey) Period I.

Late second/early third century.

21. Three rim fragments of a hard, coarse, grey cooking pot. Soot still remains on the fragments.

This vessel is almost identical with no. 18, but is without the "streaky" surface.

Early third century.

22. A rim fragment of a hard, grey cooking pot with a "streaky" surface, two lightly scored lines round the neck, and vestiges of soot.

Cf.	Balmuildy,	pl. XLV. 8.	Antonine.
	Corbridge 1947,	fig. 7. 28.	circa A.D. 200.

Late second/early third century.

23. One rim fragment of a hard, light-grey cooking pot with two lines scored round the neck.

Cf.	Balmuildy,	pl. XLV. 22.	Antonine.
	Benwell,	fig. 10. 24.	(sandy, dark grey) 2nd century.
	Throp,	pl. XXVI. 11.	Period I.

Second century.

24. Two rim fragments of a thick, coarse, black fumed cooking pot with a zig-zag line underneath rim. The fragments are polished, and well worn.

Cf.	Birdoswald,	fig. 14. 18n.	Period II.
	Cardurnock,	fig. 10. 4.	(brownish-grey) 2nd century.
	turret 50a,	pl. XVI. 52.	Unstratified.

Second century.

25.-33. Undrawn. Small rim fragments of hard, coarse, grey cooking pots, all of the typical late second/early third century type.

34, 35. Undrawn. Tiny rim fragments of small, soft black fumed cooking pots of an early third century appearance.

36. Undrawn. A cooking pot fragment of the same type as 34 and 35. This vessel has a greyish-white "streaky" surface, inside the rim.

Late second/early third century.

37 & 38. Undrawn. Rim fragments of two cooking pots similar to no. 36, one grey, the other burnt red.

Late second/early third century.

Beakers

39. A rim fragment of a polished, black fumed cooking pot with beaker rim.

Cf.	Balmuildy,	pl. XLVI. 7.	(similar) Antonine.
	Birdoswald,	fig. 15. 35.	(Period I)
	Slack,	pl. XXIII. 9.	(similar) Trajan/Hadrian.
	turret 50a,	pl. XVI. 48.	Unstratified.
	turret 50b,	pl. XVII. 88.	(rough grey) Period IB.

Second century.

Castor Ware

40 & 41. Undrawn. Small base fragments of Castor ware beakers. No. 40 has a thick base, denoting a slightly later date than no. 41, but both are of an early shape.

Second/third century.

42. Undrawn. A base fragment of a small buff-coloured vessel of Castor beaker type. The fragment has no colour coat.

Bowls and Platters

43. Large rim and base fragments of a greyish-black bowl with matt "streaky" surface. Diagonal lines run from the top left to the bottom right and take the place of the usual cross-

hatching. The bowl has a slight chamfer, characteristic of the period.

Cf. Corbridge 1947, fig. 9. 79. (similar) circa A.D. 200.
turret 7b, pl. LI. 18. (similar) Unstratified.

Late second/early third century.

44. A rim fragment of a black fumed bowl, polished, with heavy bead rim and acute-angled small cross-hatching.

Cf. Balmuildy, pl. XLVII. 11. Antonine.
Corbridge 1947, fig. 9. 79. (dark-grey) circa A.D. 200.
turret 7b, pl. LI. 18. (dark-grey) Unstratified.

Late second/early third century.

45. Two rim fragments of a grey bowl burnt red with matt surface and acute-angled cross-hatching.

Cf. Balmuildy, pl. XLVII. 10. Antonine.
Bewcastle, fig. 24. 32. (black) 3rd century.
Corbridge 1947, fig. 9. 80. (polished) circa A.D. 200.
Mc. 9, pl. LII. 40. (similar) Period II.
turret 7b, pl. LI. 11. Period I.

Late second/early third century.

46. A rim fragment of a black bowl with matt surface, "light-grey slip" and acute-angled cross-hatching.

Cf. Balmuildy, pl. XLVII. 11. Antonine.
Corbridge 1947, fig. 9. 79. (polished) circa A.D. 200.
turret 7b, pl. LI. 18. Unstratified.

Late second/early third century.

47. A rim fragment of a black fumed bowl, polished, and with right-angled cross-hatching.

Cf. No. 45.

Late second/early third century.

48. A small rim fragment of a black bowl/platter with matt surface. Diagonal lines run from the top right to the bottom left.

There is no close parallel.

Cf. Balmuildy, pl. XLVII. 11. Antonine.
Corbridge 1947, fig. 10. 85. (polished) circa A.D. 200.

Late second/early third century.

49. A rim fragment of a black fumed bowl/platter, polished, and with diagonal lines running from the top right to the bottom left.

Cf. Balmuildy, pl. XLVII. 12. Antonine.
Corbridge 1947, fig. 9. 78. circa A.D. 200.

Late second/early third century.

50. A small rim fragment of a grey platter, decorated with a wavy line.

Cf. No. 49.

Late second/early third century.

51. A large rim fragment of an undecorated brownish bowl with a black surface.

Cf. Birdoswald, fig. 16. 79/80. Period II.
Corbridge 1911, fig. 6. 81. Antonine.
Mithraeum, fig. 9. 14. 3rd century.

Late second/early third century.

52. A rim fragment of a silver-grey bowl-platter with a flat rim, slightly concave sides, a polished surface and right-angled cross-hatching.

Cf. Birdoswald, fig. 16. 65. Period I.
Cardurnock, fig. 12. 35. Unstratified.
Corbridge 1938, fig. 8. 6. Antonine II.
Mc. 9, pl. LII. 35. Unstratified.
Mc. 48, pl. III. 33. (black) Period I.
Slack, pl. XXIV. 70/71. Trajan/Hadrian.
turret 7b, pl. LI. 10. (dark-grey) Period I.

Second century.

53. A rim fragment of a straight-sided, hard, black bowl with matt surface and a wavy line.

No parallels have been found, but the fabric is suggestive of the usual late second/early third century date.

54. One rim and side fragment of a soft, light-grey platter with no decoration.

Cf. Balmuildy, pl. XLVII. 16. Antonine.
Cardurnock, fig. 12. 37A. (lattice decoration) Antonine
fig. 11. 38. (metallic) Antonine.
Corbridge 1938, fig. 8. 5. (cross-hatched) Antonine II.
Slack, pl. XXIV. 73/4. (similar) Trajan/Hadrian.

The fragment is of Antonine date.

55. A rim fragment of a soft, light-grey platter with right-angled cross-hatching. Whether there was a chamfer or not is uncertain.

There is no close parallel.

Cf. Bewcastle, fig. 24. 29. (without chamfer) Period II.
Carlisle, pl. XIII. 174. (with chamfer)
Corbridge 1911, fig. 6. 84. (without chamfer) Antonine onwards.

Second/third century.

56. One rim and side fragment of a black platter with matt surface. The commencement of a slight chamfer may be distinguished. The platter is decorated by a wavy line.

Cf. Birdoswald, fig. 16. 83/84. 2nd century.
Carlisle, pl. XIII. 176. (no chamfer)
Mc. 48, pl. IV. 42. (dull red; no chamfer) Period II.
Mithraeum, fig. 12. 58. Unstratified.
Mithraeum, fig. 10. 19. (different decoration) 3rd century. (survival?).

Second century.

57-63. Undrawn. Small rim fragments of grey bowl/platters; some burnished, some not; some showing acute-angled cross-hatching.

Late second century.

64-69. Undrawn. Small rim fragments of grey bowl/platters with the "rolled rim" of the late second/early third century type; some have acute-angled cross-hatching.

70 & 71. Undrawn. Small rim fragments of coarse, grey platter/bowls with the flat, protruding rim of the Hadrian/ Antonine type.

72. Undrawn. Similar to nos. 68 and 69 but with concave sides burnt red. Late second/early third century.

73. Undrawn. A rim fragment of a soft, grey bowl of the late second/early third century.

74-80. Undrawn. Base and chamfer fragments of black fumed bowls; some with cross-hatching, some with wavy lines; some having "streaky slip" both inside and out. They are typical of the bowl/platter type nos. 43-56 and are therefore all assignable to late second/early third century.

Samian

81-103. Undrawn. Undecorated types.

3 rim, 1 side, 2 base fragments of Dragendorff's form 18/31.
6 rim fragments of form 33.
6 rim fragments of form 27.
1 rim and 1 side fragment of form 35/36 with leaf decoration.
1 rim fragment of the same type with no decoration.
1 rim fragment of form 15/17.

BOX 7
(from the Vallum filling)

Mortaria

1. One rim and spout of a reddish mortarium with a pinkish-cream slip and low bead. There is a groove round the edge of the rim characteristic of this potter, who has stamped his name ANAVS on this rim fragment.

Cf. Corbridge Mortarium Stamps, no. 1.

The potter's work is dateable to the years A.D. 160-180.

2. Two rim fragments of an orangey-pink mortarium with a cream slip and a spout; there is grit on inside only, white opaque and brown; the rim is grooved and stamped on either side of the spout: ANAVS.
See no. 1. A.D. 160-180.

3-7. Rim fragments of pinky-buff mortaria with cream slip; the grit, usually up to the bead, is brown, red and white opaque; the bead is low and there is a groove round the rim as in nos. 1 & 2. This vessel clearly belongs to the same potter ANAVS. A.D. 160-180.

8. A rim fragment of a pinky-yellow mortarium with grey core, no slip, no groove round the rim and with a low bead. The rim shape is of the same general type as nos. 1-8 and is probably assignable to ANAVS. A.D. 160-180.

Cf. Balmuildy, pl. XLI. 19; pl. XLII. 28. Antonine.

9. One rim and side fragment of a soft, dirty-buff mortarium of gritty fabric. The grit inside is large, white, black and grey, the bead vestigial, the rim deeply hooked. Except for the fabric this fragment may be compared with Corbridge Mortarium Stamps, no. 19, made by the potter DUBETAUS, who worked from A.D. 140-200.

Cf. Balmuildy, pl. XLII. 31/32. Antonine.
Benwell, fig. 9. 11. 2nd century.
Chesterholm, fig. 5. 60. Pre-Hadrian.
Mc. 50 S.W., pl. XVIII. 113. (red) Period II.

Taking both the fabric and rim-shape into account, it would be safe to call it Antonine.

10. Three fragments of a pink mortarium with no slip, a high bead and a broad flat rim with an abrupt hook-over at end. This cannot be closely paralleled and is therefore difficult to date.

Cf. Carlisle, pl. XL. 149. (dirty drab)
Corbridge 1938, fig. 11. lower 4. Sullonius - Pre-Hadrian.

11. Undrawn. Half of the spout of a lead-grey mortarium with a cream slip and hooked-over rim. The date is unknown.

12. Undrawn. One side and one base fragment of a pinkish-buff mortarium with a cream slip; the grit, up to the bead, is both large and small, white and brown.
Cf. no. 1.

13. Undrawn. Two fragments of a pinkish-buff mortarium with no slip, small grit and a low bead. The vessel is of the ANAVS type.

14. Undrawn. Three joining fragments of the base of a dirty buff mortarium; the grit inside is very sparse and small.

15. Undrawn. Two base fragments of a light buff mortarium; the grit of a light-brown, grey colour, is very coarse.

16. Undrawn. A base fragment of an orangey-red mortarium with a grey core and buff slip; the grit is thick, small and mainly white opaque.

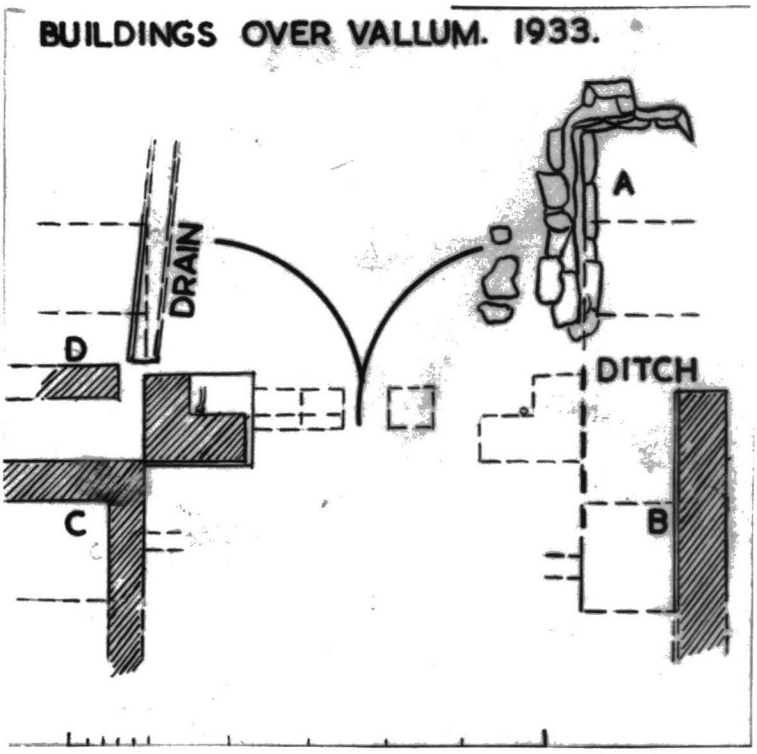
17. Undrawn. A base fragment of a large orange mortarium with a grey core, cream slip and white, coarse grit.

18. Undrawn. A base fragment of a pinky-buff mortarium with a cream slip and small white and brown grit.

19. Undrawn. Fragment of a spout and the side of a shallow, orangey-red mortarium, with a buff slip; the grit is sparse but coarse.

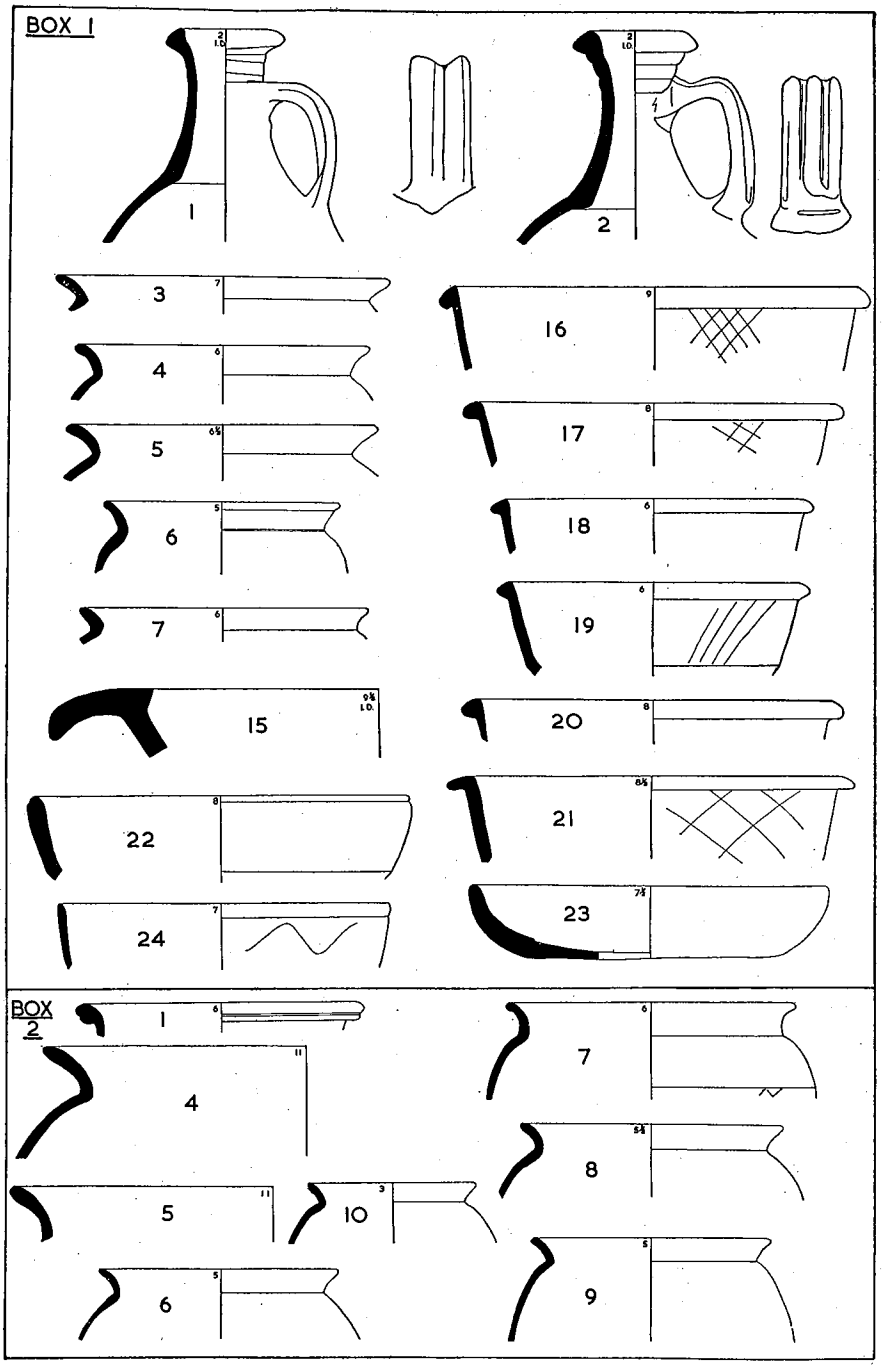
20. Undrawn. A large spout fragment of a pinkish-buff mortarium with a cream slip.

Plan 132.



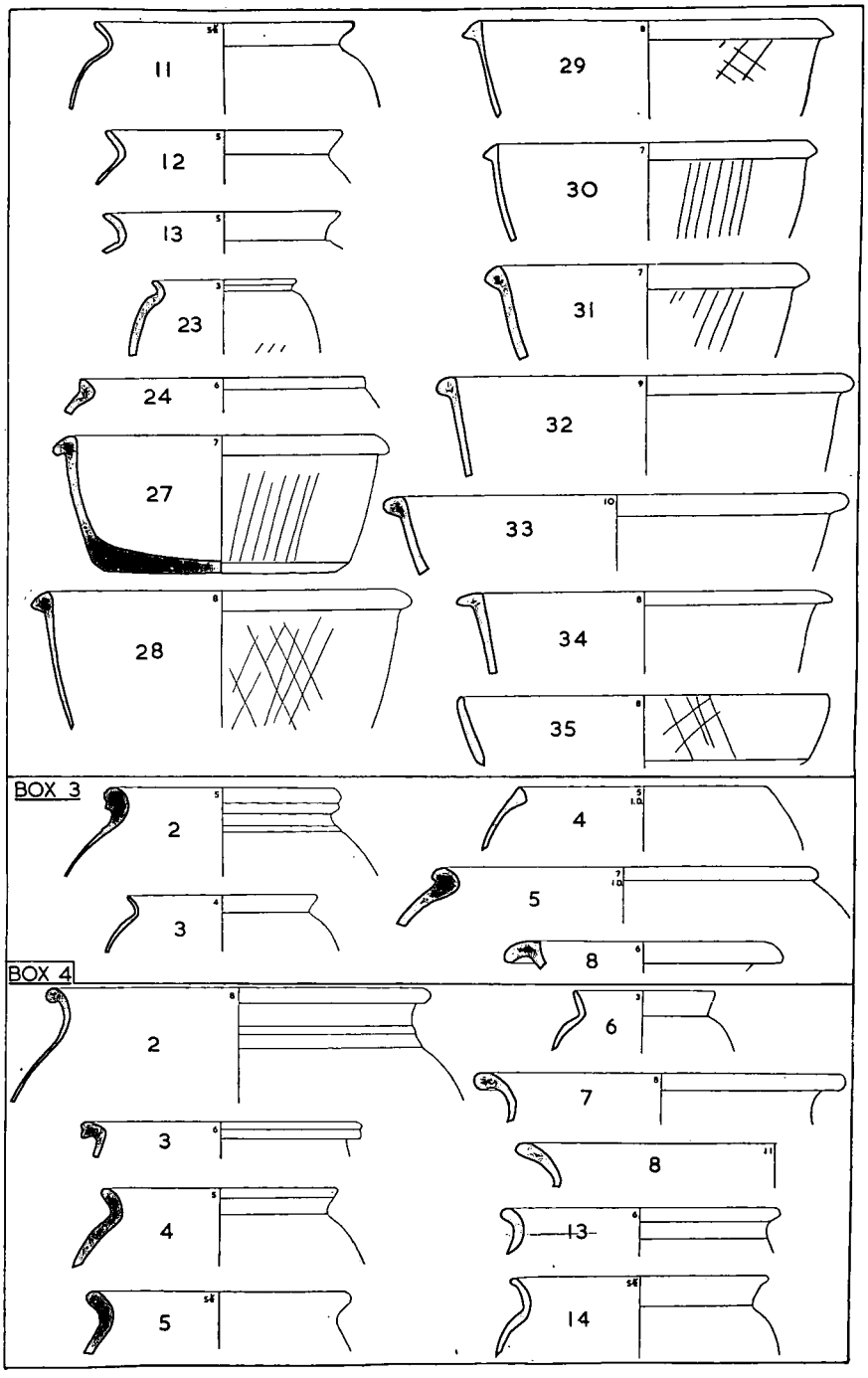
POTTERY FROM THE VALLUM FILLING AT BENWELL.

133 (a)



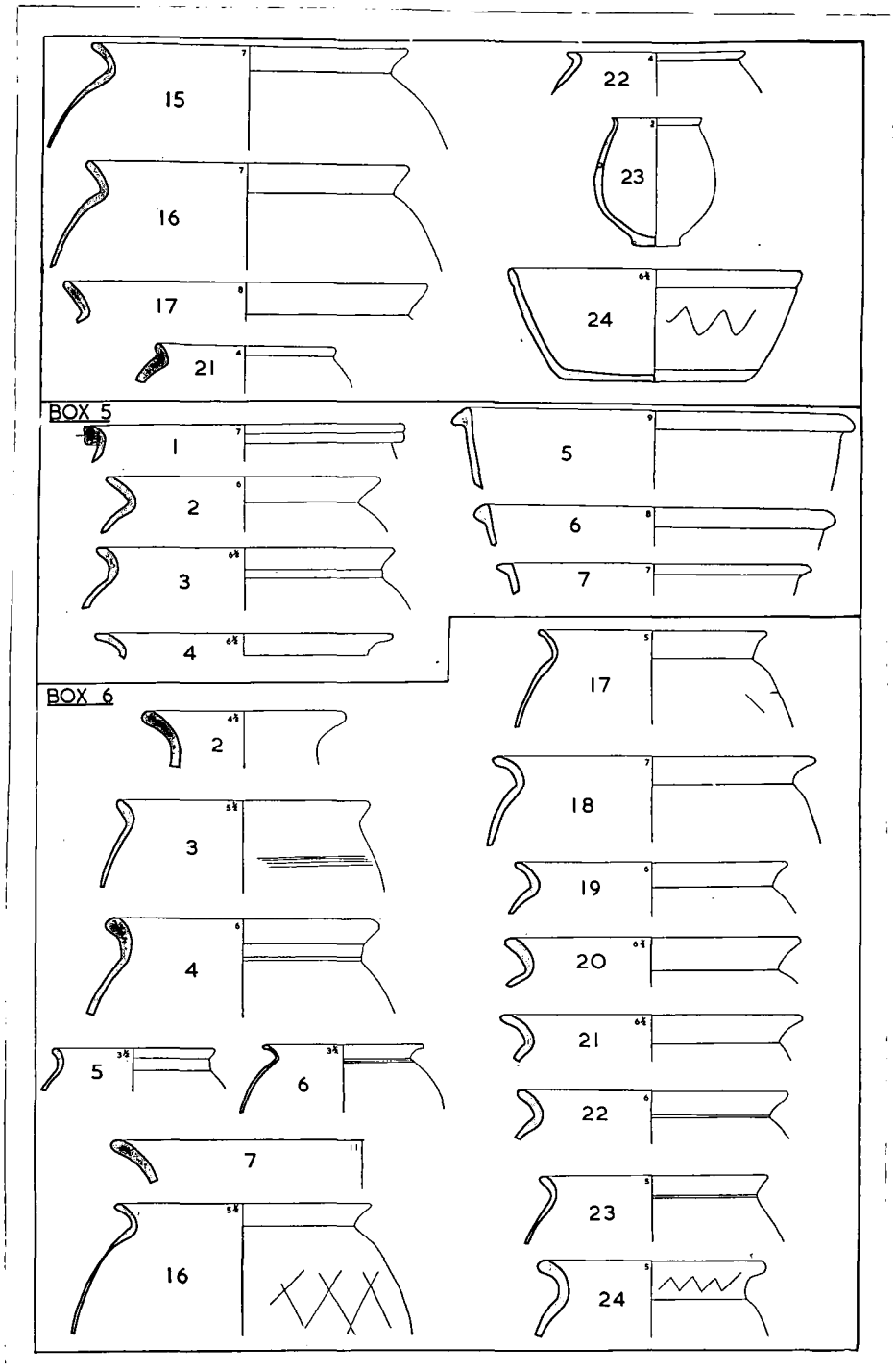
POTTERY FROM THE VALLUM FILLING AT BENWELL.

(b)



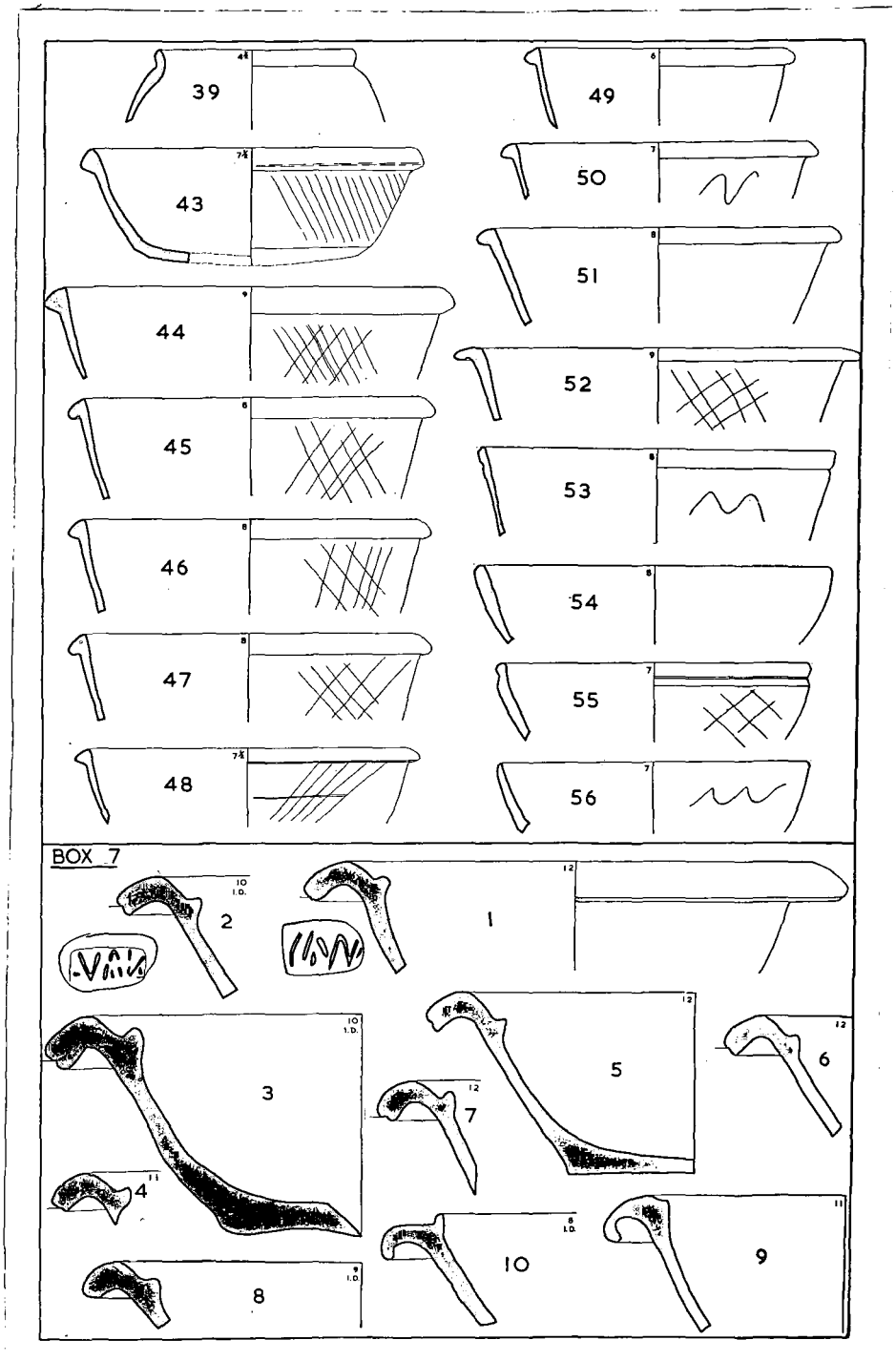
POTTERY FROM THE VALLUM FILLING AT BENWELL.

(c)



POTTERY FROM THE VALLUM FILLING AT BENWELL.

(d)



APPENDIX VIII

THE BUILDING OF THE VALLUM

Nothing certain was known concerning the method of construction of the Vallum until 1936, when five centurial stones were discovered on the Vallum near Denton Burn during building operations.[1] The stones were in two groups about 600 Roman feet apart, and were set into the inner faces of the north and south mounds opposite to one another. They clearly marked sectors of the Vallum built by different centuriae. The stones were thin slabs, about 3 inches thick, and quite unlike normal building stones or the centurial stones from Hadrian's Wall. The structural significance of the discovery was summarised thus:

> "The newly found stones show that the Vallum was being built in units no longer than 300 Roman feet, and perhaps considerably shorter. The work was done by centuries, like the work on the Wall, and by auxiliaries as well as legionaries. Each unit was entirely responsible for the whole of the work in its sector, digging the ditch and disposing the upcast in the north and south mounds. Finally, it marked each end of its length with a centurial slab."

The texts of the inscribed stones.

1. ⅂ PRO(CULI) - probably of legion II.

2. ⅂ TU(lli)

3,4 ⅂ VAL(eri) FL(avi) - probably of legion II.

5. COH. I. DACOR(um) ⅂ AEL(i) DIDA(e).

In 1953 three more Vallum centurial stones were discovered, not hitherto published. One was found in situ, at the last crossing in field 109 west of Copperas Lane and the earlier group of centurial stones i.e. some 900 feet west of stones 1 and 5 above. This is an interesting confirmation of Professor Richmond's conclusions in 1936 concerning the unit of construction. However though the stones found in 1936 did not coincide with crossing positions, the newly discovered example was placed at a crossing, but had not been removed by it. If then the crossings system

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1. AA[4] xiv. 237-242

is related at all to the position of centurial stones, or involved their removal[2], the area in question is one exception to the rule. The text of the stone is as follows:

7 ATISII

During the excavation of the Mithraic Temple at Rudchester, two centurial stones of the Vallum type were found[3] built in the walls of the temple. One was illegible, but the other attested the work of the century of IUV(entus).

C.E.Stevens and the Building of the Vallum[4]

In the course of an amazing reconstruction of the technical details of the building of the Wall and their attribution to certain seasons of work, Mr. Stevens necessarily includes the construction of the Vallum. His reading of the evidence at Chesters fort is that the fort ditches were dug before the Broad Wall foundations and turret 27a were constructed, as a result of a "flap" in the planning staff. The Vallum, in his opinion, had already been constructed there before the foundation layers had reached the site. Whilst one can appreciate Mr. Steven's difficulty in finding some work for the "curtain gangs" of legion XX to do for the second half of the third season i.e. in A.D. 124, it is none the less unjustifiable to make a "plausible guess" that they were building the Vallum. Thus contrary to all factual evidence Mr. Stevens is convinced that " a Vallum was intended from the beginning", and that the original plan was to have a Wall and Vallum without any forts. The impracticability of barring off the fighting garrison, housed in the Stanegate forts, from the Wall which they were intended to support and maintain, by a continuous earthwork renders Mr. Stevens' theory open to ridicule. That the Vallum must be later than the construction of most Wall forts has already been demonstrated[5], but Mr. Stevens has carefully ignored the overwhelming evidence for this conclusion. Moreover,

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2. See above pp.274-5
3. I owe this information to Mr. Gillam
4. Building of Hadrian's Wall: third Horsley Memorial Lecture, published 1948.
5. See above pp.188-195

epigraphic and structural evidence makes a date after A.D. 128 essential for the construction of the Vallum. Thus, not only is Mr. Stevens wrong concerning the Vallum, but his elaborate timetable for the construction of the Wall falls to the ground.

APPENDIX IX

THE PILUM MURALE

In May 1951 during the excavation of the eastern side of the Vallum causeway south of Great Chesters fort, a long wooden object was discovered. It was embedded in the dense black silt accumulation just east of the causeway revetment and near the north lip of the Vallum ditch. It is a fine example of what is thought to be a pilum murale, and is the first to be discovered along the line of the Wall, and the third in the whole country. In 1908 two were found in a well or pit at the fort of CASTLESHAW[1] in the Pennines. At that time such stakes had been found on two continental sites: 1 at the Saalburg[2] in the north-west corner of the fort, and 300 in a ditch of the fort of Oberaden.[3] Some of the latter bore inscriptions naming centuries.

It is not certain that such stakes may be equated with the pila muralia though Professor Kropatscheck argued in favour of such an equation in connection with the Oberaden stakes. Literary sources[4] give us the name pila muralia but not a description of the weapons, for such seems to have been their purpose. Yet it is "difficult to understand how so light a weapon could ever acquire sufficient momentum to be in any sense deadly."[5] "No-one who has handled one of these stakes can imagine that it would have much effect as a weapon to be hurled at the enemy, though it may be possible to think of it at used in a hand-to-hand fight."

These doubts may be underlined. The examples seem more likely to be stakes than weapons. Mr. Gillam has made an interesting suggestion as to their purpose - that they were in fact stakes carried among the impedimenta of a soldier for use in the defence of temporary camps. The stake was pointed at either end for obvious reasons: it would be easier to erect a stake in the mound of a temporary camp if the end were pointed, whilst the other

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1. "The Roman Forts at Castleshaw: Second Interim Report." F.A. Bruton. ~~Report of Excavations at Castleshaw~~, plates 24 ~~27~~ fig. 1.
2. Annual of the Royal Archaeological Institute of Berlin. plate 24 fig. 2.
3. ibid. plate 25.
4. Caesar: Gallic War Bk. V. 40,6; Bk. VII. 82,1.
   Tacitus: Annales. iv. 51
5. Castleshaw pp. 41-44

end would be pointed for defensive purposes. They were made of wood so that they would be light to carry and the notch in the centre of the stake may also have been for ease of carrying. If this purpose is correct, and it seems more logical than to suppose them to be weapons, then it is unlikely that they are "pila muralia".

The Great Chesters example is the first not to be found in a first century context, and thus the suggestion that pila muralia ceased to exist after the first century is demonstrably wrong. Its position high up in the silted Vallum ditch but below the grey secondary filling prove that this stake was in use towards the end of the second century. It seems to have been accidentally dropped into the ditch since it was not associated with any other rubbish. It cannot have any significance as far as the purpose of the Vallum is concerned.[6]

NB. See photograph in pocket at back.

6. Neilson: Per lineam valli
See above p.23.

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ABBREVEATIONS .

AA.$^{1-4}$	Archaeologia Aeliana, series 1-4.
BR.	Britannia Romana: Horsley. 1732.
CIL.	Corpus Inscriptionum Latinarum.
CW.^{1,2}	Transactions of the Cumberland and Westmorland Archaeological and Antiquarian Society, series 1 and 2.
D& N.	Transactions of the Durham and Northumberland Archaeological and Architectural Society.
EE.	Ephemeris Epigraphica.
3rd.edit.	HB. 3rd. edition of Bruce's Handbook to the Roman Wall.
10th. edit.	HB. 10th. edition of Bruce's Handbook to the Roman Wall, revised by I.A.Richmond.
JRS.	Journal of Roman Studies.
LS.	Lapidarium Septentrionale. 1875.
M.	MacLauchlan: Memoir written during a Survey of the Roman Wall. 1858.
NCH.	Northumberland County History.
O.S.	Ordnance Survey maps, 25 inches to the mile, latest edition.
PHB.1949.	Handbook to the Centenary Pilgrimage of Hadrian's Wall 1949, by E.Birley.
PSAN.$^{1-4}$	Proceedings of the Society of Antiquaries of Newcastle upon Tyne, series 1 to 4.
2nd. edit.	WB. 2nd. edition of Bruce's Wallet Book to the Roman Wall.
EB.	Eric Birley.
FGS.	F.G.Simpson.
IAR.	I.A.Richmond.
RGC.	R.G.Collingwood.

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A bibliography of pottery references is given in Appendix VIII.

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The reports marked with an asterisk are of particular value.

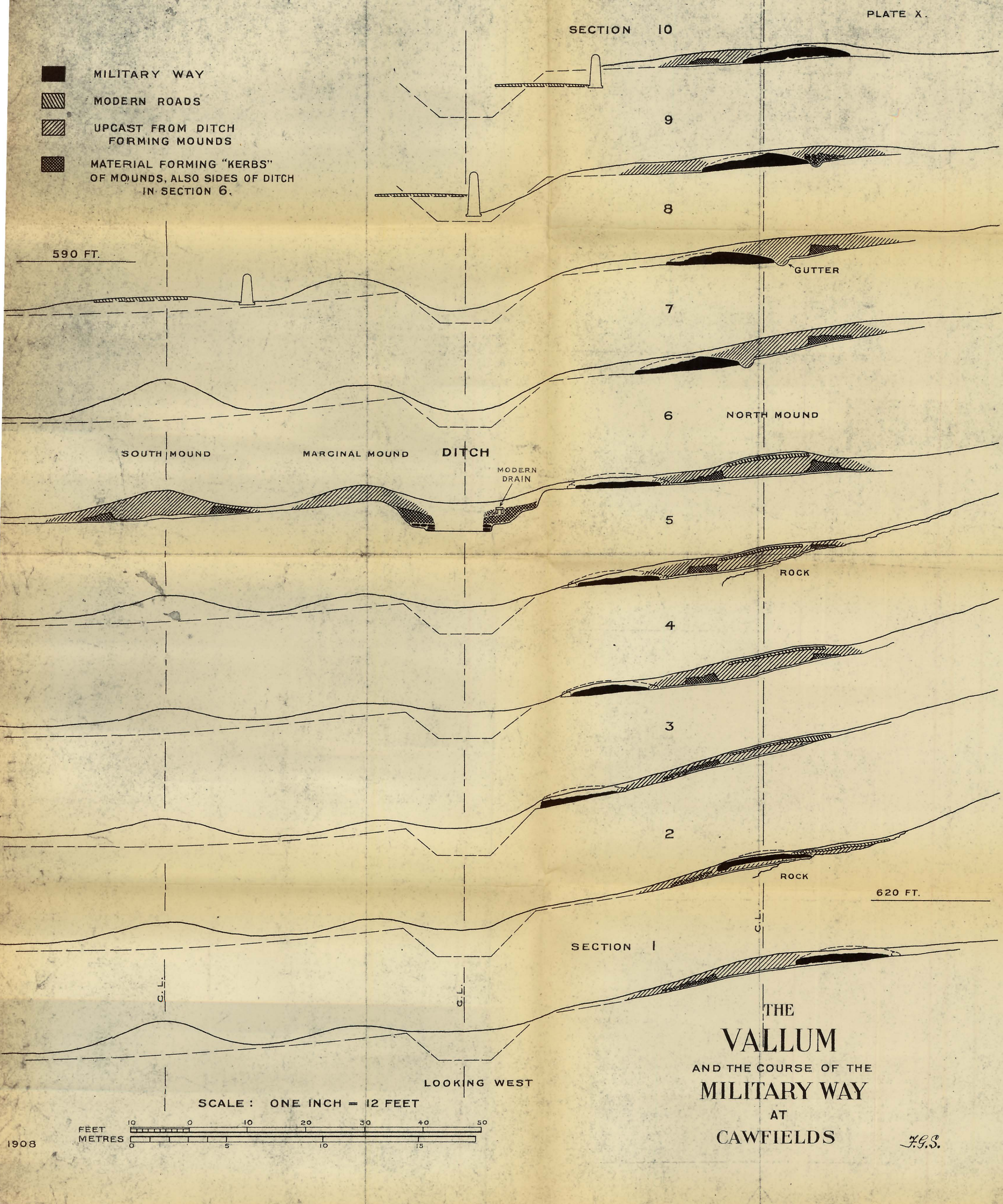
PLATE X.

MILITARY WAY

MODERN ROADS

UPCAST FROM DITCH FORMING MOUNDS

MATERIAL FORMING "KERBS" OF MOUNDS, ALSO SIDES OF DITCH IN SECTION 6.



SCALE : ONE INCH = 12 FEET

FEET 10 0 10 20 30 40 50

METRES 0 5 10 15

1908

THE VALLUM AND THE COURSE OF THE MILITARY WAY AT CAWFIELDS

F.G.S.