

Durham E-Theses

The vallum reconsidered.

Brenda Swinbank

How to cite:

Swinbank, Brenda (1954) *The vallum reconsidered*. Doctoral thesis, Durham University.

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a <https://etheses.durham.ac.uk/id/eprint/6395/> is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

THE VALLUM RECONSIDERED.

BY

BRENDA SWINBANK.

A THESIS
PRESENTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY.

MAY 1954.

VOLUME I: TEXT.

The copyright of this thesis rests with the author.
No quotation from it should be published without
his prior written consent and information derived
from it should be acknowledged.

PREFACE.

The present thesis embodies the results of three years' active research per lineam valli, from 1949 to 1952. The project originated in a dissertation presented for the degree of Bachelor of Arts in 1949 summarising the problem of the Vallum to that date. This served to demonstrate that although theories of varying degrees of probability were constantly being postulated, few of these had been put to the test by the spade. It tabulated a programme of research on this and other aspects of the Vallum, some of which had been neglected since 1922. When the writer was awarded a Research Studentship in order to carry out this programme on the very day on which the Centenary Pilgrimage of Hadrian's Wall 1949 began, circumstances were indeed propitious. The work received a tremendous impetus from the Pilgrimage of 1949 when interest centred partly on the new "service-road hypothesis" of Eric Birley and its implications. It was with this as a working hypothesis that the writer began her research in 1949.

The project has necessitated a considerable amount of excavation which experience proves to be at once arduous and slow yet exciting and exasperating. Before the writer could undertake such work alone, the processes entailed in excavation had to be learned. It is in this respect that the writer owes a deep debt of gratitude to Professor I.A. Richmond, Eric Birley, John P. Gillam and the Corbridge Summer Training School for their excellent tuition and unfailing guidance.

Without this training her research project could not have been undertaken.

The Vallum has been reconsidered in many aspects and much new material has come to light. But this thesis is not intended to be exhaustive, and demonstrates what points have still to be solved. The writer has accepted the existence of the Vallum without attempting to answer the question of why a Vallum exists in Britain and on no other Roman frontier, for this is a problem far too wide for a thesis of the present scope. Nor does the writer discuss the prehistoric background of the Vallum, a subject probably intimately connected with the above problem. Little is known of the character and activities of the great Iron Age tribe of the Pennines, the Brigantes, especially in the Wall area. If the results of Dr. Raistrick's research on the limestone uplands of Craven are characteristic of the rest of Brigantian territory, here is a people more populous than has hitherto been realised, stubborn in their passionate desire to preserve ~~and~~ their independence and cling on to their own traditions and habits of life. Three times within a century did the Brigantes assert their independence, firstly under the patriot Venutius until his defeat in 71 A.D. by Cerialis at Stanwick; again in A.D. 115 when the northern tribes revolted and caused serious havoc among the Romans in the Pennines; finally in A.D. 155 when the Brigantes were able to join with the tribes of south-west Scotland in a simultaneous revolt, such as the

construction of Hadrian's Wall and Vallum had anticipated and was intended to prevent. Further, no attempt has been made by the writer to discuss the economic implications of the Wall frontier. In the light of the amazing discoveries of Colonel Baradez on the Fossatum Africae, where the frontier line marks the boundary between the uncultivated barbarian territory and the cultivated Roman province, it has become desirable to review the purpose not only of Hadrian's Wall but of Roman frontiers generally, which have largely been regarded from the military, political and psychological points of view. The Vallum may then have economic as well as political significance.

With these limitations, the reconsideration of the Vallum is complete. The writer wishes to express her sincerest thanks to the many individuals and bodies who have made this thesis possible: firstly, to the Durham Colleges Research Board, without whose sanction and scholarship her work could not have proceeded; to the Yorkshire Society, for their generous financial assistance enabling her research to continue for a third year; to her parents, without whose constant encouragement and support her years of research would have been impossible; to her typists, Misses J. Pettifer, B.A. and P. Wardle, B.A.; to Robert Sutton for his assistance in the duplication of the illustrations; to Ian Kemp, for his aid on the photographic side; to the landowners and tenants, for their kind permission to excavate and friendly interest; to the Durham University Excavation Committee for sponsoring the

excavations; to Thomas Batey for his excellent skill and work of digging; to Charles Anderson of H.M. Ministry of Works, for his invaluable material assistance; to John P. Gillam M.A. for his constant interest, tuition, and invaluable discussion of the Vallum problems; to Professor I.A. Richmond for his training in the technique of excavation, his helpful criticism and support; above all, to her tutor, Eric Birley M.A., F.S.A., without whose inspiration the writer may never have discovered the fascination of archaeology, and to whose unflinching encouragement and advice this thesis is largely due.

CONTENTS.

PREFACE.

Contents.

FRONTISPIECE....Hadrianic inscription from Horsley.

<u>PART I.</u> Introduction: An Historical Retrospect.	1.
<u>PART II.</u> The Vallum.	
A. The Composition of the Earthwork.	29.
B. <u>Per lineam valli.</u>	34.
C. The Vallum at River Crossings.	117.
<u>PART III.</u> The Vallum and the Wall.	
A.i. The Vallum and the Wall Forts.	124.
ii. Great Chesters.	153.
iii. Carvoran.	172.
iv. The Wall Sequence and its Dating.	188.
B. The Vallum at Milecastles.	
i. In the Turf Wall Sector.	196.
ii. In the Stone Wall Sector: milecastle 30.	202.
iii. Stanley Plantation, milecastle 23.	206.
iv. General note on the Vallum at milecastles.	220.
C. The course of the Vallum and Wall in general.	221.
<u>PART IV.</u> The Purpose of the Vallum.	
A. The Problem of the Purpose of the Vallum.	235.
B. Recent Statements concerning the purpose of the Vallum.	243.
i. Professor Richmond.	
ii. E. Birley and the Service-road Hypothesis.	246.
iii. Mr. John Morris: "The Vallum Again."	266.
<u>PART V.</u> Later History of the Vallum.	

A.	Formation of the Crossings.	270.
B.i.	The Marginal Mound Problem.	276.
ii.	The Military Way.	304.
iii.	The Marcan Occupation of the Wall.	307.
C.	The Disuse of the Vallum at Forts.	
i.	Birdoswald.	312.
ii.	Benwell.	314.
iii.	Housesteads.	330.
iv.	Great Chesters.	331.
v.	General Conclusions.	332.
D.	The Disuse of the Vallum at Milecastles.	
i.	In the Turf Wall Sector.	334.
ii.	In the Stone Wall Sector.	341.
iii.	Secondary Milecastle Causeways.	349.
	<u>PART VI.</u> Conclusions.	352.



frontispiece....

HORSLEY: Britannia Romana.

P A R T I.

INTRODUCTION:

AN HISTORICAL RETROSPECT.

"ergo conversis regio more militibus Britanniam petiit, in qua multa correxit, murumque per octaginta milia passuum primus duxit, qui barbaros Romanosque divideret."

Spartianus:¹ Vita Hadriani, 10-11.

"Britanniam, quod maximum eius imperii decus est, muro per transversam insulam ducto utrimque ad finem Oceani munivit, unde etiam Britannici nomen accepit."

Spartianus: Vita Severi, 18, 2.

"post murum apud vallum missum in Britannia".
ibid. 22.

"per legatos suos plurima bella gessit. nam et Britanos per Lollium Urbicum vicit legatum alio muro caespiticio summotis barbaris ducto ..."

Capitolinus:² Vita Antonini, 5, 4.

"Britanniam, quae ad ea utilis erat, pulsis hostibus muro munivit per transversam insulam ducto utrimque ad finem oceani ..."

Aurelius Victor:³ De Viris Illustribus,
20.

"Severus in Britannia vallum per XXXII P.M. a mari ad mare deduxit."

ibid.: Epitome, 20.

"novissimum bellum in Britannia habuit; utque receptas provincias omni securitati muniret, vallum per XXXII M.P. a mari ad mare deduxit."

(Severus)

Eutropius:⁴ Historiæ Romanae, viii, 19.

"ubi magnis gravibusque proeliis saepe gestis receptam partem insulae a ceteris indomitis gentibus vallo distinguendam putavit. itaque magnam fossam firmissimumque vallum crebris insuper turribus communitum, per centum triginta et duo milia passuum a mari ad mare duxit."

(Severus)

Orosius:⁵ Historia, 17.

"Severus in Britannos bellum transfert, ubi ut receptas provincias ab incursione barbarica faceret securiores vallum per CXXXII P.M. a mari ad mare duxit."

Eusebius-Jerome: Chronicle.⁶

Such are the vague, conflicting testimonies and claims which have caused centuries of argument and confusion in the antiquarian world - have snatched the sleepy ruins of earth-work, wall and dyke from their tangled earthy oblivion - and have created the problem of that misnamed victim of controversy, theory, doctrine - the Vallum. From BEDE to SIR CHRISTOPHER RIDLEY and WILLIAM CAMDEN the three great monuments of Roman civilisation, stretching from sea to sea, remained untouched, unthought of and unscathed. The beginnings of "Merrie England", of national consciousness and pride under the Tudor dynasty, combined with the Renaissance adoration of antiquity to produce "the first and last man ever to hold the high-sounding title of King's Antiquary", JOHN LELAND, who toured England and Wales listing and describing objects of antiquarian interest. The industry and power of acute observation revealed in his words are amazing. But the story of the Roman Wall really begins with WILLIAM CAMDEN, the great Elizabethan antiquary. For the first time since BEDE, an articulate theory is produced, conflating field observations and the testimonies of Latin authors themselves concerning the stone "murus", the earthen "vallum", and the "murus caespiticus."

One authority only, quite unsupported, claims for the Emperor Hadrian the construction of a "murus". The same author and no less than five⁷ others claim that the Emperor Severus

constructed a frontier. Varying lengths, usually quite wrong, are admittedly given. Three native historians must also be considered. GILDAS, a Welsh monk, in c. A.D. 540 wrote "De Excidio et Conquestu Britanniae", a vivid, imaginative lament rather than a history. In explaining this dark and nebulous period he conceives the remarkable though fantastic theory that after the Britons' first appeal to Rome for help, the legion which was sent over ordered the Britons to construct a Wall. Since the Britons did not know how to construct a Wall, they built it of sods rather than stones, so it was useless.

"quos iussit construere inter duo maria trans insulam murum, ut esset arcendis hostibus turba instructus terrori civibusque tutamini; qui vulgo irrationabili absque rectore factus non tam lapidus quam caespitibus non profuit."⁸

Again the Britons begged pathetically for help, and again the Romans sent it. Before they left they built a wall of the usual kind:

"morum non ut alterum, sumptu publico privatoque adiunctis secum miserabilibus indigenis, solito structurae more, tramite mari usque ad mare inter urbes, quae ibidem forte ob metum hostium collocatae fuerant, directo librant; fortia formidoloso populo monita tradunt, exemplaria instituendorum armorum relinquunt."⁹

This must be regarded as a genuine, if rather wild, attempt to interpret the presence of two Walls.

BEDE, living from A.D. 700-50, propounds a theory in his ¹⁰Historia Ecclesiastica based upon the Latin historians, Gildas and personal knowledge of the remains. He obviously quotes

Orosius, but makes a most definite statement that Severus built a "vallum" not a "murus", a frontier which he equated with the earthwork now misnamed the Vallum. Not only does he record interesting and valuable observations on the structures of the frontier area where he himself lived, but proceeds to follow Gildas¹¹ in assigning the construction of the stone "murus" after the second Appeal, dateable to A.D. 416, where Severus had originally built his Vallum; but in the meantime, after the First Appeal in A.D. 414, the resultant Turf Wall was built from two miles west of Abercurnig to terminate near the city of Alcuith. (i.e. Forth-Clyde line)

Finally NENNIUS in his "wild compilation of legend and myth dating from the ninth century"¹², quotes from Eusebius and thus agrees with him that Severus was the author of the Wall; but to avoid entering the existing controversy, he stated that Severus built both a stone wall and a turf one:-

"murum et aggerem, ut receptas provincias ab incursione barbarica facerent tutiores."

He copied Bede in stating that one was built roughly from the Forth to the Clyde.

CAMDEN was the first to discuss these controversial claims of Latin authors and native historians alike. He formed a mural theory which held the field with only slight modifications until the middle of the 19th century. The theory expounded in his "Britannia" was this: three Emperors are

said to have constructed frontiers of some kind; there are three obvious frontiers on the ground - the earthwork thus christened the "vallum"; a stone "murus"; and a turf wall in Scotland. He concluded that Hadrian constructed the earthen Vallum eighty miles long, and reinforced by palisades; Antoninus Pius erected a Turf Wall between Forth and Clyde; Severus built the stone Wall between the Tyne and Solway.

This theory was as comprehensive as it was logical, as its long life illustrates admirably. Camden's descriptions of antiquities in Britain and in particular of the Roman Wall are most interesting,¹³ but his work in this respect was surpassed by later antiquaries. He was unsuccessful in his attempts to identify the sites mentioned in the Notitia Dignitatum. But he was the pioneer of the study of the Roman Wall, its intricacies and complications which have still not been fully unravelled.

Although the Society for the Preservation of National Antiquities, established in 1572 as a result of Leland's and Camden's activities, was abolished by James I as subversive to the interests of the realm, antiquarian interest persisted to some extent throughout the 17th century. In 1610 Camden's "Britannia" was translated from Latin by Philemon Holland, and a new edition was published in 1637. Both translations long remained the standard texts on the archaeology of Britain, though later revised editions were made. Such were Bishop Gibson's edition of Camden's work in 1695, 1722, 1753, 1772. Gibson

travelled along the Wall and for the first time published a detailed description of it. He failed to observe the north mound of the Vallum and consequently could expound a theory that the Vallum was a defence against the north, which was implicit in Camden. His invaluable descriptions, measurements and his constant stimulus to antiquarian interest compel great respect.

The early 18th century witnessed the climax of antiquarian study. A number of new volumes, containing new material, headed by the names of new and great antiquaries immortalised thus to posterity, appeared. Perhaps the greatest of these gentlemen in the field of Roman archaeology was the REVEREND JOHN HORSLEY,¹⁴ a Congregational minister and schoolmaster, from Morpeth.

"His magnificent folio 'Britannia Romana', published in 1732 after his death, is still a great storehouse of information on the Roman antiquities of Britain. His account of the Wall has hardly been surpassed for careful and penetrating observation."¹⁵

He is credited with the correct allocation of the Notitia names to Wall forts, though others might contest this claim. In the 20th century his worth has perhaps been realised more fully than ever before. In 1907 HAVERFIELD said that his book:

"was till quite lately the best and most scholarly account of any Roman province that had been written anywhere in Europe."

Professor BOSANQUET¹⁶ and SIR GEORGE MACDONALD¹⁷ both pay tribute to different aspects of Horsley's character and deserved fame.

In 1921 PROFESSOR R. G. COLLINGWOOD did not hesitate in extolling Horsley's worth:

"To John Horsley still belongs the glory of having written the one exhaustive work on Roman Britain ... for his period Horsley is as indispensable as Gibbon for his ... with him we feel that we have emerged from a tentative and amateurish, a pre-scientific, study of the subject ... into an age of clear thinking, where problems are faced and evidence mustered in a scientific spirit."

Horsley was indeed a first-rate observer and epigraphist. He differed from his contemporaries in that he was a field archaeologist, not merely a traveller. He was the first person to study the fabric of the Wall; he worked out the milecastle system; he discovered the existence of turrets and put thirteen on his map. He is important for his theory of the Roman Wall. It is clear that he agreed with Camden in his general conclusions, and devoted his energies and scholarship to proving them, which Camden had failed to do. His discussion of the mural problem is indeed illuminating.

"I think it can scarce be imagined that this (i.e. a military way) could be wanting; especially if Julius Agricola (who is supposed to have laid most of our military ways) built these forts across the isthmus. Yet I know not of any vestige or appearance of such a way (except from Walwick Chesters to Carvoran and from Cambeck to Stanwicks) unless we suppose the large agger on the north side of Hadrian's ditch to have been it. This is mixed with stones and in many places is much broader than ever Hadrian's Vallum seems to have been. And what I think remarkable and curious though hitherto not observed is the frequent coincidence of this agger with the military way belonging to Severus' Wall. After which coincidence 'tis beautiful and magnificent, and most evidently the military way of Severus' Wall. So that 'tis very certain that this

agger (when convenient and near enough) has been converted into a military way by Severus. How probable this may make it, that it was a military way before I leave others to judge The main objection against its being a military way is that it lies all the way on the north or enemies' side, with respect to Hadrian's vallum and ditch. But if this way was prior to Hadrian's vallum it is less to be wondered at that it should be north of it: especially since it is very much within the fence, or on the south side of the line of stations for whose use and service it may have been originally intended Perhaps Hadrian's Vallum and ditch, at the same time that it joined and strengthened the stations might also have been designed for a place of retreat for the soldiers if they should at any time be attacked on their march. If the vallum of Hadrian had been carried on all the way on the north side of what I take to have been the old military way, it must have been in the main much weaker than it now is. For as the north agger very often runs along the southern skirt of hills, so if the ramparts and ditch had been north of it they must have gone along the very side of the declivity of the hill, leaving the upper part of it on the north. They might rather choose to make the Vallum stronger though this military way be more exposed to the enemy. The Vallum was to be a constant fence to the whole province, the military way was only used on occasions and therefore it was certainly advisable to give the preference to the Vallum with respect to strength and security." 19

So much for the purpose of the Vallum. But he has yet more to say concerning its date.

"Hadrian's Vallum was the second Praetentura and seems rather to have given to all former the names of the stations 'per lineam valli' than the Wall of Severus And as 'tis certain from inscriptions that the Wall in Scotland was built by Antoninus Pius: and it has been shown before, and shall be farther shown immediately that the stone wall here was built by Severus: so this vallum or turf wall (as it is frequently called by country people) must be that which was built by Hadrian. The expression of Capitolinus concerning Antoninus Pius's Wall in Scotland 'alio muro caespitio ducto', implies plainly that one turf wall had been built before: which cannot well be supposed to have been any other than this of Hadrian What belongs to this work is the principal agger or vallum, on the brink of the ditch; the ditch on the north side of

the Vallum; another agger on the south side of the Vallum and about five paces distant from it, which I call the south agger; and a large agger upon the north side of the ditch, called the north agger. This I suppose was the military way to the ancient praetentura of stations; and it must have served for a military way to this work also, or it is plain that there has been none attending it. The south agger I suppose has either been made for an inner defence in case the enemy might beat them from any part of the principal vallum, or to protect the soldiers against a southern attack from the provincial Britons. It is generally somewhat smaller than the principal vallum but in some places it is larger The Third Praetentura was Severus' Stone Wall. We have the express testimony of some ancient writers concerning this emperor's building a wall across our island."²⁰

Though he followed Camden he clearly realised the main flaw in his theory, i.e. the existence of the north mound of the Vallum. Collingwood calls his theory "a triumph of ingenuity." Horsley not only anticipates objections but also answers them, as Bruce²¹ cleverly demonstrates, to serve his own theory.

. "I see no circumstances in the two works of Severus' Wall and Hadrian's vallum, that argue them to be done at the same time or to have any necessary relation one to the other If Hadrian's work is supposed to have been designed for a defence against an attack from the south, difficulties will arise, perhaps not easy to be removed. For sometimes the advantageous ground is left on the south, where it might easily have been otherwise ordered" ²²

It is perhaps surprising that Horsley accepted Camden's theory. His collation of inscriptions contains one mentioning Platorius Nepos,²³ the governor to whom Hadrian entrusted the building of the Wall. It was fractured, with the result that Horsley read it as APIATORIO, a place-name. Excellent epigraphist though he was, the significance of this Hadrianic building inscription,

one of the keys to the mural problem escaped him, giving a new hundred-year lease of life to the Camden theory.

It is clear that Horsley and his contemporaries relied for some information on DR. CHRISTOPHER HUNTER,²⁴ who resided in Durham since 1696. Hunter wrote three letters which were published in Philosophical Transactions in 1702, giving an account of journeys into the Wall country - 'journeys seemingly to search for inscriptions rather than to glean information concerning sites. As well as identifying Chesterholm with the Vindolanda of the Notitia by the correct method, i.e. the interpretation of inscriptions, he refers to the Wall as "Hadrian's Wall". One wonders whether he realised the significance of his words. At all events, he was an indefatigable and indispensable student of antiquity, who lent many a helping hand to other students, though he wrote little himself.

In 1726 the "Itinerarium Septentrionale" of ALEXANDER GORDON was published. He claimed to have established the fact that the "per lineam valli" section of the Notitia began on the east coast. Horsley protagonists claimed this equally strongly for him and insist that Gordon used Horsley's material quite without acknowledgment. Horsley's book is indeed superior, but Gordon's account and comments on the Wall are none the less interesting. He noticed that only three inscriptions found near the Wall bore the names of either Hadrian or Severus:

"Nor indeed do any prove directly that either of these Emperors made the Walls, but at the same time, I own, is a strong presumption, seeing the inscriptions were found not far from these Walls."

Nevertheless Gordon supports Camden's theory against its critics.

"There are some others who have come into a notion that the vestiges of the ditches and ramparts which run parallel to and south of Severus' Stone Wall, is not the track of the Wall made by Hadrian but by a "vallum interius" or inward work belonging to Severus' Wall, nor do we say they understand why a rampart should be put as a defence to the north of the ditch; and wonder that ever it should be made on the declivity of a hill, and upon low ground, seeing it was in the power of northern enemies by possessing themselves of the high parts, to drive the Romans from their Intrenchments by annoying them from above, with throwing down stones upon them. As for the first part of the objection, of an agger or rampart to the north of the Fossa, Graham's Dike in Scotland has had the same It is likewise certain that the more ramparts placed on either side of the ditch, made the work the stronger

As to the other objection of being built on the low ground, I am afraid that those who argue thus have never seen the rocky hills above this low ground on which the Vallum is placed, which nature has made altogether inaccessible Likewise those who have imagined it a 'vallum interius' to Severus', I would gladly ask them what occasion had Severus of making a 'vallum interius' since he had sufficiently fortified his 'praetentura' with a large ditch, Stone Wall and a small rampart."²⁵

1753 saw the publication of a description of the Wall by JOHN WARBURTON, the "cunning scoundrel" - "Vallum Romanum" which is known to be a plagiarised version of Horsley's description. A number of his chapters are copied verbally from Horsley, and in his introduction he generally sullies the latter's high reputation. Collingwood writes:²⁶

".... a surveyor who enjoys an immortality like that of the person who burnt down the temple at Ephesus: for he

was the man by whose advice the Wall was destroyed in order to build General Wade's Military Road along its foundations."

Perhaps the finest example of a romantic British archaeologist was WILLIAM STUKELEY²⁷, the outstanding product of the wave of romanticism following the classical revival of the Renaissance. His first love was always the hazy, nebulous period of barbarian gloom, with the Druids, their mystic rites, and local British antiquities attributed to them. But he did not neglect the Roman past. He could not fail to be moved by the wild sweep of barren landscape along which the Wall passes. His "Itinerarium Curiosum" published posthumously in 1776 contains the memoranda of a journey made, in the company of ROGER GALE in 1725, over western and northern England. The impact of this imaginative yet original mind on the mural problem could not but have an unusual result. He accepts in part Camden's mural theory, but noticed its inadequacies which inevitably led him to modify the theory to some extent.

"I suppose this wall, built by Severus, is generally set up in the same track as Hadrian's Wall or vallum of earth was: for no doubt they chose the most proper ground: but there is a vallum and ditch all the way accompanying the Wall and on the south side of it: and likewise studiously choosing the southern declivity of rising ground. I observe too the vallum is always to the north. It is surprising that people should fancy this to be Hadrian's vallum - it might possibly be Hadrian's work but must be called the line of contravallation: for in my judgment, the true intent both of Hadrian's Vallum and Severus' Wall was in effect to make a camp extending across the kingdom: consequently was fortified both ways, north and south; at present the Wall was the north side of it: that called Hadrian's work, the south side of it: hence we may well suppose all the ground of this long camp, comprehended between

wall and southern rampart, was the property of the soldiery that guarded the Wall."²⁸

Collingwood points out that Stukeley's inference that the Vallum was a defence against the south formed a "cardinal feature in the Hadrianic theory". But was his whole theory quite so fantastic as Collingwood supposed? Does not Stukeley suggest that Hadrian's vallum lay beneath Severus' Wall? In his theory not only the seeds of the Hadrianic theory of the 19th century were sown, but also those of the most recent hypothesis - that the Vallum marked off the civil from the Military Zone. This was the "great camp". Stukeley then is noteworthy. He was already half-way towards the Hodgson Hadrianic theory, and demonstrated as effectively as Horsley that Camden's theory was inadequate and had reached breaking-point.

Despite the original thought which Stukeley brought to bear on the mural problem, the Camden-Horsley theory persisted as the accepted theory. Gibson's last two editions of Camden incorporated Horsley's conclusions whilst in 1789 and 1806 further editions of Camden appeared, edited by RICHARD GOUGH, who also inserted Horsley's ideas. JOHN BRAND in 1789 devoted a section of his "History of Newcastle" to an excellent description of the Wall. In 1801 a "History of the Roman Wall" was published by WILLIAM HUTTON, that grand old man, "lovable and indeed worthy of all veneration for the enthusiasm which led him at the age of 78 to walk 601 miles in 34 consecutive days for the sake of seeing the Wall from end to end; ridiculous in his wildly amateurish archaeology and the sententiously philosophical reflections on life with which his notes of travel are garnished;"²⁹

proud in his conviction that he was "perhaps the first man that ever travelled the whole length of this Wall and probably the last that will ever attempt it:"³⁰ though sad at the rampant wilful destruction to which this great monument had become subject. Using the usual guides, and finding them all from Camden to Warburton inadequate in their descriptions, criticising them "in that they have not distinguished the works of Agricola from those of Hadrian, but have confused both under the name of the latter:" he proceeds to write one of his own, elaborating his own theory based ultimately on Camden and Horsley. He summarises it thus, illustrating his description by diagrams:³¹

"Thus Agricola formed a small ditch, then a bank and a ditch, both large and then finished with a small bank Hadrian joined to this small bank a large ditch, then a plain large mound, and then finished with a small ditch Severus followed nearly the same line with a wall, a variety of stations, castles, turrets, a large ditch and many roads - by much the most laborious task."

Adding little but confusion to the problem, irritating in his senile and therefore perhaps excusable self-infallibility, nevertheless he endears himself to all by his humour, and genuine enthusiasm for the Wall.

"How much delight would it afford the modern antiquarian eye, could he survey the works of Agricola, Hadrian and Severus as they then appeared! The noblest sight ever beheld in this island! One sight would raise the mind to rapturous sublimity. Man would be lost in wonder"³²

The 18th century, the golden age of antiquarianism, which saw the publication of excellent guides to antiquities whether British or Roman; which witnessed the establishment of the Society of Antiquaries of London in 1718, of Scotland in 1780; the publica-

tion of Philosophical Transactions of the Royal Society, of the Gentleman's Magazine in 1731; the century which embodies the change-over from the "Merrie England" of the Tudors to the stately elegance of Georgian England, closed on a calm, confident yet not unenthusiastic note. The comparative silence of the latter half of the century signified the exhaustiveness of Horsley work. New methods were needed if further progress was to be made.

19th CENTURY.

Antiquarianism had exhausted its resources, but not before it had laid firm foundations from which archaeology could proceed. But other trends were gradually making archaeology, as we know it today, possible. Already in the early 19th century the rush of collectors and thieves to Greece, Egypt and Italy had begun. The first precedents for the collection of curios had been established as early as the 17th century. The Industrial Revolution not only created new moneyed men desirous of turning collector, but also made geology and in consequence the existence of prehistory possible. With the publication of Darwin's Origin of Species the death-knell of diluvianism was sounded, and prehistory was established beyond doubt. The new scientific attitude to affairs in general made a new approach to archaeology essential and indeed inevitable.

But the tradition of the great antiquarians could not be cast in a day. Antiquarianism persists to this day, and no one would dream of dispensing with it, even if that were possible. But since the turn of the century, it has taken a subordinate

place to scientific archaeology. The growing pains of this child of antiquarianism were experienced in the 19th century - the century of experiment, innovation and enthusiasm. It is then to the second half of the 19th century, when the antiquarians-with-a-difference began to excavate, that attention must now be turned.

The new era was heralded by a complete refutation of the Camden-Horsley doctrine concerning the Roman Wall. The same Latin authorities were still discussed - but emphatic epigraphic evidence had slowly been accumulating. The REVEREND JOHN HODGSON, "a local and clerical antiquary", had by 1840 published in a volume of the "History of Northumberland" a new Hadrianic theory of the Roman Wall - one which had been foreshadowed by Stukeley. He describes the course of the Wall and its concomitant works; discusses clearly and logically all literary statements; and finally, after considering all epigraphic evidence discovered in the Wall region, puts forward his convinced and convincing theory concerning the relationship of Wall and Vallum. He deals most adequately with Spartianus' attribution of Walls to both Hadrian and Severus. He argues that he was wrong in assigning to Severus the glory of the title of Britannicus from his building of a 'muris' in Britain. Spartianus elsewhere admits: "that there was a barrier which consisted of a 'muris ad vallum' when Severus returns from Caledonia: and to suppose that any detachment the emperor could spare from his army could in the space of 3 years have perfected such a barrier as the muris is difficult to believe."³³

But the most conclusive proof of his arguments was the text of a legionary tablet found on the Wall at Milking Gap, containing the name of Aulus Platorius Nepos, governor in the time of

Hadrian. He says:

"Of all the inscriptions discovered in Britain, this I think is of the greatest historical importance inasmuch as it proves that the Bradley milecastle was built in the time of the Emperor Hadrian and leads us to the true reading of three other fragments - one which Horsley and Gordon had seen, another from Chesterholm, another in the south wall of Bradley farmhouse."

His final cautious, yet convincing, statement on the con-

temporaneity of the two works runs thus:

"I have gradually and slowly come to the conviction that the whole barrier between the Tyne at Segedunum and the Solway at Bowness, and consisting of the Vallum and the murus with all the castella and towers of the latter, and many of the stations on their line were planned and executed by Hadrian: and I have endeavoured to show that in this whole there is a unity of design and a fitness for the general purposes for which it was intended, which I think could not have been accomplished if part of the Vallum had been done by Agricola, the rest of it by Hadrian and the murus with its castella, towers and military way to Severus." ³⁴

The Vallum was to protect the military way from station to station, from the area to the south of the Wall.

From this time forward, that the Stone Wall was Hadrian's was beyond dispute: but not all would agree that the Vallum was also one of Hadrian's works, to be regarded as a southern defence.

Hodgson's contemporaries were immediately convinced. By this time, new names appear in the annals of the Society of Antiquaries of Newcastle which, formed in the early 19th century, was already publishing a volume called "Archaeologia Aeliana". ³⁵

JOHN CLAYTON, ANTHONY HEDLEY, GLASFORD POTTER, JOHN BELL, HODGSON HINDE - this able and energetic group of local antiquaries eagerly took up the new theory. Excavations commenced on the Wall when in 1849 the first milecastle was uncovered. JOHN CLAYTON, the owner of Chesters fort on the Wall:

"devoted his wealth and scholarship to the study of the Wall which indeed he collected by systematically buying up the land on which it stood."

He uncovered lengths of Wall;³⁶ located and revealed the first turrets; excavated certain milecastles; uncovered large portions of forts such as Chesters and Housesteads, carried out miscellaneous digging as at Carrawburgh; GLASFORD POTTER excavated at Birdoswald. ANTHONY HEDLEY³⁷ bought Chesterholm and excavated it, but met an untimely death as a result of a chill caught when digging; all results perished with him.

Perhaps the greatest impetus to the study of the Wall, the propagation of interest in it, and the popularisation of Hodgson's views, was JOHN COLLINGWOOD BRUCE's decision to lead a pilgrimage "per lineam valli" in 1849.³⁸ It was a social gossiping affair like Chaucer's, performed with such delight and enthusiasm that Bruce published a "Wallet-Book" to the Roman Wall in 1851. That this guide was as excellent as it was admirable is proved by the rapid succession of the 2nd and 3rd editions published in 1853, and 1867 respectively. Its name was changed to that of "Handbook to the Roman Wall" in 1863, since when no less than 10 editions have testified to the

quality and enduring interest of Dr. Bruce's great work. In it Hodgson's views are expounded and supported by Bruce's wealth of knowledge.

"In all probability the whole series of fortifications were the work of one period, and were reared at the command of Hadrian .³⁹.

If we adopt the theory that the Wall and Vallum exhibit unity of design, a question of some importance arises - with what view was the Vallum constructed? The true answer seems to have been hit upon even by Horsley's time ... Whilst the Wall undertook the harder duty of warding off the professedly hostile tribes of Caledonia the Vallum was intended as a protection against sudden attack from the south."⁴⁰

That the Stone Wall was Hadrian's was beyond reasonable doubt. That the Vallum was also Hadrian's work for defence against the south to Bruce was equally evident. The leader not only of pilgrimages, but also of the study of the Wall till his death in 1892, whatever his faults or lack of originality, he is immortalised as an epigraphist, as a field archaeologist, and as the author of a book which has for long been the envy of students in any province of the Roman Empire.

Bruce's arduous task was considerably simplified by the production in 1858 of the first accurate survey of the Roman Wall by HENRY MACLAUGHLAN, at the instigation and expense of the third Duke of Northumberland. His excellent maps, the basis of all later maps of the area, were accompanied by a slim volume entitled a "Memoir", which contains a detailed account of the Wall area and attests to MacLauchlan's first-rate power of observation. Though it was not his intention to theorise,

he threw out a number of interesting points concerning the Vallum. He followed Horsley's theory of the Wall and Vallum, perhaps because the Hodgson theory had not been sufficiently popularised by that time. He felt confident that the Vallum was laid out as a way of communication between stations, since its whole course was an obvious road-line. He also noticed that in places the Wall seemed to turn to avoid the Vallum, suggesting forcibly that the latter was there first!

In 1885 the force and weight of the learning and reputation of the great German historian, MOMMSEN, was thrown in support of the Hadrianic theory of the Wall. Collingwood⁴¹ observes that he never hints at any inadequacy of the Vallum to act as a southward defence, and also makes one or two striking mis-statements concerning the Roman frontiers in Britain.

Meanwhile, throughout the latter half of the 19th century, archaeology was carried forward, far and wide on a great wave of interest and enthusiasm. In 1843 the British Archaeological Association was formed, the object being:

"to unite and concentrate the whole antiquarian force of the kingdom, and thus increase its efficiency and consequent utility."

Kilkenny, Wiltshire, and Wales formed their own societies. Not the least to follow the lead shown by the Newcastle Society earlier in the century were the Cumberland and Westmorland Antiquaries, who formed a society of their own in 1866, with their own enthusiastic students of the Wall, and supporters of Bruce's

doctrines. In 1887⁴² and 1888 CHANCELLOR FERGUSSON of this Society, in letters to Dr. Bruce, writes down his thoughts on the subject of the Vallum, and emphatically denounces the criticisms and proposals of Professor Hughes, F.S.A., at the Cambridge Antiquarian Society.⁴³ His views on the purpose of the Vallum might profitably be stated at this stage.

"The idea then occurs to me that the great military engineers who laid out Hadrian's Great Barrier made up their minds from the first that their valuable troops should not be harassed in this way: accordingly they planned the Great Barrier with an embattled Stone Wall as a defence to the north against the attacks of hordes of barbarians that might be called armies, with a palisaded earthen Vallum to the south against the attacks of guerillas, banditti, and dacoits that infested the 'scrub' in their rear"

Though they did not know it, the twilight of the south-defence theory of the Vallum was at hand. Its protagonists had for half a century denounced the constant persistent criticisms levelled at their theory. Once such criticisms received a comprehensive articulation, the southern-defence theory was doomed. In the meantime excavations proceeded unabashed - Mucklebank turret, and Great Chesters fort were investigated by J. P. GIBSON, whilst other important figures appeared on the scene, THOMAS HODGKIN, SHERITON HOLMES, CADWALLER BATES - excavations undertaken not to discover answers to particular problems but to uncover and learn more about the Wall and its stations.

In 1891 at last the challenge came. With lawyer-like precision, logic and reasoning, DR. GEORGE NEILSON, in his "Per

lineam Valli", refutes point by point the rather vague, general statements of Hodgson and Bruce concerning the Vallum as a defence against the south. He is in perfect accord with them concerning the Hadrianic date of the two works, but effectively takes the ground from beneath their feet with regard to the Vallum. He states the problem with clarity:

"There is neither anomaly nor mystery about the Stone structure - a plain, blunt wall and ditch unequivocally against the north. The problem unsolved is the full meaning of the Vallum."⁴⁴

Not only the composition of the Vallum itself but also a thorough field survey of its course compel him to disagree with the southern-defence theory. The existence of the marginal mound was, he thought, the insuperable obstacle of the southern defence protagonists. Not content with merely refuting a theory, he goes further to produce quite a remarkable theory, quite unacceptable to modern students of the subject, though his observations of fact concerning the nature of the earthwork are indeed valuable. He noticed that the marginal mound was not continuous. He is led also to the conclusion that:

"where the south side of the ditch was by natural slope appreciably higher than the north side, no marginal mound was made."

His inference is that:

"the purpose of the marginal mound was obviously to raise the south side of the fosse to something like equality of level with, or superiority over the north side."

His final conclusion is a striking climax to his argument:

"the so-called vallum is composite; it is not one vallum but two, facing opposite ways with the fosse common to both. It has two berms and the berms imply two purposes."⁴⁵

The south mound with the fosse in front was erected first, and furnished with a row of sharp stakes - "a set of very ugly and truly formidable teeth." It was erected to guard the frontier whilst the Wall was being built.⁴⁶ Once the Wall was constructed, the use of the Vallum was finished, and so was converted by means of a north mound into a protection against the south, as being preferable to a complete demolition of the work. Just as Horsley, by splitting the Vallum into parts, had succeeded in exploding the Camden theory, so Neilson by precisely the same purpose broke the Hadrianic Hodgson theory. Neilson has for long been underestimated. His field-survey and inspection are of considerable value; his keen mind detected the flaws in the current theory and effectively demolished it; his originality led him to an ingenious theory, one perhaps as acceptable as Hodgson's, had it not been so complicated, in those pre-excavation days of the Vallum's history. Most important of all, his challenge crystallised the immediate mural problem into a coherent question:-
Was the Vallum a unity, and was it contemporaneous with the Wall?

The challenge was quickly taken up. In 1894 the "first committee appointed to make excavations per lineam valli" by the Newcastle Society, began work on the Vallum in Northumberland, with the avowed aim of the "determination of the character and

composition of the 'vallum' which so mysteriously accompanies the Roman 'murus'." ⁴⁷ The 20th century had virtually begun! It was the dawn of the scientific excavation of the Wall.

20th CENTURY.

In 1894 too PROFESSOR HAVERFIELD ⁴⁸ began work with the Cumberland and Westmorland Excavation Committee in Cumberland, to discover whether Hodgson and Bruce were right in stating that the Wall and Vallum were contemporaneous. He was valiantly and invaluablely assisted by MR. & MRS. THOMAS HODGSON of the same society. Their sections cut across the Vallum at Brunstock, White Moss, Bleatarn, Gilsland Vicarage, confirmed the Newcastle Society's sections near Heddon and Down Hill - the Vallum ditch and mounds were contemporary with one another. Neilson's house of cards collapsed. Hodgson and Bruce had been proved correct in part.

The next problem was to find the relationship between the Vallum and the Wall forts. Work continued season by season, and already in 1896 Haverfield had reached the conclusion that Hodgson and Bruce were wrong concerning the purpose of the Vallum. He himself thought the earthwork was definitely unmilitary, and must have had some legal purpose or other as Mommsen had suggested. In 1898 when summarising the Five Years' Excavation on the Roman Wall, he re-echoed his conviction:

"that it is a ditch between mounds, made by the Roman for some purpose, legal or other which was not directly connected with fighting or fortification."

His valuable work continued until 1903, tracing the course of the Vallum where little or no indication was given on the present surface in the neighbourhood of forts as well as 'per lineam valli'. But the amazing discovery of a New Turf Wall at High House, of the ditch of some Wall or other passing beneath Birdoswald and Chesters forts, altered the whole complexion of the mural problem. In 1900 he pointed out that the old controversy concerning the relative date of the Wall and Vallum had been settled or:-

"shown with some approach to conclusiveness that the Wall and Vallum were coeval."

To him the problem of the purpose and date of the Vallum - that "inscrutable" earthwork over which all Wall theorists had stumbled - was settled. The controversy now centred on the Wall and the new Turf Wall, which once more raised the conflicting testimonies of ancient writers from their dusty bookshelves. It was beginning to look as though Stukeley was right in suggesting that Severus' Stone Wall followed the course of Hadrian's earlier Wall (now determined to be a Turf one) and that the Vallum was contemporaneous with Hadrian's Turf Wall.

Haverfield cautiously guarded his opinions but finally in 1909 he stated that an earlier Turf Wall must have stretched from sea to sea, and was replaced by a Stone Wall, later, perhaps under Severus. By the irony of fate in that very year, excavations undertaken by J. P. Gibson and a newcomer to the archaeological field, F. G. SIMPSON, at milecastle 48 at Poltross

⁴⁹ Burn, completely shook the Hadrianic Turf Wall theory. A Hadrianic floor-level overlay the foundations of the Wall, thus scientifically establishing the henceforth indisputable fact that the Stone Wall was Hadrianic. That Haverfield's final conclusions were wrong is no demerit. His great work placed the study of Roman Britain generally on firm foundations. To the study of the Wall alone his value was immense. He was the pioneer of scientific excavation, who directed the energies of Wall students into the proper channels.

A new phase of Wall investigation commenced. Haverfield's legal theory of the purpose of the Vallum was tacitly accepted, and the earthwork subsided quietly into the background whilst evidence accumulated for the contemporaneity of the Stone Wall, milecastles and turrets. Current misconceptions concerning the forts and their supposed "enlargements", combined with a new field survey of the Vallum quietly and unobtrusively undertaken between 1910 and 1920, to produce a new theory of the "Purpose and date of the Vallum and its Crossings" by Mr. Simpson and MR. SHAW - a virtual refutation of the contemporaneity of the Stone Wall and Vallum.⁵⁰ The novelty and unexpectedness of the results of the field survey completely overwhelmed the 1920 pilgrims. R. G. COLLINGWOOD, the celebrated Oxford philosopher and historian, gave enthusiastic support⁵¹ to the new theory which was published in 1922. Although officially countenanced by the leading Wall archaeologists, it

was never generally accepted.⁵² But the paper was the first since Neilson's to demonstrate what had still to be learnt concerning the Vallum. The existence of new characteristics, viz. the "crossings", were noted, a knowledge of which is indispensable to any student of the history of the earthwork. Before 1922 only the problems of the purpose, composition and dating of the construction of the Vallum had been deemed to exist. By 1922 it had become clear that the Vallum no less than the Wall possessed a history of its own. The paper demonstrated perhaps more effectively than Neilson's the fallacies of the southern defence contention, but fails, as Neilson had failed, to construct a new explanation of the Vallum's purpose.

It is impossible to trace the development of the mural problem from 1920 to 1950 at this stage. Tremendous steps forward have been made; the problems needing to be answered became gradually more clearly defined; many problems needed to be asked and answered; 30 years of intensive study, of manual labour, had to be spent before, to quote Collingwood's words of 1921, "a complete solution seems to have come within the range of possibility."⁵³ Series after series of reports of excavations⁵⁴ undertaken by F. G. Simpson, by I. A. RICHMOND (since 1928), and by E. B. BIRLEY (since 1929) - the triumvirate of the frontier zone - of annual resumés of the important discoveries;⁵⁵ spasmodic summaries of the development of knowledge,⁵⁶ must all be taken into account. A consideration of them all has led to the most

recent, authoritative, scholarly interpretation of the meaning of the Roman Wall and its components in Dr. I. A. Richmond's 10th Edition of Collingwood Bruce's Handbook to the Roman Wall. Concerning the Vallum in particular it ought to be emphasised that theories have continued to be evolved, but the brevity of their lives is significant: they are brief because the rapid strides of scientific excavation compel them to be more in the nature of working hypotheses than theories. Nor can it yet be claimed that any particular theory is conclusively correct. Haverfield's legal theory has stood the test of time. Whether the purpose of the Vallum is ever solved, there is still a tremendous amount to be learned concerning its character and its history. Until 1951 the excellent field survey made by Mr. Simpson was believed to be exhaustive. Valuable results have been achieved from 1949-52 by surface inspection and excavation, pertaining to the relative date of the construction of the earthwork; to its behaviour at forts, and milecastles, and to its later history. The problem which has puzzled generations of archaeologists could never be completely solved in three years' intensive study, if in a lifetime. The writer can only hope to have solved one or two of the many questions this enigmatic earthwork presents; perhaps more important, to have demonstrated that the subject, far from being exhausted, rewards any attention devoted to it; and most important of all, to illustrate the lines on which further research ought to be undertaken.

PART II.

THE VALLUM.

A. The Composition of the Vallum.

The first excavation undertaken on the Vallum in 1894¹ near Heddon-on-the-Wall and on Down Hill established the fact that the north and south mounds of the Vallum were composed of material dug from the ditch. All sections cut across the Vallum since that time have confirmed this fundamental fact that the ditch and mounds of the Vallum were contemporaneous. From 1894 to 1903 Professor Haverfield and Mr. and Mrs. Hodgson² conducted excavations which proved remarkably instructive on three main aspects of the Vallum. Firstly, they determined more closely its composition and size; secondly, they discovered the course of the earthwork in certain sectors in Cumberland mainly, where it is no longer visible;³ thirdly, they demonstrated the peculiar⁴ behaviour of the Vallum at certain forts. Detailed drawings and notes were made of sections at Brunstock, White Moss, Bleatarn, Gilsland Vicarage and Appletree, which are still extraordinarily valuable since no complete sections across the Vallum have been published since that time. The White Moss, Bleatarn, Appletree and Gilsland sections are reproduced below, and are accompanied by notes of reinterpretation.⁵ Comparative measurements of the Vallum in Northumberland and Cumberland were taken and are still of interest. The total north/south measurement of the Vallum, and therefore

those of its component parts, proved to be surprisingly variable.

By 1922⁶ the essential characteristics of the Vallum had been determined. It was of symmetrical design, a flat-bottomed ditch, shallow in relation to its width and flanked by two main mounds. Further, a two-fold principle seemed to have been observed during the construction of the Vallum: "firstly, the preservation of the ditch from obliteration through subsidence, and, secondly, the preservation of the mounds from side-slip."⁷ The points at which the design of the Vallum was abnormal seemed explicable in the light of these principles, e.g. the four-mound section at White Moss; at Gilsland Vicarage where the ditch is considerably reduced in size; at Poltross Burn where the ditch slopes were supported by retaining walls. The existence of "kerbing" supporting the Vallum mounds had been noted at White Moss, Brunstock, Harehill, Cawfields, near the Peel, a quarter of a mile east of Carrawburgh, and at Halton. Valuable knowledge had thus been gained not only of the composition of the Vallum but also of its engineering in difficult subsoil. The crossings system had been noticed and cognisance had been taken of the third or "marginal mound", a later structural feature, present intermittently along the south lip of the Vallum ditch, though occasionally on the north berm.

In 1939 the sections⁸ cut across the Vallum at Cawfields and Cockmount Hill had much light to throw on the composition and treatment of the Vallum. Two completely different profiles were exhibited:-

"At Cawfields it was found that the sides of the ditch had been cut back almost vertically in the bad sandy ground and were then retained by turf-work capped with clayey sand and resting upon a solid base of stone, four courses high. This condition extends from the farm-track leading to milecastle 42 as far as the macadam road to Cawfields quarry. Farther east half-way up the hill to Shield-on-the-Wall the ditch proved to be 34 feet wide at the top, 4 feet wide across a flat bottom and $10\frac{1}{2}$ feet deep. The sides stand at an angle of 35 degrees At Cockmount Hill there is a complete contrast with conditions at Cawfields the ditch was originally 20 feet wide at the top, 10 feet deep and 8 feet wide across the flat bottom, with sides standing at 60 degrees. It thus closely conforms to the conditions already noted at permanent causeways at Benwell and Birdoswald The steep sides of the Vallum ditch in its original condition may now be taken to have continued throughout the course of the travelling work. They were not however normally revetted and were therefore liable to rapid collapse."

The Cawfields sections were assumed to represent a recutting of the Vallum ditch later in the second century. The Cockmount Hill section is now taken as the normal standard section of the Vallum as originally constructed.

The structural features of the Vallum may be summarised thus:-

Firstly, the original Vallum.⁹ This consisted of a ditch, 20 feet wide at the top, 10 feet deep, with a flat bottom

8 feet wide. Set back on either side of the ditch at approximately 30 feet was a continuous mound, normally 20 feet wide at the base. The mounds were sometimes revetted in turf, and in one instance, in stone.¹⁰ The total width of the earthwork was approximately 120 feet. The only known original interruptions of the ditch were the causeways¹¹ provided for access to forts and milecastles, those of the latter being usually visible.

Secondly, the "crossings"¹². Nowhere does the original condition of the Vallum still remain, for the mounds were pierced by gaps at regular intervals of approximately 45 yards. In some cases the material thus obtained was thrown into the ditch between the corresponding north and south mound gaps. Such fillings are termed "crossings". Gaps can be detected throughout the whole course of the visible earthwork.

Thirdly, the marginal mound,¹³ spasmodically present and usually smaller than the north and south mounds.

Fourthly, the recut ditch.¹⁴ Mr. Simpson drew attention to the large dimensions of the ditch in certain sectors, notably at Cawfields, which seemed to exist only where the marginal mound was present. Where the ditch was of larger dimensions and of such a profile, it was termed "recut"

Mr. Simpson noted that the Military Way¹⁵ ascends and travels along the north mound and berm in places. This feature is distinguishable on the ground by the unusually large size of the north mound.

The writer walked the Vallum from end to end with the aim of recording an accurate and thorough description of the earthwork. All the above characteristics were noted whenever they occurred, and any other features requiring special comment. The following chapter is the result of this journey and consists of a great amassment of information and observations, complicated in the extreme, but nevertheless of tremendous value in unravelling the structural sequence of the Vallum.

B. "PER LINEAM VALLI."

Horsley's statement that "there is not, in all the space between Cousins House and Newcastle the least vestige or appearance of Hadrian's Vallum or anything belonging to it" has been confirmed by more recent research. Excavations in 1929² showed that the Vallum did not continue further east than Elswick Row, but may rather have turned southwards towards the river. Westward of Elswick Row few signs of the Vallum can be detected until beyond Benwell fort. Yet occasional rises and depressions in the streets and garden walls, odd cracks in the older houses provide the necessary clues which enable a confident statement to be made that the Vallum runs closely behind the Wall in a straight course as the Ordnance Survey 25³" suggests.

XCIV. 16.

In a back street behind Elswick Row, No.59 is pulling away from the house to the north as if it is situated on ground which has subsided. In Campbell Street between Nos.34-26 the contour of the mounds and ditch, crossing diagonally, is exhibited in the garden walls. In the older cobbled Cromwell Street, both the Wall and Vallum ditches are plain, the former commencing roughly at No.120 and the Vallum between Nos. 104 and 74. The houses follow the undulation. In Gloucester Road and Normanton Terrace there is no visible

XCIV. 11.

sign, though the line of the Vallum would be below the Methodist Chapel which is too new to show signs of subsidence. In Kingsley Terrace where a tilted chimney pot seems to show the line of the Wall ditch there is no vestige of the Vallum. In Hartington Street No. 33 and in Mill Lane No.4 both seem to be breaking away from the neighbouring house and are on the supposed line of the Vallum. In Lynwood Terrace and Bentinck Road there is no trace, but the junction of Lynwood Avenue and Dunholme Road may be on the south edge of the Vallum. In the garden wall of Highfield House in Grainger Park Road a depression seems to correspond with another in the coursing of a high wall to the south of the Vicarage opposite where an extra course seems to have been inserted. Nos. 7 and 14 Keldane Gardens lie on the approximate line but there is no trace of the Vallum nor in Normount Gardens. A faint depression is discernible in front of No.27 Benwell Grove. In Ladykirk Road the garden walls of Nos. 210 on one side and 211-13 on the other seem to follow the contour of the Vallum, and in Hampstead Road those of Nos. 210 and 207. Nos. 209-7 in Ellesmere Road show faint traces and in front of Nos. 212-210 Farndale Road is a slight dip in the pathway. The contour of the road is the only clue in ~~Strathmore~~ ~~Ellesmere~~ Crescent, Canning Street and Colston Street (at Nos. 212,211).

In Condercum Road the garden wall between Nos. 282-280 may be over the ditch. Following the Ordnance Survey 25" the houses of Springhill Gardens are on the north side of the Vallum, but at this point, the Vallum was proved, before the estate was built, to commence its diversion round Benwell fort. The houses here are too new to show any subsidence but in Broombridge Avenue, a hump just south of the temple to Antenociticus seems to represent the north mound. The garden walls of No. 40 on the left and No.35 on the right show a distinct depression representing the Vallum ditch. Here the Vallum slopes down considerably from north to south. At the foot of Denhill Park Avenue is a unique sight - the original stone revetted causeway across the Vallum ditch south of Benwell fort exposed and preserved by Her Majesty's Ministry of Works. Leaving the causeway, as we descend Benwell Hill there is no sign of the Vallum in Adair Avenue, Pease Avenue, Fox and Hounds Lane, Westacres Crescent, in the ground of St.Cuthbert's School, in ~~Cuechna~~^{Grefna} Road, Coldstream Road, Benwell Hill Cricket Ground, nor in the gardens of Countess Drive, but the 25" may be taken as correct. In Brignall Gardens, Thorntree and Baroness Drives slight rises in the road seem to represent the Vallum and at Denton Road the Ordnance Survey 25" proves to be quite right, for the earthwork

is discernible across the disused tip at Denton Burn. Ascending the western bank of the tip the ditch is full of nettles and disappears beneath modern houses built to the south of Stone Row. The latter may be on the north mound of the Vallum. West Vallum Street seems to run along the Vallum and in Wharmlands Road six centurial stones of the Vallum were found in 1936.⁴ (The Vallum mounds were kerbed in turf.) Beyond Copperas Lane the north mound is visible in a rough patch of land, and then Nos. 24 and 22 Centurion Road are on the line of the Vallum. Beyond Hill Side Avenue is a clear view into the Tyne Valley showing a considerable falling away of the ground to the south. The Wall and the Vallum were clearly well placed on the crest of a slope with a good view both to north and south.

In a rough field, where preparations were already in progress for a new housing estate,⁵ the Vallum appears for the first time in excellent preservation. Hawthorn trees and nettles filled the ditch and the mounds were clearly distinct. For the first time crossings appeared, three in succession, with clearly defined gaps and ditch fillings. They were approximately 58 yards apart. No marginal mound was present and the berms were rather indistinct. Crossing a fence the Vallum becomes less

well preserved but its line descends into a hollow, filled with may blossom in the spring, south of milecastle 8 which is easily discerned at the modern

XCIV. 6. gateway. The Vallum ditch is cut through layers of rock as it descends to Sugley Burn where it is 200 yards south of the Wall. The south mound exists to the foot of the slope though the north mound has disappeared. The Vallum seems to ascend the western bank of the burn diagonally as if taking the most gradual slope possible. In the meadow to the south of Denton Hall both ditch and mounds are distinct and five crossings are distinguishable before the modern road is reached: the first with gaps and ditch filling intact; the others clear in the south mound only since the north mound has now disappeared beneath gardens of the Hall. The Vallum re-emerges in a pasture on the other side of the road in quite a good state of preservation sloping from south to north and approaching the Wall more closely. Two crossings are visible. In the next field the Vallum is partially under plough but still quite distinct with 3 crossing positions marked by depressions in the south mound. As we approach the fence the north mound becomes fine and in the next pasture the ditch and north mound are particularly good. A large depression ~~in the north~~

in the north mound seems to have no corresponding one
Xciv. 5. in the south. In the next field the Vallum is virtually invisible but on the sky-line a definite dip in the fence shows its position. Over the crest of the hill, south of Chapel Hill, the Vallum continues as a slight depression descending the hill through a ploughed field set with potatoes, through another field and beneath the building of Smiles Transport Contractors. Milecastle 9, Chapel House is a clearly defined square mound to the south of the main road, but no milecastle causeway is traceable in the poorly preserved Vallum.

As we enter Walbottle, in the small field west of the railway track are faint traces of the Vallum, which becomes distinct in the next pasture. The Wall and Vallum are becoming quite close and once more the command of the Wall and Vallum to the south is noteworthy. In the next meadow north of a castellated house the Vallum is indistinct, but, after crossing a road to the south, is visible through a garden before disappearing beneath farm buildings. The buildings are situated over the ditch and south side though the north mound is clear in the fields to the north. A good crossing is distinguishable. Beyond another road to the south the Vallum runs between a row of houses

and the Roman Catholic Church and School. In the ploughed field beyond the Vallum becomes quite plain with a deep ditch and fine mounds but with obliterated berms. Two ditch fillings and a third crossing occur before a boggy hollow is reached and in the next meadow the Vallum is distinct, converging on the Wall as it approaches Walbottle Dene. Although depressions in the mounds show the existence of crossings it is impossible to say whether ditch fillings exist.

On the crest of the hill milecastle 10, Walbottle Dene is plainly distinguishable. The north mound of the Vallum is very close to the milecastle and although both north and south mound gaps suggest a milecastle causeway there is no evidence for one in the ditch, because of ploughing. The Vallum twists 20° to the south⁶ and the ditch and mounds become impressive approaching

XCIII. 8. Walbottle Dene. The ditch soon becomes a wild confusion of bracken, nettles and shrubs and the mounds and berms are quite clear as they gradually descend into the dene. After two precipitous drops the dene is reached and traces of the Vallum can be seen almost to the foot. It seems quite clear that no traffic could have ascended the Vallum via the berms at this point. The ascent of the western side is less steep, and the ditch is most distinct.

Immediately at the top, the Vallum disappears beneath a new housing estate: firstly under No.70 and then No.57 Woodside Avenue, and 28-30 Callerton Road; and then it passes under the Newburn road to south of the church. It seems to reappear in the garden of Orchard Terrace, but is virtually invisible to Throckley Bank Top. Here the ditch is visible below the second row of cottages on top of the hill. In the next ploughed field the square mound of milecastle 11, Throckley is quite distinct and there is a suggestion of a depressed area at the Vallum causeway position. The Vallum ditch and mounds are clear but crossings are difficult to distinguish.

In the next two fields the Vallum clearly proceeds but with no outstanding features to record, though at one point it is distinguished by a modern tip with hawthorn trees growing on it. On the summit of Great Hill the ditch is cut through freestone rock and is excellently preserved. The north mound is very high though the south is partially worn away, and the whole work is thickly covered in gorse. The north berm is small and steep though the southern is reasonably flat and without a marginal mound. Tool marks are clear on the south side of the ditch and the Handbook records

that the ditch sides are built in masonry where the rock exhibits gaps. The ditch is approximately 23 feet wide. Looking back from the low-lying ground immediately to the west the profile of the Vallum is indeed striking^s. In the paddock immediately to the south of a fine stretch of Wall preserved by the Ministry of Works,

XCIII. 7. the Vallum passes through boggy ground where its ditch is used as a pond. The mounds are clear as far as the village of Heddon-on-the-Wall. The site of Milecastle 12 is covered by the village and the Vallum and its causeway have similarly been destroyed. The line of the Vallum runs along a lane to the north of Mushroom Row which must be on the site of the south mound. Here the north mound seems to have merged with a little hill^ock lying between the Vallum and the Wall, which are here very close together.

West of the village the Vallum reappears clearly. Two large semi-detached houses stand on the south mound which merges with the slope of the hill rising behind it. The Vallum clearly commanded a view to the north at this point. Another fact is here noteworthy. The tree-covered hill to the south overlooks the Vallum illustrating strikingly the fallacy in the theory stating the Vallum to be a defence to the south. The Vallum now becomes

broad, flat and marshy, the mounds become less distinct and there is no marginal mound. A gap in the south mound shows the presence of a crossing at the western edge of the field. In the small field adjoining, the Vallum is traceable and is now beginning to slope again from north to south. A wire-netting fence runs along the edge of the north mound followed by a line of trees in the next field whilst the gardens of five modern houses reach the north lip of the ditch from the north. In a small field between this group of houses and a small bungalow the ditch and mounds are again well-preserved. Beyond the bungalow, wooden huts are erected over the ditch but the south mound is distinct in the field to the south. In a copse of trees the ditch becomes clear for 20 yards or so but is obliterated by a cart track. In the next field the impression of the Vallum is clear but ploughing has considerably reduced the mounds. The Vallum peters out towards Rudchester Burn and is only faint in the next pasture at first. Approximately a third of the way up the field the mounds recommence, the south mound being particularly fine. The berms have been considerably worn away. A causeway opposite

XCIII 3. milecastle 13 was not located, though further west is a modern causeway opposite a field gateway.

The line of the Vallum is distinguishable as far as the farm buildings of Rudchester House. The fort **Xciii. 2.** of Rudchester is distinct on either side of the Military Road and Haverfield thought that a "slack" visible some 240 feet south of the fort represented the line of the Vallum, which did not need to deviate round Rudchester fort as it did at Berwell. On the west of the farm and copse, the Vallum cannot be detected down to March Burn. In the next field it reappears very faintly, but no causeway opposite milecastle 14 could be distinguished.

In the field leading to the former public house - "The Iron Sign" - the Vallum ditch and north mound become more distinct. Nearing the house the south mound can be picked out and the Vallum seems to be heading for the farm gateway. Beyond a road to the south the Vallum is not detectable as it ascends Eppies Hill. Beyond a copse, however, it emerges, skirting the southern side of the hill "as if avoiding the rocky top"⁹, and then, approaching the Wall, becomes clearly distinguishable. There is no apparent sign of a marginal mound. In the following meadow three gap positions can be located though the earthwork is badly preserved. In the next field modern cultivation

ridges cutting across the Vallum from north to south have considerably reduced it in size, but in the next the ditch and mounds can clearly be followed in a small wood. Trees and bushes cover the mounds and berms whilst the ditch is marshy and rush-filled. Beyond the wood, in the same field, a complete crossing is visible, and the Vallum slopes from south to north. Again it becomes indistinct in the next field where a small stream

XCVI. 1. uses the Vallum as its course. The next field is ploughed and the Vallum discernible but indistinct, as is the case in the next, though here a hedge seems to run on the line of the ditch. Electricity pylons stand to the north of the Vallum at this point. In the second field west of the pylons the Vallum is plain once more, its north mound covered by a field wall, and yet gaps are discernible. In the next ploughed field are traces of depressions in the south mound. In the pasture south of Harlow Hill the Vallum is quite well preserved. At first the ditch is marshy and rather wide, but soon mounds and berm are very fine. A small marginal mound seems to exist on the south lip. Four crossings are visible, the first two with a suggestion of ditch filling, and then the earthwork becomes indistinct. The south mound

is noticeably filled with stones. Beyond a road leading to Horsley there are no traces of the Vallum, whose course has been obliterated by quarrying and rough mounds of spoil. Here too is the approximate position of milecastle 16 but once more the milecastle causeway is no longer visible to the eye. The line of the Vallum is considerably to the south of the crest of the hill.

Throughout the three fields approaching Whittledean Reservoirs the ditch and mounds of the Vallum are visible and occasionally a crossing can be detected, though no marginal mound exists. It ought to be emphasised that in cultivated areas, the fact that the marginal mound no longer exists does not necessarily imply that it has never existed. Its position on the lip of the ditch must have inevitably been susceptible to early removal by ploughing. One reservoir completely covers the line of the Vallum as far as a road to the village of Welton, noteworthy for its pele tower built of Roman stones. Beyond this the Vallum

XCII. 4. reappears ascending the hill converging on the Wall.

At milecastle 17 where the Vallum is too poor to show a distinct causeway, the two works are close together and 300 yards further they come almost into contact.

For two fields west of the milecastle the Vallum has been ploughed and is therefore not finely preserved. Yet depressions in the mounds mark crossing positions and west of the gate of ~~the~~ ^{the second field} is a crossing complete with a slight ditch filling. No marginal mound exists and the Vallum at this point slopes slightly from south to north. In the next field, low-lying and almost on the level, the ditch and north mound are traceable but the south mound is not at all distinct. In the next field it is poorly preserved and at the next fence a pond is in the ditch. In the following meadow no distinctive details are visible, and there are no apparent crossings nor a marginal mound. The impression is clear in the next field, west of the Robin Hood Inn. At the entrance to a farmyard is milecastle 18, East Wallhouses and to the south the Vallum is sufficiently well preserved for a milecastle causeway to be distinguished, near the eastern fence of the yard.

The Vallum runs to the north of the farm, its gapped south mound and berm particularly good, and the north mound quite high. In the field immediately west of the farm the Vallum becomes very fine. The ditch is excellent, containing no causeways except one on the eastern edge which may be modern. The mounds are well preserved and four clear gaps may be seen in the south

mound. Roughly half-way along the field the north mound becomes larger but its gaps are not at all distinct. The berms are wide and flat and an unusual feature appears in the position of the marginal mound. Opposite each gap in the south mound is a small mound like a traverse, which obstructs the approach from the south mound gap. Here too, ditch fillings are present. In the next pasture six crossings are seen, usually complete with ditch filling, roughly 45 yards apart. No marginal mound is present. In the next field two

XCII. 3. more crossings are visible. In the pasture immediately east of Wallhouses farm four crossings with gaps and ditch fillings are clear in the well-preserved ditch and mounds. The south berm is wide and flat and no marginal mound is present. The Vallum disappears beneath a road to the south and reappears north of the farm. In the next pasture it is in fine preservation.¹⁰ Five crossings may be seen by ditch fillings and gaps in the south mound, though those in the north are not so clear, and a sixth is cut across by a modern drain. No marginal mound exists here. The south berm on measurement proved to be 30 feet wide. The Vallum runs through a small field and reaches the road down to Corbridge. West of this, the Vallum passes through a young, small plantation. Its ditch is well-defined by

rushes, though the berms have become worn away and the mounds diminish in size after 20 yards. Nevertheless the depressions in the north mound show that crossings once existed, but only one ditch filling can be detected. No marginal mound may be said to exist. The mound of milecastle 19, Matfen Piers, and its accompanying Vallum causeway are both clear in the next ploughed field. Four crossing positions may be seen though the earthwork has been considerably reduced by ploughing.

The next field is also ploughed and the Vallum is therefore rather worn away. Crossings are again discernible and no marginal mound exists. The following field proves extremely interesting. Four complete crossings can be seen, and the fifth is almost on the line of an old field baulk with trees growing upon it. The sixth crossing is complete but the berms at the crossing seem to have been depressed. Four more complete crossings are seen but in every case a small mound blocks access from the south to the causeway which comes high up in the ditch, giving a traverse effect, a feature already noted west of milecastle 18. The traverses are most marked as are the ditch fillings and gaps, and resemble an intermittent marginal mound. The system continues

similarly in the next field as far as a road leading southwards to Corbridge. Nine crossings are visible as clear ditch fillings, though the gaps in the mounds are not always so plain, and the first four seem to be blocked by traverses. The crossings are regularly about 45 yards apart. There is no marginal mound. On reaching the Corbridge road the Wall and Vallum are about 50 yards apart. Two ditch fillings show the system to have continued into the next field where the Vallum is not quite so clear. Three more crossings may be distinguished before the western field-wall is reached and then a hen-hut is situated on the south berm in the next field. Here is the site of milecastle 20, Halton Shields and the Vallum runs very close on the south. The Vallum is so disturbed at this point that no milecastle causeway is apparent.

KCU. 2. The Vallum can next be seen ascending Carr Hill to the west of the houses, a field-wall showing its contour remarkably well. The ditch becomes fine in the small wood, but then deteriorates as it approaches Carr Hill Farm, by a gate leading into the farm-yard. West of the farm the ditch reappears, its lips very prominent. Opposite the gateway half-way down the field large heaps occur on the south lip and when they cease traces of the south

mound appear. Although the north mound is very poorly preserved here, five gaps are distinguishable in the south mound and the ditch is slightly filled at these points. Opposite the last three gaps a mound occurs on the south lip giving the traverse effect already noted twice before. The south mound is very stoney in this section and one wonders whether the mounds were revetted in stone. Four irregular craters destroy the south berm near the western field-wall. By the time the next field is reached the Vallum is very fine." The stoney south mound is well-preserved and the depressions of the gaps are clearly followed in the superimposed fences. No crossings appear to be left in the ditch, though the gaps are usually clear in both mounds. At crossing 1 there may be a small mound on the northern lip and as in the previous field the northern slope is either revetted in stone or cut through it. Now the marginal mound commences on the south lip and is continuous throughout the field. At approximately the fourth crossing the earthwork begins to twist slightly to the south as if to avoid cutting through the rocky summit of Down Hill. At the fence the ditch slope is cut through rock. In the field of Down Hill all three mounds are prominent though the gaps are rather shallow. The Vallum is sloping slightly from

north to south though the south berm is very flat. The gaps are roughly at a 40 yards interval. After the third crossing, the Vallum twists sharply back into line with the Wall. On the turn the mounds are broken through by a track coming from the north-east in a south westerly direction, and the ditch is filled to accomodate it. An excavation undertaken in 1952 discovered a convincing road metalling on the south berm just east of this point but failed to achieve conclusive proof that the metalling continued through the gap and proceeded in a south westerly direction. Whether the existing cart-track through the Vallum follows an earlier Vallum branch road to the Stanegate is still then an open question. Further, although the 1893 excavation showed the Vallum mounds to be revetted in stone at one point, no similar evidence was found in 1952 in the one section cut across the south mound. The marginal mound now becomes huge and three more crossings can be seen before the Vallum disappears down the western slope of the hill. The ditch is partially rock-cut and is therefore well-preserved and traces of what may be a stone kerbing can be seen along the south lip. The north mound merges with Down Hill and the Vallum ceases abruptly before milecastle 21 is reached

Looking back from the west the profile of the Vallum on the hill is strikingly clear.³

At Halton Chesters the Vallum was discovered on excavation to deviate round the fort as it does at Benwell though, since the existence of fort causeways across the Vallum was not known then, one was not looked for at Halton. As is usual at forts, the Vallum has been so systematically filled in as to be no longer visible on the surface. A western extension to the fort probably buried the western half of the Vallum diversion. No certain trace of the Vallum can be detected until

XCII. 1. Fernie Dene is crossed. On the crest of the next slope, rising gradually towards Portgate, the Vallum reappears as a broad ditch and soon the north mound is again apparent. No marginal mound is present and both berms are flat and broad. Three crossings are traceable and there seem to be slight ditch fillings. A gentle depression with slopes on either side represents the Vallum as far as the Errington Arms. Although milecastle 22, Portgate is clearly visible as a rectangular mound, the Vallum is too poor to distinguish a milecastle causeway.

Crossing Dere Street at Portgate both the Vallum and the Wall ditch become extremely plain and interesting and remain so for three miles. Behind the Errington Arms

the ditch appears very wide and deep, but it soon assumes its normal proportions and the two mounds reappear. Traces of crossings are visible in the ditch at two points. In the next field the ditch is filled with gorse bushes and a fence runs along the north lip of the ditch. The ditch is deep and the south berm and mound well preserved, the latter showing traces of crossings. No marginal mound is present. A wide filling of the ditch and depression of the south berm may not be Roman in origin. Two more crossings are discernible before a road to Portgate farm is reached. In the next pasture the Vallum has been destroyed for some 30 yards but reappears in a fine state. Gaps exist in each mound but seem to alternate rather than correspond and neither fillings nor marginal mound exist.

Over the next fence, the Vallum is indeed impressive, to William Hutton's great delight,⁴ with its mounds and ditch picturesquely covered in gorse and bracken. It must here be almost in its original state for the ditch is so steep and deep. At the first crossing⁵ the ditch is 23 feet wide, and a marginal mound is set back from the ditch lip. The ditch is filled up to the berms and has certainly been used as a modern cart-track, but whether it is a Roman crossing is difficult to say. The south ditch

lip then becomes very pronounced. At the second crossing the Vallum ditch is only 22 feet wide though the marginal mound is huge at this point. The third crossing also contains a huge causeway and like the first may represent a Roman crossing added to in comparatively recent times. The fourth crossing is marked by a gap in the north mound, but none in the south. The Vallum ditch has been tampered with but seems to be roughly 32 feet wide. Some 20 yards further west occurs a depression in the south mound. At the fifth crossing, however, the south mound gap corresponds with that in the north. The ditch seems to be slightly filled and is 30 feet wide. The marginal mound is still continuous and there seems to be a slight mound on the north lip of the ditch also. At the sixth crossing both gaps seem distinguishable as is a slight ditch filling. The ditch is 32 feet wide. At the seventh is a north mound gap, none in the south, no crossing and a high marginal mound. The ditch is 30 feet wide at this point. An eighth crossing should exist before the milecastle causeway, but is not at all obvious. Here for the first time is a fine causeway clearly visible¹⁶ opposite the rectangular mound of milecastle 2~~3~~, Stanley Plantation. The north mound has been ploughed away at this point, but the south is continuous. The

marginal mound stops and the south berm is depressed to the level of a wide, substantial causeway which tapers off into the rush-filled ditch on either side. This is one of the finest examples of a milecastle causeway and was selected for excavation in 1952.¹⁷

LXXXIII
13. Beyond the causeway the marginal mound recommences and a ninth crossing occurs, before Stanley Plantation is reached. The gaps are clear and a slight crossing exists. Although the marginal mound is large, the ditch is only 23 feet wide. Through the plantation the Vallum is very well preserved but shrubs, young trees, heather, bracken and rushes hide its features. Ten crossing positions were noted in the plantation itself but the ditch is so overgrown that it is impossible to say whether crossings still exist. The marginal mound is however well developed in this sector. Tool marks are visible in both sides of the rock-cut ditch. On entering an adjoining smaller plantation the lack of gaps in the north mound may mean that the Military Way has ascended it to travel along it to just short of milecastle 26.¹⁸ Beyond a metalled road to the south the Vallum continues into the next pasture, its ditch wide and boggy, the marginal mound particularly fine, the south mound followed by a field wall with gaps at approximately 45 yard intervals, whilst four gaps are visible in the north. Approaching the western field

LXXXII.
16.

wall the three mounds are very fine, though the ditch has been tampered with. No obvious ditch fillings exist. A break in the south mound shows it to be composed of yellowish upcast. In the next field gorse and heather cover the earthwork, but soon it becomes finely preserved. Rocks show through on the north ditch slope and the southern slope is very precise. The crossing positions are approximately 40 yards apart as shown by gaps in both the north and the south mounds. The marginal mound is composed largely of stones. Passing through a small field containing a rusty old tin hut we reach milecastle 24, Wall Fell, clearly visible in the north-west corner of the next pasture. Here the Vallum is less well-preserved, but a milecastle causeway and south mound gap are both fairly obvious. The causeway is depressed. The marginal mound seems to have ceased at the milecastle causeway. Three more crossings, complete with ditch fillings, may be seen before the earthwork is destroyed by quarrying. In the next two ploughed fields the Vallum is merely a depression between two gentle slopes. But in a gorse-covered patch just east of Greenfield Farm the ditch is very clear and flat-bottomed, with no sign of crossings. No marginal mound exists and the south mound shows the crossing positions. Beyond Greenfield the north mound

has been almost removed by ploughing and the south mound is covered by the field-wall. The south berm is level, the ditch small but quite deep and no marginal mound exists. / One clear complete crossing exists. The next small field is of great interest for here not only does a marginal mound exist but also clear crossings in the ditch. At this point at least, the marginal mound cannot represent the material from removed crossings. The first crossing has been used in recent times. The second is marked by a clear filling reaching half-way up the ditch. The north mound now appears to be continuous. The third and fourth resemble the second with clear ditch filling and marginal mound. In the next field, two more similar crossings continue the series, but a third is destroyed by a modern cutting. The marginal mound still continues. Now a plantation covers the south mound berm and ditch, and occupies the length of four crossing positions. In the plantation the ditch is so overgrown that it is impossible to say whether crossings still exist in it. Beyond a cart-track to Codlaw Farm the Vallum ditch, though noticeably narrow, is excellently preserved and gorse-covered. The marginal mound is however large, implying that the marginal mound does not only exist where the ditch is of the "recut" type.

The south mound has been tampered with and its gaps are therefore obscure and whether gaps exist in the north mound is not at all certain. All the mounds are noticeably stoney. The ditch appears to widen before milecastle 25, Codlaw Hill is reached. In the Vallum ditch an excellent example of a milecastle causeway remains.¹⁹ The south mound has been removed at this point, in post-Roman times presumably.

West of the causeway the ditch is again narrow. On the other hand, the marginal mound is large and composed of stones, even building stones, and rather clean looking material. At the next crossing position the south mound has been completely flattened for a wide area. A break in the marginal mound a little to the west shows a clean yellow-buff upcast. In the next field the Vallum seems to assume exceptionally large proportions. Both north and south mounds, covered in bracken, are very well preserved and the marginal mound is at its largest. The ditch too is fine, deep, steepsided and surprisingly narrow - 24 feet at one measurement. Although a marginal mound exists the Vallum is not of the "recut" profile. No fillings exist in the ditch. At first glance neither the north nor south mound exhibits gaps but each is ostensibly continuous. On closer examination three very

slight depressions mark the position of gaps which have clearly never been completely dug. The lack of gaps would explain the lack of ditch fillings. Beyond a modern crossing the Vallum continues splendidly, now covered in gorse but otherwise as in the first section of the field. The gaps are not at all clear. Beyond a road to ~~A~~comb, the Vallum runs through a small rough field into a meadow where two ditch fillings may be seen, though the north mound appears to be continuous. Passing into a small field south of some houses to the north of the Military Road the Vallum is again noteworthy, and the marginal mound obvious. Just before crossing beneath the main road a clear crossing may be seen in the ditch although there is no north mound gap. Now the road twists to run along the south berm of the Vallum. The south mound has been obliterated, the line of the ditch taken by a field-wall and the north mound is merely a slope in the meadow to the north. West of St. Oswald's Cross the ditch and north mound are clear again and are now very close to the Wall. Brunton Gate cottage lies on the south berm of the Vallum before it commences its descent of Brunton Bank. Beyond Brunton Bank Top the ditch and three mounds are quite distinct. The north

mound appears still to be continuous. It is likely that the Military Way runs along it at this point since there is no room for it between the Vallum and the Wall.

In Dixon's Plantation the Vallum is less plain, Before reaching the modern road the north mound shows itself to be composed of light sandy soil. The ditch reappears in the pasture just above Planetrees farm only shortly to be obliterated by the farm buildings. The house is in the ditch and thus no trace of the Vallum causeway to milecastle 26, Planetrees is visible.

Beyond, the Vallum re-emerges quite plainly with no apparent gaps or crossings, running to the south of the excellent section of Wall preserved by the Ministry of Works. It is quite well-preserved in the next field with no apparent gaps nor a marginal mound. In the following ploughed field the Vallum aims for a white gate, passes beneath a road to the south and soon enters into the grounds of Brunton House. Near a fine stretch of Broad Wall including Brunton Turret 27b the line of the Vallum may be picked up with a large tree in the centre of its ditch, but it soon peters out as does the Wall itself. West of the Bellingham-Hexham road it reappears faintly and gradually becomes less and less

distinct as it approaches the North Tyne. To the south of milecastle 27, Low Brunton the Vallum is too poor for a causeway to be traceable though excavation would undoubtedly find one.

A little before the railway line is crossed the depression of the ditch becomes more obvious²⁰ and is traceable to a line of stunted trees just short of the bank of the North Tyne. The bridge abutment of the Wall lies to the north. At the point where the Vallum ditch ends, excavations were undertaken in 1951 by the writer²¹ to discover any remains of a Vallum bridge abutment, or to find out how the Vallum behaved as it approached the river. The excavations yielded no positive results. On the western bank of the Tyne the line of the earthwork may be detected as a slight depression aiming for Chesters fort. Just short of the south-east corner of this exceptionally interesting cavalry fort the depression stops and nothing more of the Vallum is traceable on the surface. In 1903 Haverfield thought it coincided with the south rampart of the fort, but this now seems unlikely. Air photographs²² suggest a diversion similar to those of Benwell and Halton with the usual causeway, probably superimposed by civil settlement buildings. At the exact point suggested by air

photographs large blocks of masonry (probably fringing the causeways) may be seen on the ground south of the south gate of the fort. Here excavation directed to solve the problem would undoubtedly discover a sequence of building operations at least as interesting as those at Benwell. West of Chesters House and a road leading southwards to Haydon Bridge the Vallum reappears quite plainly. The Wall and Vallum are very close together ascending

LXXXII.
10. Walwick Bank. Neither the Vallum causeway nor milecastle 28, Walwick are extant.

Beyond the farm on the left of the main road the Vallum reappears only to run beneath the road, which, bending its course at the summit of the hill, continues along the north berm and mound of the Vallum. A small stream follows the course of the ditch in the next field. Gradually the Vallum as a whole becomes more and more distinct and continues through a copse beyond a farm to the south. In the next meadow the ditch and south mound are quite marked, so that depressions may be detected in the mound. No marginal mound is visible. Seven crossings are visible with suggestions of ditch fillings. The

ditch is left unploughed in the next field and is therefore
LXXXII.
9. very plain. The south mound is nearly removed by ploughing yet traces remain of the crossing system. Beyond

the next field, the Vallum passes into a wild plantation as it begins to ascend Tower Tye Hill. The ditch is overgrown with rushes. West of a road to Haydon Bridge the Vallum is in beautiful form, the ditch deep, the south mound high. A large marginal mound recommences and is embedded with stones. The work is completely overgrown with a profusion of laurel bushes and shrubs of various kinds. As it passes into a fir plantation a clear crossing exists although the marginal mound is large. The north mound and berm have hitherto been below the road, but opposite Tower Tye farmhouse the mound appears to the north of the road, before disappearing into a wood. On the crest of the hill, after another crossing, the south mound passes beneath the road whilst the northern half of the Vallum is correspondingly clearer. At the next crossing position all three mounds seem to be gapped, whilst the ditch is beneath the road. West of the plantation the Vallum ditch emerges in a pasture to the south of the modern road. The first crossing proves to be a causeway opposite milecastle 29, Tower Tye. The filling of the ditch is clear as is the south mound gap, but the south berm is not depressed. The Vallum slopes considerable from south to north at this point and is itself commanded by a hill to the south.

For the next two miles the Vallum, for its magnificent state of preservation and unusual interest, is unparalleled for the rest of its course.²³ From Tower Tyfe the clearly marked mounds pursue at once strikingly and relentlessly their westward course, a truly impressive monument to Roman authority and skill. Its details are here so important that each crossing will be described in turn. To just short of milecastle 30 the north mound and berm are beneath the modern road. The first crossing beyond the milecastle causeway is clear in the south mound only. The south berm seems to have been cut away in modern times and it is difficult to say whether a ditch filling exists or not. The second is marked by a good south mound gap though again the berm has been cut away. A small marginal mound seems to occur on the south lip from just west of crossing 1. The third crossing is marked by a ditch filling but since the south mound and berm have both been destroyed the filling may be modern. The fourth crossing is shown by a clear south mound gap and a shallow ditch filling. The south berm is intact and no marginal mound exists. The fifth and sixth crossings are similar to the fourth. A trough set into the ditch at roughly the seventh crossing obscures the picture here, and the eighth crossing, in the hollow,

is obliterated by a modern gateway. The interval between the crossings has so far been approximately 45 yards.

The interval increases to approximately 50 yards as the Vallum ascends Limestone Bank as far as milecastle 30.

A marginal mound clearly composed of whinstones recommences before the ninth crossing is reached. The south mound gap is apparent, the ditch slightly filled, but the south berm has been destroyed. At the tenth crossing is a south mound gap, a quite high marginal mound and a ditch filling. There are only notches in the gap position of the eleventh crossing. The ditch is filled for some distance, but the marginal mound seems to have been removed. The gap of crossing 12 is however large and may have been partially removed recently. The ditch filling is however excellent, with an accumulation of stones and soil on its western or uphill side. The marginal mound has been pierced at the crossing, but this may be of recent date. The ditch now becomes excellently preserved and is 21 feet wide. The stoney character of the marginal mound is now marked. Crossing 13 is shown by a deep gap in the south mound, and a clear ditch filling with accumulation on its western side, but the marginal mound is depressed again. The rock-cut ditch is now 18 feet wide. The line of the fourteenth crossing is taken by a modern

cartway. From this point the south mound has been despoiled of its stones and therefore its gaps are difficult to detect, whilst the marginal mound becomes quite unusually large²⁴. Crossing 15 is clear from its ditch filling and western accumulation, whilst the south berm, marginal mound and north lip have partially gone. A little west a cutting through the marginal mound shows it to be composed of whin boulders and dark brown soil. The sixteenth crossing has a ditch filling and accumulation, as has the seventeenth where the marginal mound is large and no south mound gap is apparent. Crossing 18 is marked by a clear south mound gap and ditch-filling and accumulation though the south berm has been reduced somewhat. The marginal mound is remarkably stoney in composition. Crossing 19 exhibits a substantial ditch fill and accumulation, and although the south mound is high, it appears to have been notched. A break in the marginal mound a little west shows a heap of whinstones and loose brown soil set upon clean rust-coloured subsoil. No real trace remains of crossing 20 but a slight ditch filling marks the 21st. Here the marginal mound is low. Crossing 22 shows a good ditch filling and accumulation, though the south lip is rather worn down. The marginal

mound is quite clear but the south mound destroyed. Crossing 23 is marked by a clear depression in the south mound and shallow stoney ditch filling. At the 24th the south mound gap and ditch filling are both plain, and the marginal mound, though small, is still of the same character. The situation at crossing 25 is not obvious since the ditch is rather boggy, but a filling appears to exist. Crossing 26 is the last in this field and shows a high crossing opposite a hunting gate. Here the rock-cut ditch is 20 feet wide. The 27th is in a small plantation, the south mound gap being clear, but not the filling since the ditch is very overgrown. The marginal mound is large. The crossing at No.28 is of large stone blocks. No.29 has a clear gap and very obvious filling of blocks of stone. The marginal mound has disappeared at the crossing but reappears beyond it. Now the north berm begins to emerge from beneath the modern road as the course twists slightly to the west on the summit of Limestone Bank. Here too a new feature has been observed. The ditch is excellently preserved, and a very fine filling marks the position of crossing 30. The filling is composed of large stone blocks which have plainly been taken from both berms of the Vallum and neatly deposited in the ditch. The marginal mound

stands high at the crossing. The filling of crossing 31 is equally obvious but the south mound gap seems to be a little west of position. No marginal mound exists here. The north mound now emerges from beneath the road and crossing 32 is marked by a depression in the north mound and a gap in the south. Patches on the north and south berms cleared of blocks of stone illustrate strikingly the provenance of the large blocks of stone composing the huge crossing in the ditch. The marginal mound here is obvious. Crossing 33 is really a causeway opposite milecastle 30, Limestone Corner. The causeway is wide and a modern causeway²⁵ is superimposed on its western edge. The western wall of the plantation runs over the causeway. Again the clearance of the north berm of stones at the causeway is striking. Limestone Corner milecastle causeway was partially excavated in 1951²⁶ by the writer.

Immediately west of the causeway the rock-cut ditch which must be almost to its original profile is 15 feet wide. No trace remains of crossing 1 though crossing 2 is obvious some 100 yards west of the causeway. As far as Carrawburgh Farm²⁷ the interval between crossings is approximately 50 yards. Just east of crossing 2 the ditch is 16 feet wide. Its sides are nearly vertical cut through basalt. Here is the standard, as opposed to

recut, profile of the Vallum ditch. In spite of this, a marginal mound runs almost continuously along the south lip of the ditch. Crossing 2 is clearly marked by a gap in the south mound and a rather smaller one in the north, slightly west of position. The ditch filling is conspicuously rocky²⁸, and both berms have been cleared of basalt blocks to form it.²⁹ The south lip and therefore the marginal mound are slightly reduced. Just west of the crossing, big basalt blocks recur on both berms and the marginal mound is high. At crossing 3 the south mound gap is clear, the marginal mound high except for one slight modern break, the ditch 19 feet wide. Again the crossing is composed of blocks rolled down from the berms. It almost looks as though a few blocks from the south mound have been rolled to the south of it, though there is no real approach or "expansion" to the south mound gap. The north mound here appears to be continuous though the Military Way has not yet climbed to it. West of crossing 3, as the Vallum reaches more level ground, the ditch exhibits gentler slopes, and is no longer cut entirely through rock. Thus a smaller number of blocks are found in the berms. At crossing 4 the south mound gap is clear but the north mound huge and continuous, for now the Military Way

climbs on to it from the north. A ditch filling is wide and plain, though both berms have been partially worn down. The south mound gap is not deep and the material seems to have been pushed over to the south as if to form a sort of approach to the gap. The ditch is now 33 feet wide and is clearly of the recut type, with sides much gentler than those only a little to the west. The marginal mound is common to both standard and recut sectors. ³⁰ 18 yards or so west of the fourth crossing a section was cut across the Vallum in 1952 by the writer. The fifth crossing is marked by a depression in the south mound and the small amount of material thus removed probably forms an "expansion" or approach to the south of the mound. The north mound is continuous, the marginal mound quite high and there is a definite though shallow ditch filling. A depression in the south mound shows the position of crossing 6 and once more there is probably an expansion. The north mound is continuous, as is the marginal mound except for a small sheep-track. A slight ditch filling is apparent.

Before crossing 7 the Vallum is again cut through rock and immediately resumes a steeper profile, whilst the

marginal mound not only continues, but is noticeably larger in the rock cut area. Crossing 7 is clear from a gap in the rocky south mound which may have an expansion. Both the north and marginal mounds are large and continuous. Again the ditch filling is striking, and again it is composed of blocks cleared from the berms. It ought to be noted in passing that the crossings in this sector at least are far too rocky to have allowed traffic of any kind to pass over them. This deduction is of value in considering the purpose of the crossings system. Obviously no attempt has been made to convert them into miniature causeways or roadways. Crossings 8 and 9 follow the same pattern as No.7. Now the ditch becomes gentler as the Vallum leaves the solid rock behind. No blocks now exist on the berms. Again a "recut" type of ditch exists with a marginal mound as in the standard sector just left behind. Clearly then the marginal mound is common to both types of ditch. Crossing 10 is marked by a south mound depression and a shallow ditch filling. The north and marginal mounds are both continuous, though the latter is not large. At the eleventh crossing the filling is not obvious but the south mound gap is clear. The north mound is continuous but the marginal cut through by sheep tracks. The marginal mound is now set slightly

back from the ditch lip. A pond begins to occupy the Vallum ditch which is now rather broad. At crossing 11 another unusual feature may be observed. Just at the point where a field baulk approaches the Vallum from the south a whinstone wall commences, ascends the south mound at right angles to it and then twists sharply westwards roughly in line with the inner face of the mounds. At the next seven gaps this wall appears and seems to block each gap, as if trying to rehabilitate the mound. At the eighth gap however the enigma is solved. The blocking wall turns sharply to the south and is clearly an old field baulk and not of Roman date.

The south mound gap of crossing 12 is plain, and there may be an expansion. The north mound is continuous but low. The south berm is depressed and if a marginal mound existed it has been removed. The pond in the ditch narrows slightly which may mean that a crossing existed at this point. Beyond a fence crossing 13 may be seen. A south mound gap and expansion are obvious, the pond giving slight evidence of a ditch filling, whilst the north mound is continuous. No marginal mound exists on the south lip but an unusual feature appears on the north. Opposite the crossing is a small mound or traverse like those at Matfen Piers but on the north lip instead of the south. The

position at crossing 14 is still clearer. Here is a definite south mound gap and expansion, a clear ditch filling, since the pond has ended, a continuous north mound, and again a traverse on the north lip. Crossings 15 and 16 are similarly clear, and then the marginal mound recommences. At crossing 17 the south mound gap and ditch filling are marked but both berms are depressed, the marginal mound cut through, and no traverse exists on the north lip. Crossing 18 consists of a good south mound gap and expansion, a definite ditch filling and continuous north and marginal mounds. It is at this point that the supposed "blocking wall" turns to the south and becomes clearly recognisable as post-Roman. Crossing 19 is similar and the ditch is here 24 feet wide. Before a field wall is reached, crossing 20 is visible with continuous north and marginal mounds, a definite ditch filling and an indefinite south mound gap. Crossings 21 and 22 are apparent in the paddock of Carrawburgh farm. The north mound is continuous, the ditch wide and deep exhibiting two clear crossings, whilst the marginal mound is huge. Carrawburgh Farm occupies the position of the 23rd. crossing. Beyond the farm the Vallum is still reasonably distinct and the marginal mound still in existence. Crossing 24 may be seen west of a pump

its ditch filling wide, its south mound gap clear whilst the north mound continues uninterrupted. The marginal mound seems to be set back from the lip. The ditch is now wide, shallow and filled with rushes. Three further ditch fillings may be discerned before the field wall is reached. The gaps are clear in the south, but the north mound is continuous. The marginal mound disappears after the second. One ditch filling may be seen in the next field, and two more rather obscure crossings detected before the Vallum becomes virtually invisible. South of milecastle 31, Carrawburgh the Vallum is too poorly preserved for a causeway to be distinguished. Nevertheless its line may be detected running direct for the grass-covered east gateway of Carrawburgh fort.

At Carrawburgh fort the behaviour of the Vallum is unique. It was found in 1934 to run beneath the fort instead of diverging round it as was the normal practice. Standing on the west gateway of the fort the view to the west is quite impressive. The modern road takes the line of the Wall whilst the Wall ditch is clearly defined to the north of it. The Military Way plainly runs along the north mound of the Vallum into the marshy

hollow, just north of the Well of Coventina, and westward up the hill to Carraw. The Vallum ditch is marked by a clear line of rushes as far as Carraw. On closer examination the Vallum is not well preserved though six crossings complete with fillings are visible before the farm is reached. Now the summit of the hill is reached. In the next pasture the ditch is clear with gentle slopes on either side. Two crossings are apparent before the ditch becomes rushy and wide. Soon the south mound is obliterated, but three further ditch fillings are visible before the field wall is reached. In front of Carraw farm the ditch and mounds are both quite well preserved. Two ditch fillings correspond with gaps in the south mound. The Vallum here slopes down from north to south and the view of the valley to the south is remarkably good. As we move down-hill the north mound is particularly fine and a third crossing position is passed. The Vallum now

LXXXI. passes through a narrow copse and emerges in the next pasture.
 II. At first no south mound apparently exists. The first crossing is marked by a north mound gap, but no ditch filling. Then a marginal mound recommences but stops when the second crossing, with north mound gap and ditch filling is reached. The third and fourth are clear only in the north mound, but the fifth has a causeway too.

Now an embankment crosses over the Vallum, and then the sixth and seventh crossings are clear in the north mound and ditch. At the eighth the ditch has been cut through in post-Roman times. Now milecastle 32, Carraw is visible to the north. The Vallum causeway appears to be opposite its south-eastern corner and not due south of it.

West of the milecastle the south mound reappears as a gentle slope. Beyond an apparently modern gap, the Vallum suddenly becomes well-preserved. The north mound is large and may be the course of the Military Way at this point. The south mound is distinct, no marginal mound exists, but the ditch is merely a shallow rift. Both berms are broad and flat. Two gaps with corresponding ditch fillings may be detected but at an unusually long interval from one another. A gap in the north mound opposite the second may be modern. A third crossing is clear only by a south mound gap. In the following pasture the north mound continues grandly, though the ditch is narrow and rushy. A modern cart-track follows the first crossing. A second gap may be seen in the north mound, with a slight ditch filling opposite, only 20 yards or so from the first, whilst no gap exists in the south. After another 20 yards a third slight ditch

filling exists, and then a fourth marked by a north mound gap but none in the south. This is rather odd and may be explained as alternate rather than corresponding gaps in the north and south, each with its appropriate ditch filling. Now the Vallum is cut through by a burn, but beyond this the ditch becomes quite deep. A crossing is clear from a south mound gap and stoney ditch filling though the north mound is continuous. Now a marginal mound reappears quite impressively. Four more gaps cutting away half the height of the south mound only are visible. Then the marginal mound disappears. A final crossing position is not clear. In the next pasture the Vallum is in one of its finest sectors. The north mound is large and continuous and the marginal mound reappears. Five crossings may be distinguished before the Vallum reaches the crown of the hill where it assumes gigantic proportions³¹. The sixth crossing is excellent, complete with ditch filling. On the hill where the Vallum and Wall come almost into contact the Vallum would appear to overlook the Wall. Here the ditch and berms seem to be confused by quarrying. The two mounds seem extraordinarily high. The command both to north and south is indeed noteworthy. After the confusion, just as

suddenly the Vallum becomes orderly and normal. The ditch, berms, mounds all become very fine. Two crossings are marked by a slight south mound gap and a large causeway, whilst the marginal mound continues huge. The gaps in the south mound clearly do not reduce the mound to ground level. Here the modern road swings to the south and begins to cut into the north mound, as the Vallum descends a small slope to Shield on the Wall.³² Four small crossings are apparent in the ditch and usually in the south mound whilst the marginal mound continues. The ditch is here 30 feet wide at largest. Then milecastle 33, Shield on the Wall appears north of the road. The Vallum opposite exhibits a large wide causeway of usual type. Both berms are depressed, whilst the marginal mound fades away. The gap in the south mound does not reach ground level which suggests that no roadway issuing from the Vallum causeway has crossed over the mound to pursue a southerly course.

The Wall now diverges from the Vallum as it prepares to ascend the Whin Sill which now rises impressively in the foreground. The Vallum continues its straight course. Five more crossings may be seen before Shield on the Wall is reached and in each case fillings are present in the ditch, the south mound distinct,

and the marginal mound in existence. Beyond the farm the ditch becomes a duck pond though the berms and mounds continue in fine style. The marginal mound is present at first, but slowly disappears. Fourteen crossings may be counted before the modern road swings southwards across the Vallum at the Coesike Burn. They are marked by small gaps in the south mound and usually by traces of ditch fillings at first.

LXXXI.
10.

West of the Coesike both the Wall and Vallum remain to the north of the modern road for thirteen Wall miles. throughout this sector the Wall adheres rigidly and impressively to the crags of the Whin Sill in all its grandeur and natural ruggedness. The Military Way now leaves the Vallum to perform its service to the Wall more adequately and can usually be distinguished on the whin escarpment. The Vallum on the contrary takes the easiest and straightest course possible, though occasionally at the risk of being dominated by the hills to the south. After the initial contact with the difficulties of cutting through the basalt at Limestone Corner the Roman military engineers seem to have deliberately avoided renewing contact, and judging from a geological map, succeeded until Carvoran was reached. This fact

is eloquent of the Roman soundness of knowledge and practical genius.

At first the Coesike Burn follows the course of the Vallum ditch presenting a picturesque scene. The wall of a plantation runs along the south mound, though the north mound is high. Crossings may be detected in the mounds, until the causeway to milecastle 34 is reached. No marginal mound exists and no crossings are clear. The Vallum curves gently to the south. The milecastle causeway follows the normal pattern. Both gaps are clear, both berms depressed and a causeway fills the ditch.

Lxxxii.
13. The Vallum proceeds normally throughout the field, crossing positions marked usually by depressions in the mound. No crossings are apparent in the ditch, yet no marginal mound exists. The south berm is notably broad and level. In the following field to the south of Sewingshields Farm the Vallum is well preserved at first. It runs in the bottom of a little valley but is cut on a slope from north to south. Now the marginal mound reappears. Three crossings are clear from gaps in the mounds which are here composed of many stones, but because of frequent gaps in the mounds the Roman ones cannot be distinguished. Then the ditch becomes shallow, and the north mound practically merges with the slope to the north.

Soon the earthwork is overshadowed by Grindon Hill to the south. One clear crossing exists however before the accommodation road to the farm cuts across. The causeway of milecastle 35 cannot be distinguished.

The Vallum is again well-preserved in the next field. Six depressions in the north mound mark the crossing positions. No marginal mound nor crossings are present. A fence runs along the south mound. The Vallum begins to slope from south to north and is still overshadowed. It thus continues through another field where three crossings are visible, the last a fine example complete with ditch filling. Nothing particularly noteworthy occurs in the next field except that the south mound merges with the hill to the south. A burn takes the course of the ditch. Nearing the end of the field the hill to the south fades away and a modern cart-track crosses over the Vallum. In the next field the deep ditch contains a stream, and both mounds are good. Now the Vallum is again sloping from north to south. Four crossing positions may be counted and the marginal mound recommences. By this point the modern road is only a short way to the south and Moss Kennels Farm is reached. In the next field the north mound almost merges with the slope to the north, the marginal mound is pronounced and

the south mound visible in the field to the south. Now a small hill again overlooks the Vallum from the south. In the next field a field wall runs along the north mound and bends over the gaps which are thus made obvious. The south mound soon merges with the small hill to the south. The first crossing shows wide gaps, depressed berms and a filled ditch. This may in fact be the causeway leading to milecastle 36, King's Hill. It ought to be pointed out that milecastles 35 and 36 are not visible from the Vallum which is usually considerably to the south, and therefore it is rather difficult to relate the milecastles to any particular causeway. Judging from the map, however, the causeway in question may provide access to King's Hill milecastle.

Now Housesteads fort comes into view on a plateau through the trees. Four crossings are visible before the field-wall is reached. It is not clear whether a marginal mound or crossing in the ditch exist. The Vallum is similar in the next pasture. Again the north mound is followed by a field wall, so that the gaps are made doubly clear. A marginal mound exists at first but fades away. At first the gaps seem to alternate, but then the system proceeds normally and fillings are usually visible opposite north mound gaps. Then the Vallum enters a wood and descends

Xc. i. steeply towards the Knag Burn. Its ditch only is apparent, but that stops before the burn is reached. The Vallum appears to cross the burn obliquely for it may be detected ascending the opposite bank. Here the ditch appears to be revetted in stone. At the bank top the Vallum commands an excellent view to the south. Its ditch is traceable by clumps of rushes here and there as it approaches the fort, aiming directly for Housesteads farm, but it is soon lost in the superimposed terracing. In 1934 an original causeway was discovered in the Vallum, (which does not need to diverge round the fort) opposite the south gate. The position of the causeway is distinguishable, not only on the air photograph, but also on the ground. West of Housesteads, terracing continues and thus the Vallum cannot be certainly distinguished. South of milecastle 37, Housesteads its line and therefore its causeway are lost.

The next certain trace of the Vallum is near the next field wall at the foot of the whin escarpment over-looked by a hill to the south. The south mound, berm and marginal mound reappear first, but the ditch becomes clearer as the field wall is reached. In the next field, south of a kiln on the hillside, the south mound, berm and ditch are still clear though the north

side is very faint. From this point the course is most indistinct until Bradley Farm is near. Here the ditch is followed by a stream. Traces of the crossings system appear in the south mound, but nothing is clear until the farm road has been passed. Beyond the farm road the

Lxxxix. Vallum again becomes quite obvious. The ditch is at the
4. bottom of the field whilst the south lip is bordered by a row of hawthorn trees. The south berm and mound are clear in the meadow to the south. Quite soon the north side enters the same meadow. The grass covering the ditch is of quite a different colour. The berms are both broad and flat and no marginal mound exists. Three crossings may be detected by depressions in the mounds and slight ditch fillings. Next large gaps in both mounds, not quite in line with one another, allow a roadway to pass over the Vallum. The berms are depressed. This may be the causeway to milecastle 38, Hotbank which lies a little to the north. The roadway seems to lead towards Chesterholm.

Three more crossings are traceable in the ditch and mounds before the Vallum is disturbed by a stream cutting through it. A few flat stones lying on the south berm would suggest that here is a suitable place to test the service road hypothesis. Now Milking Gap is reached.

The native settlement ³³ is distinct to the north of the Vallum. The Vallum meanwhile becomes quite fine since cultivation has not reduced it. The Milking Gap road crosses over it near the field wall. Then the mounds become well preserved. Crossings may be seen sometimes with a ditch filling, and no marginal mound exists.

The Vallum begins to bend considerably, though gently, to the south west and very soon the modern road is reached. The Vallum reaches the field to the south of the road before it bends sharply back to the west. The south mound is apparently continuous round the bend, the south berm quite flat. There is no trace of a road branching off ³⁴ from the south berm to the south in the direction of Chesterholm fort. The bend seems explicable by the existence of boggy ground at the tail of the escarpment of the Whin Sill. The Vallum apparently avoids it by diverging round it and taking its position on a ridge to the south from which it commands a good view of the Tyne Valley and Chesterholm. The bog continues as far as Cawfields, but the Vallum comes into contact with it at Whinshields. Two crossings are apparent in the small section south of the road. Then near High Shield Farm the modern road takes its position on the south berm of the Vallum. The south mound can be seen on the left,

the north mound, berm and ditch on the right. Six crossings may be seen in both the mounds and the ditch before the top of the hill is reached. From this point Chesterholm fort is clearly visible to the south east. Now the ditch is rather obscured but four crossings are discernible before a position south of milecastle 39, Castle Nick is reached. The milecastle is so far to the north that the milecastle causeway is not clearly distinguishable. It may be at either of the two field gateways. The Military Way runs clearly below the milecastle and there is an apparent offshoot to the south which loses itself in the bog. It ought to be noted that any road from the milecastle to the Vallum would have to cross the bog. One wonders then if the causeway here was ever in use. Excavation here might discover an original causeway which has neither been used nor modified.

LXXXIX
8. Crossings are marked by gaps in the mounds into the next hollow, up the next field and so on to Once Brewed Youth Hostel. The hostel is situated on the south mound. Now, to the north of the road, quarrying has severely interfered with the north mound for a short distance. LXXXIX
7. At Twice Brewed Inn the Vallum swings slightly to the north leaving the modern road to the south. Shortly the south mound and berm emerge from beneath the road

and as far as some modern bungalows, whose gardens cover the Vallum, the earthwork is finely preserved. Five crossings are apparent before the road to East Bog Farm is reached. No ditch fillings nor a marginal mound are present. In the next pasture the Vallum slopes from south to north and a fence covers the south mound. The north mound, berm and ditch are all distinct. The second crossing is very clear with a definite causeway and depressed berms. Two more are not so clear, but the next has been used as a modern cart track. Here again is a fine causeway. The Vallum now slopes considerably from south to north. Winshields Crag towers up above us on the right and the Wall is out of sight. Again therefore it is difficult to distinguish the causeway opposite milecastle 40, Winshields.

The buildings of Winshields farm obliterate in part the south side of the Vallum. The ditch is then distinguished by a line of rushes, whilst a field wall runs along the south berm. At least two large causeways exist in the ditch before the Vallum enters the next field. The ditch is now quite picturesque with wood anenomes in the spring, and has reached the foot of the whin escarpment, where it continues its course for the next six miles. The first crossing has large gaps, depressed

berms and a broad causeway. Seven more follow, the gaps in the south mound being rather small. Shallow ditch fillings seem to exist at first though a marginal mound gradually develops. The Vallum now emerges into a heather-clad expanse. The ditch is broad and flat and filled with rushes. All mounds are quite impressive. The ground is rather boggy and the ditch therefore considerably silted up. It is therefore impossible to detect crossings in the ditch, though the north mound is frequently gapped. Mere depressions exist in the south mound however. Thirteen crossings may thus be distinguished before the ruin of West Bog Farm is reached. The fourteenth resembles a milecastle causeway, but it cannot certainly be attributed to milecastle 41, Melkridge.

In the next field the ditch is again filled with rushes and the marginal mound large and continuous, yet four crossings are visible in the ditch before a hillock to the south begins to command the Vallum. The marginal mound disappears and the next two crossings are rather obscured. Six more crossings are discernible, the last having a clear ditch filling. The Vallum slopes from south to north as it approaches a metalled road near Shield on the Wall Farm. In the sector commencing

LXXXIX
6.

the Vallum is at its finest, largest and most impressive

throughout its course, and a tribute to the grandeur and magnificence of the Wall scheme. In a small field bordering the Caw Burn road it becomes very well preserved whilst in the next field it approaches perfection.³⁵ The earthwork continues to run in the hollow at the foot of the escarpment of the Whin Sill and is itself commanded slightly from the south. At first the Vallum slopes down considerably from south to north, so that the south lip of the ditch seems higher than the north mound. The Vallum may have been placed thus so that its ditch need not be cut in the boggy and low-lying ground just to the north. The ditch and all three mounds are extraordinarily well preserved. The interval between crossings is approximately 45 yards.

At the commencement of the field the ditch measures 39 feet in width and is the classic example of the "recut" type as far as milecastle 42. The first crossing is visible by gaps in the mounds which as at Limestone Corner only remove the upper half of the mounds. It seems clear that no wheeled traffic was intended to cross over such gaps. The next three crossings are marked by depressions in both mounds. At the fifth crossing however, the depression in the north is clear, but only two notches are visible in the south mound. Here the ditch is 36 feet

wide. At the sixth crossing not even notches exist in the south and the depression in the north is very shallow. The seventh crossing has been used in modern times and is therefore disturbed. Depressions exist in both mounds at No.8, and the ditch is 34 feet wide. Now the earthwork begins to slope down from north to south. Again both depressions are visible at crossing 9 but the tenth has been partially destroyed by the placing of a drinking trough in the middle of the ditch. We have now reached the bottom of the slope and the Military Way can clearly be distinguished approaching the Vallum, then climbing on to the north mound and eventually on to the north berm. After the 11th crossing the ditch becomes shallower and therefore more silted up, though it is still 34 feet wide. The marginal mound continues as large as usual. The 12th crossing is scarcely visible in the south mound, whilst no depression at all exists at No.13 in the south. In either case the gaps are clear but shallow in the north. Crossings 14-19 are again barely markes in the south mound. At crossing 20 the depressions are quite clear in both mounds. The 21st is destroyed by a post-Roman cutting and a few basalt blocks exist on the north berm. By now the north side of the Vallum towers above the south. Two more crossings are apparent before the causeway to milecastle 42.

Cawfields is reached. The milecastle is clear on the edge of the crags to the north and a road seems to swing down from it to the Vallum causeway. The area is depressed and the causeway clear.^{36.}

Beyond the milecastle the ditch is considerably reduced in size and has obviously become accumulated with silt. A measurement shows it to be only 23 feet wide and it remains roughly the same size to the end of the field. Nevertheless, the marginal mound recommences and becomes as large as previously. A crossing may be seen before a modern cart-track cuts across the Vallum in the position of a second. Before the third is reached Cawfields quarry has begun to eat away the north mound. Five more crossings are distinguishable before a road is reached and heaps of whinstone chippings cover the Vallum entirely.

Special notice ought to be taken of the small gaps in the south mound in the Cawfields sector. Clearly the crossings system has not been adequately completed. Clearly too the material obtained from the cutting of such gaps can never have been great. Therefore, if such material was thrown into the ditch (the most widespread method of disposal) the crossings could never have been large. A careful surface examination of the ditch in this area suggests that ~~the~~ very faint fillings still remain

in the ditch at the crossings though these may only be the result of an optical illusion. At all events, if the material was thrown back into the ditch it would be too little to warrant a full-scale removal of crossings at some later date. But another interesting point emerged from Mr. Simpson's survey⁵⁷ of the area already noted in connection with Limestone Corner. Quite frequently the material from the south mound seems to have been pushed southwards and spread outside to form a sloping approach. One wonders then whether there would be any surplus material which would need to be disposed of in the ditch. How common the practice of "approaches" was is not known, and a further surface survey of the Vallum with a view to discovering the extent of the practice would indeed be valuable.

West of Haltwhistle Burn the Vallum reappears as a mere depression and at the first field wall the mounds faintly reappear. Faint traces of crossings are distinguishable though the Vallum is by no means distinct until the pasture east of Great Chesters fort is reached. Here five crossings are distinct, the first three with obvious ditch fillings. No marginal mound exists and the ditch is a mere depression. The Vallum is here well to the south of the Wall and skirts the tail of the whin

escarpment as is customary. It soon becomes overlooked by a hill to the south along which runs the Stanegate which has gradually been converging upon the Vallum until it comes almost into contact at Carvoran. Now the accommodation road to Great Chesters farm is reached which was found in 1951³⁸ to overl~~ie~~ an original causeway providing access from the south through the Vallum to the fort sited on a low plateau to the north. As at Housesteads the Vallum did not need to diverge to avoid contact with the fort. Now a field wall runs along the silted-up ditch, and although four crossings may be counted before the next field is reached, they are only visible in the mounds and not in the ditch. Therefore is is impossible to say whether a causeway exists corresponding to milecastle 43 which lies beneath Great Chesters fort. All existing milecastle causeways which have been investigated are secondary, but since milecastle 43 was destroyed before it could function it would be illogical to expect a secondary causeway here. Nor is an original milecastle causeway likely to exist, since the Vallum is ostensibly no earlier in construction than the fort which obliterates the milecastle.

The Vallum now runs south of Cockmount Hill, where the difference between the Broad and Narrow Wall was

first noted. A large peat-moss lies between the Vallum and the hill already mentioned to the south. The earthwork is not impressive here, but Mr. Simpson drew attention to a series of complete crossings subsequently undisturbed.³⁹ As has been shown, the continued existence of crossings in the ditch is by no means so infrequent as has hitherto been imagined. Here twelve may be seen approximately 50 yards apart. The course of the south mound is taken by an accommodation road to Walltown and thus the gaps are not so plain as in the north. The abrupt impression of the causeways has been greatly impaired by the laying of a tile-drain down the middle of the ditch. It was here that the nature of a crossing was first investigated and the "standard" section of the Vallum established. Mr. Simpson noted that some material from the gaps has been spread outside the Vallum to form approaches. The marginal mound, no trace of which is visible from Haltwhistle Burn, reappears at the last crossing before the field wall is reached. There is no sudden change in the width of the ditch, which is here approximately 20 feet. Entering the next field the marginal mound continues. Approaching the first crossing however a marginal mound appears on the north lip of the

ditch too and continues for the width of a pronounced gap in the north mound. Slight traces of a crossing exist in the ditch, which is here 25 feet wide. Now the Vallum begins to deteriorate and is soon completely overshadowed by Blakehaw to the south, beyond which Bargie bog continues. Soon even the ditch peters out in the hollow though it can be traced by occasional clumps of rushes to the far end of the field. On the Whin Sill to the north is milecastle 44 just east of Allode Farm. The milecastle causeway is not distinguishable.

Now Blakelaw ceases and the bog is clearly visible on the south, but the course of the Vallum is extremely vague as far as Lowtown Farm. In a field immediately west of the farm is a very fine stretch of Vallum. It slopes considerably from north to south, and its ditch is finely preserved in living rock. It is 25 feet wide across the top. The north mound is high to the south whilst the south mound appears to be continuous. Three clear crossings are visible in the ditch. Nevertheless a marginal mound exists on the south lip. All three mounds are composed largely of stones. At the third crossing the Vallum is 21 feet wide. The western field wall runs along a fourth crossing. Now the Vallum passes into a plantation still sloping down from the north.

The marginal mound is quite large. Soon the ditch and north mound reappear in a field to the north, three gaps being visible in the north mound. Again it disappears into the plantation where its course is rather obscured by dense trees and shrubs with an occasional clearing when the ditch and mounds present a pretty picture of bluebells, primroses and mosses. Despite the undergrowth the Vallum is finely preserved. The ditch is rock-cut in places, the marginal mound huge. That the crossings system has existed is clear, but the tangled undergrowth conceals any causeways which may exist in the ditch. At one point the south mound seems to merge with a hill to the south, but reappears beyond it. Somewhere in this picturesque glade of nature lies the causeway opposite milecastle 45, Walltown which, invisible from the Vallum, lies on the equally picturesque crags of the Nine Nicks of Thirlwall.

The Vallum emerges boldly from the wood only to be consumed by the stark reality of Greenhead Quarry. Looking back the excellent stretch of Vallum at Cawfields is clearly visible. The Vallum may next be clearly distinguished in a field north of Carvoran Farm. It has now forced its way through the Whin Sill which disappears before the Tippalt Burn is reached. Now the

Vallum makes a northward angular diversion ostensibly to avoid the boggy area of Carvoran Moss, so that it comes into contact with the Wall. Carvoran fort lies asymmetrically within this diversion to the south. The six complete crossings noted in the Vallum by Mr. Simpson are still visible, though the abrupt impression of the earthwork has been considerably softened by the filling of the ditch with quarry material. Thus the Vallum reaches the next pasture where the first crossing is in the position of the causeway opposite milecastle 46, Carvoran.

The Vallum twists back to its normal east-west position before it descends the steep slope into the Tippalt. Crossings may be detected in the mounds until the earthwork peters out in the flat ground approaching the Tippalt Burn. Thirlwall Castle lies to the north and is composed largely of Roman stones. West of the burn the faint lines of the Vallum ditch may be detected leading to the railway. But nothing is clear until the Gilsland road is crossed. Near the road a large sycamore stands in the ditch, whilst a line of rushes shows the ditch ascending the slope. A field wall runs along the north mound, but the south mound begins to show itself. At the first crossing on the ascent the ditch filling

is clear, and now the north mound recommences. Two further crossings are clear before the brow of the hill is reached and the Vallum curves slightly southwards.

MBERLAND
XIII.
5+9.

Now the Vallum commands a good view to the north where the Wall ditch is seen. Three more crossings are passed. The seventh has been cut through by a stream. At the eighth a marginal mound seems to recommence whilst the ditch is dense with rushes. Another crossing is visible before the next field wall. This is the area where Mr. Simpson noted gaps at regular intervals of 45 yards. An unusual feature was also noted:- that the material from the gaps had been spread outside the Vallum and left lying about in small heaps just as if it was thrown with a shovel from the mound. The exact position of this state of affairs could not be discovered by the writer. In the next field the ditch, berms, and two mounds are finely preserved for a short distance. Five crossing positions are marked in the mounds. Passing into the next field the Vallum deteriorates rapidly and its line is very vague throughout the next three fields as far as Chapel House. East of the farm is milecastle 47 but the Vallum is too badly preserved to show the position of a milecastle causeway.

In the lane west of the farm the ditch reappears as a muddy, hoof-trodden area and by a mass of stones. In the next meadow its line is clearer and the field walls begin to betray its contour. Both mounds become distinguishable in the succeeding meadow and four crossings are shown by ditch fillings before the hill top is reached. Here the position of the Vallum commands the north and overlooks the line of the Wall. The course of the Vallum is plain but not of any great interest, passing to the south of a group of houses, across a road, south of four red houses separating the Vallum from the Wall, as far as Poltross Burn. The ditch is quite distinct to approximately halfway down the east slope of the burn. Here excavation proved the ditch sides to have been revetted in stone. On the Cumberland side of Poltross Burn the Vallum is clearly distinguishable ascending the steep slope, and in places a revetment of the ditch slopes appears. The earthwork emerges at the top of the slope very close indeed to milecastle 48, Poltross Burn. It comes so close as to make a north mound a virtual impossibility until the milecastle is passed. The Vallum has here been ploughed so that no milecastle causeway may be detected.

Its line is very indistinct as far as the railway.

Beyond this it crosses the low lying area, its ditch filled with rushes, up to Gilsland Vicarage. The parallelism of the Wall, of which an excellent stretch remains, and the Vallum is here striking. The ditch and north mound are exceedingly fine in the rough ground preceding Gilsland School. This was the site of Professor Haverfield's early sections across the Vallum. Beyond the main Carlisle road the line of the Vallum is easily picked up by a rushy depression. Soon both mounds become plainer as the Vallum comes very close to the Wall, near turret 48a. Then the Vallum becomes fainter and proceeds as a faint depression as far as Willowford farm. Beyond the farm, its course is mere conjecture, though it appears to converge upon the Wall. Thus the River Irthing is reached, where a fine bridge abutment exists which once carried the Wall across the river. The course of the Vallum is so obliterated approaching the river that here there is less hope of discovering its behaviour at rivers than at the North Tyne crossing. Milecastle 49 lies on Harrow's Scar overhanging the Irthing. Haverfield found that the Vallum diverged round the south-west corner of the milecastle apparently before disappearing over the scar. In 1953 however Professor Richmond found that

after diverging, the Vallum ceased abruptly. Thus no milecastle causeway is likely to have existed. Another inference may now be drawn - that the Vallum ended abruptly on the east bank of the Irthing too. Thus unexpectedly valuable light is thrown on the behaviour of the Vallum at rivers, though in the nature of things the ditch could hardly have been taken through the river.

XII. 12. West of milecastle 49 the Vallum runs along the edge of the Irthing escarpment, its course entirely obliterated for two-thirds of a mile. Yet excavation has proved this to be a most interesting sector. Soon Birdoswald fort is reached round which the Vallum diverged. South of the south gate of the fort an original stone revetted causeway had been left. Moreover so little room was left between the fort and the Irthing escarpment that the Vallum north mound has never been constructed. Thus, when the Vallum does reappear, at approximately Stone Wall turret 49b, it has no north mound but instead a south mound of double size. Care must be taken to distinguish it from a new feature, the Turf Wall and its ditch which is not superimposed by its stone counterpart until milecastle 51 is reached. Soon the site not only of Stone Wall milecastle 50, High House is distinguishable⁴⁴ but also of its turf prototype a little

to the south. The Vallum ditch may be seen to diverge quite clearly and sharply round something which was proved by excavation to be Turf Wall milecastle 50. Here the first milecastle causeway was discovered, a secondary replacement of a smaller original one. The Vallum has slowly been diverging from the Turf Wall, so that the north mound is able to recommence on the west side of Turf Wall milecastle 50.

Again the Vallum passes through a sector at once impressive and interesting. At approximately the next fence the Vallum twists quite sharply into a more westerly direction and enters the High House paddock,⁴² commanding a view to the north but not to the south. Mr. Simpson measured the intervals between the crossings as 44 yards and noted that the gaps in the south mound had not always been completed. Here also excavations in 1936-7 proved a patrol-track to have existed along the south berm. Excavations undertaken by the writer⁴³ confirmed this at one point and at another discovered a post-Roman kiln cut into the south mound and berm of the Vallum. In the paddock six crossings are distinguishable. The ditch is considerably silted up and it is not certain whether crossings remain in the ditch. The north mound gaps are usually obvious but the south mound exhibits

mere notched depressions instead of gaps. No marginal mound exists. The system continues excellently into the next field⁴⁴ where eight crossings may be seen. Again the gaps are visible in the north, but only notches in the south or nothing at all. There are faint traces of crossings in the ditch, and no marginal mound exists. Passing through a narrow copse a small mound commences on the north berm. Thus the Vallum enters the next field. Four crossings are passed with only small notches in the south mound before a line of trees stops running along the south side of the Vallum. Two similar crossings occur and then a marginal mound appears, set well back from the south lip of the ditch, and becomes quite large. A mound on the north recommences again. Throughout this field the Vallum ditch is excellently preserved but no clear fillings remain.⁴⁵ Thus we reach Appletree Burn.

Throughout the next field the Vallum mounds are particularly well preserved whilst gorse on the north side makes the Vallum picturesque. The slope of the Vallum has now changed to north to south. No marginal mound nor gaps in the north mound exist. Yet two clear fillings remain in the ditch before an excellent milecastle causeway is reached providing access to milecastle 51, Wallbowers. This is the point when the

Stone Wall takes up its position upon the reduced Turf Wall. A clear view is now obtainable of the Irthing Valley and Nether Denton, the site of a Stanegate fort, to the south, and for the first time the Turf Wall commands the Vallum.

The Vallum is not very plain as it pursues its course below Wallbowers Farm into Coombe Crag Wood whence it emerges in a ploughed field. It was thought that here, for 800 yards the earthwork had been undisturbed by the crossings system. Yet definite depressions may be detected on careful examination. No ditch fillings nor marginal mound exist. Beyond Piper Sike the ditch becomes flatter and so through the next field below cottages on the right. The crossings system continues and south of turret 51b a complete example exists. By now XII. 15 the Vallum is on a considerable slope to the south and gradually its characteristics become less distinct approaching milecastle 52, Bankshead. South of this its course is so obscure as to make a causeway indistinguishable.

The Vallum may next be picked up as it ascends Pike Hill. The south mound is the only prominent feature on a very steep slope from north to south. Four crossings are visible, but no filling was found

in the ditch in 1932.⁴⁹ At one point the ditch and marginal mound become quite obvious, though covered by brambles, wild rose bushes and primroses. Then we descend sharply, the ditch becoming a flattened profusion of rushes and marsh-marigolds, whilst a hedge follows the north mound. Thus it passes faintly through a ploughed field south of Banks East Turret. Its line may be traced through Banks village but nothing noteworthy is seen. The Wall and Vallum here come very close until

XII. 4. the Wall turns sharply away as it descends the slope to Banks Burn. Where the modern road to Lanercost cuts through, the Vallum is very faint indeed but reappears as a ridge descending sharply down to Banks Burn. It is clearly visible ascending the western bank, the ditch followed by a line of trees, whilst both mounds stand high on either side. No marginal mound is present and a crossing is noted before the next field is reached. Here a good crossing exists before a causeway roughly opposite milecastle 53 which is on Harehill to the north. The gaps are clear, the berms depressed and the causeway intact.

West of the causeway the marginal mound reappears strikingly before entering a wood throughout which the Vallum is in good condition and charmingly overgrown

with shrubs, bluebells and wood anemones. At least two crossings exist in the ditch although the marginal mound continues. Here in 1903 the ditch⁴⁷ was found to be 26-27 feet wide, and the north and south mounds to be composed of red clay. The marginal mound was "no such bank" but merely a thin layer of mixed earth hardly more than 4 feet long.⁴⁸ Then the ditch is obliterated and shortly the Vallum emerges into a field. Now Lanercost Priory may be seen peeping through the trees on the south. A modern crossing is passed before the next field is reached where the north mound stands high with trees upon it. Four clear crossings complete with ditch fillings may be distinguished. Their gaps are not directly opposite each other but slant from north-east to south-west. As we begin to descend the hill, a pond takes over the Vallum ditch, here quite deep. In the next ploughed field, south of Hayton Gate Farm the crossings are not apparent. Again the Vallum enters a wood, a mass of deliciously scented bluebells and wood anemones in spring. Here the north mound grows enormous, whilst a channel runs down the centre of the well-preserved ditch. No crossings may be detected. Now Randylands farm lies close to the north and west of it is the site of milecastle 54. No milecastle causeway

exists in the ditch, though a modern cutting may have removed it.

XII. 13. The Vallum has now become enormous and no crossings are distinguishable down to Burtholme Beck. The earthwork rapidly deteriorates into a mere line of rushes in the hollow, though it continues to be visible ascending the next slope. A notable stretch of Wall is to be seen only a few yards to the north with its herring-bone core. Through the next ploughed field the Vallum continues with an excellent view in all directions, whilst in the following field four crossings are distinguishable, the fourth with a ditch filling too. Thus it passes below Garthside Turrets. In the next field two complete crossings are visible before the Vallum is obscured by ploughing, when three more crossings are faintly traceable. Now its line becomes extremely faint, though it was determined by excavation in 1900 as far as Walton. Slight traces are visible near Howgill farm, where the ditch was found to be 23 feet wide and 5 feet deep and at Low Wall it was of the same width. No causeway opposite milecastle 55, Low Wall is distinguishable.

In the next field the ditch is faintly traceable gradually approaching the Wall. The modern road cuts

across the ditch, but leaves it again at Dovecote Farm.

The course of the Vallum is lost on either side of the

XI. 16 King Water, but was traced by excavation⁴⁹ almost to Walton village, where it twisted southwards to diverge round Castlesteads fort, situated so impressively above the Cambeck. Milecastle causeway no.56 is therefore hidden from the eye.

XVII. 4. The Vallum may again be discovered on the west of the Cambeck, near Beck Farm. As it approaches Headswood it becomes clear. On the hill it is quite well preserved but so deteriorates that it is only spasmodically

XVII. 3. visible to Newtown. Nearly opposite White Flat the Vallum is again discernible, but the causeway opposite milecastle 58 is lost to view. The modern road crosses over the Vallum to the south and beyond it both Wall and Vallum are in a weak state. In the second field beyond

this point the Wall ditch becomes quite fine and the

XVII. 7. Vallum may be distinguished coming quite close to the Wall north of Hurtleton. In the next field both works twist northwards, and soon a green lane is reached, the Wall ditch quite fine to the north, and the Vallum rather feeble to the south. Nevertheless opposite milecastle 59, Oldwall a depressed area is apparent in the Vallum, betraying the presence of a causeway.

Approaching Oldwall, the Vallum peters out completely, but it reappears close to the Wall just west of the first farm. In a moment the ditch and mounds are clear again and remain visible until an R.A.F. station is reached. Though the Wall ditch is plain as far as the **XVII.6.** site of milecastle 60, High Strand, the line of the Vallum is barely distinguishable. Thus Bleatarn is reached where the Wall runs a little to the north of the farm, the Vallum to the south of it, whilst a large mound lies between the Vallum and the Wall. The Vallum does not become clear until the western edge of the field is reached. For a short distance the ditch, the two mounds, a south marginal mound and a north marginal mound are clear - an unusual section. Again the Vallum peters out but reappears on White Moss. Here the ditch is shallow but is accentuated by a mound on either lip, but the normal north and south mounds are also present. Another example of a four-mound section therefore exists. No signs of crossings are visible. Milecastle causeway no. 61 has not been located.

West of Wallhead Farm the Wall ditch may be seen to the right of the road, the Vallum to the left. The **XVII.5.** latter is clear throughout the following two fields but then becomes obscure through two more fields. It then

reappears for a short distance and can only be traced by

xvii. 9. archaeological faith as far as Walby. The causeway

opposite milecastle 62, Walby East cannot be detected.

The Vallum faintly re-emerges beyond a farm and is visible

as a mere depression as far as Wallfoot where the

Wall approaches it closely. Neither milecastle 63,

Walby West nor its causeway were located.

xvi. 12. Now the Vallum becomes a more obvious depression

as it passes through Brunstock Park where in 1894

excavation was undertaken. Thus it gradually converges

xvi. 16 on the main road into Carlisle and faintly approaches

Drawdykes Castle. Neither milecastle 64 nor its

Vallum causeway are distinguishable. Beyond the castle

the Vallum becomes very well preserved and is clear just

to the south of the modern road. Hadrian's Army Camp to

the north obliterates the line of the Wall. Both mounds

of the Vallum and the ditch are finely preserved but

neither crossings nor marginal mound exist. The

ditch flattens out to run beneath two semi-detached

houses whence it emerges faintly in the next ploughed

field. By the Nearboot Inn the modern road crosses to

the south of the Vallum. The line of the Wall has now

emerged from the Army Camp and is marked by a broad

footpath from Tarraby to Stanwix. The Vallum, meanwhile,

is faintly traceable to the south and passes through

XXIII.3. Knowefield Nurseries and enters the garden of Home Acres.

The Vallum has been traced to a point just short of the south-east corner of Stanwix Fort. Excavations in 1933 and 4 discovered the ditch making a sharp turn just south of the south-west corner of the fort, suggesting that it had originally diverged round the fort as at Benwell. The diversion and causeway may have been eroded by the River Eden in Rickerby Park to the south. Beyond the fort the Vallum bends sharply westwards to run parallel with the Wall to cross the Eden some distance to the west. The sites of milecastles 66, Stanwix Bank and 67, Stainton and their causeways are lost.

XXIII. 2. The Vallum is not distinguishable until the engine sheds near Newtown are reached. The Wall and Vallum are close together now on the south bank of the Eden. For a short distance on Davidson's Banks the Vallum is in a good state of preservation. The crossings system is also clear. Nine crossings are distinguishable at 45 yard intervals and practically all are complete with ditch fillings. No marginal mound exists. Thus the Vallum proceeds beneath a row of pylons, rounding a bend in the river. Here the Wall ditch becomes plain and the Wall and Vallum very close together, the latter commanding the former. Now the railway cuts across the

Vallum and then returns to its normal position roughly south of milecastle 68, Boomby Gill, the exact site of which is not known. The Vallum and Wall part company, the Wall to take a circuitous route to Grinsdale along the river bank, the Vallum aiming directly for Kirkandrews.

XVI. 14. The Vallum is quite clear up to a cross-road to Grinsdale, its ditch being obvious in the road itself. In the following two fields it is barely distinguishable though in the next ploughed field its ditch is quite plain. Thence it is visible as far as Millbeck Farm. Now the Vallum crosses a small beck and is seen ascending a slight slope. At the top of this both the ditch and mounds are quite high as the modern road begins **xvi. 13.** to cover the south mound. Thus the earthwork reaches Kirkandrews. Beyond the Post Office the road follows the line of the ditch whilst both mounds are faintly discernible in gardens on either side. Beyond the village the Vallum approaches the road whilst the Wall branches off towards Beaumont to the north. Neither the milecastles 69, 70, 71 nor their corresponding causeways have been located. The Vallum is distinct on the south of the modern road as far as Monkshill, though no crossing can be distinguished. Beyond the houses the Vallum crosses beneath the road, and travels

quite plainly through a small wood, Then the earthwork is quite well preserved as it ascends a slope towards White House though cultivation ridges across it have destroyed any signs of crossings. At ^Womanby the

- XV. 16. railway crosses over the line of the Vallum, which then is visible as a shallow depression in the field to the north, before it fades away just short of the site of the fort of Burgh-by-Sands. No diversion of the
- XV. 12. Vallum round the fort has been discovered, though one may have existed.

The Vallum has been traced from behind the Greyhound Inn to the west end of the village. Beyond the road end to Great Orton, its line becomes apparent just north of the road. An octagonal house interrupts

XV. 11. its course but it is traceable as far as Dykesfield. This farm is on the ditch, whilst the south mound is clear in the garden. The Vallum emerges from the farmyard, quite plain at the commencement of Burgh Marsh. For a short distance it resumes a preservation equal to areas in Northumberland and unusual in the cultivated sector west of the Red Rock Fault. The ditch is a thick line of rushes, both mounds most distinct, whilst three crossings are plainly visible, complete with ditch fillings. A small dyke crosses the Vallum at the position

of a further crossing, and after a few more yards the
XV. 10. Vallum ceases abruptly. For $2\frac{1}{2}$ miles the Wall, its
 milecastles and turrets, and the Vallum are all lost
 from view. Milecastles 72 to 76 are no longer
 identifiable on the surface. But what the area loses in
 archaeological interest it gains in aesthetic appeal.
 Beyond the flat stretches of Burgh Marsh, the sands and
 tides of the Solway may be seen framed in a background
 of Dumfriesshire hills crowned by the flat-topped
 Birrenswark - a truly magnificent view.

At Drumburgh village the Wall emerges from the
 marsh. A small fort is here sited on a low hill
 overlooking the Solway. Its relationship to the Vallum
XV. 9. is not known since the latter is not visible until
 west of Drumburgh School. The Vallum was proved in
 1945⁵⁰ to run down the hill towards the school, parallel
 to the Wall, and then to turn northwards. Now the
 earthwork may be identified with a deep drain proceeding
 towards Glasson. West of Glasson⁵¹ it is visible on the
 north of the accommodation road to Kirkland. Little trace
XV. 5. remains in fields nos. 1562, 1560, 1679, 1691. It can,
 however, be faintly traced in fields nos. 1692, 1697
 to the right of the road. In field no. 1697 the ditch
 and north mound are especially apparent. Now the Wall

ditch, which has been visible throughout this area, approaches the Vallum. In field no.1753 even crossings are faintly discernible, whilst in no.1751 the Wall comes almost into contact with the Vallum. Then the latter pursues a direct course through no.1950 and into 1741 immediately behind Kirkland house. Here the site of milecastle 78 was identified in 1934. Sections were cut across the "reed-filled depression" of the Vallum revealing the "typical flat-bottomed ditch and turf-kerbed mounds of normal proportions."⁵²

The Vallum proceeds directly behind the houses of Port Carlisle to milecastle 79, Solway through fields nos. 1736, 1770, 1771 to 1362. Again it becomes faintly visible a little to the south of the

- XIV. 8.** Wall, disappears for a short time and eventually reappears in field no. 1286 just north of Acre^{mire} Lane. This is the last point at which the great earthwork
- XIV. 4.** may be seen, but the ditch has been traced as far as Jeffrey Croft where it turns sharply southwards and reaches Acre^{mire} Lane.⁵³ Nothing more is known of its course and thus its relationship to the final fort of the Wall, Bowness-on-Solway, and its method of termination are unsolved riddles.

C. RIVER CROSSINGS

So far no reference has been made to the problem of whether or how the Vallum crossed streams and rivers. The crossings of the Wall over rivers have been well-known for some considerable time. It was quite by chance that the Vallum crossing of the Poltross Burn dividing Northumberland and Cumberland was discovered. In 1886 the Cumberland Excavation Committee as a newly formed group directed its attention to the Military Way and Stanegate in that area in preparation for the Pilgrimage in that year. Some stone revetment was uncovered which was believed to be a cutting for the Military Way to facilitate its crossing of the Burn. The true interpretation of the revetment was not realised until 1908-10¹. A study of the frontier works in that area made it plain that it was a reinforcement of the sides of the Vallum ditch. Since that time little thought has been directed to the problem in general. But with the discovery of a patrol-track and sporadic light-metalling elsewhere, it seemed reasonable to suppose that a bridge of some kind may have linked such tracks from one river bank to the other. With a view to discovering whether or how such a track or road descended the often steep ravines at streams or rivers, Mr. Simpson in 1950² picked up his tools once more to tackle the problem at Knag Burn. The results were indeterminate. Finally in June 1951³ the writer attempted to solve the problem at the North Tyne crossing. Here the bridge abutment of the Wall has been

left high and dry by the changing of the river course. It seemed likely that here, if anywhere, any remains which may have existed or survived of a bridge crossing the Vallum would be discovered. Results here too were ambiguous.

i. Poltross Burn⁴.

The object of the excavations of 1910 was to ascertain the gradient of the bottom of the ditch, and to clear the revetment walls at the west bank completely. The report is here quoted in full:-

"The retaining walls are 12 feet apart at the bottom. The remains of the south wall show 14 courses of squared stones very similar to the facing stones of the Great Wall. The face of the lower six courses is curved. The upper courses no doubt formed a straight face along the ditch, but the remaining stones turn outwards, meeting the rock face at about 60 degrees. There is a distinct rubble core behind the face at the outer end. There are no signs of lime-mortar in the face or core. The north wall is almost entirely destroyed. Only 6 stones remain in position, of which 5, representing 5 courses, abut upon the rock which forms the side of the ditch above. There is no core behind this fragment.

The solid rock ends 6 feet east of section A, beyond which the bottom has been made of stone pitching for 3 feet. The object of the whole work appears to have been to carry forward the ditch to the edge of the stream artificially, beyond the position where the steep banks could have formed the sides and bottom naturally.

Higher up the slope some very rough walling was found in the ditch near the south side. The west end is curved. At 25 feet from the end it turns 7 degrees southward and continues for about 37 feet down the slope. It may represent a later repairing of the ditch, the south side of which may have collapsed."

What happened to the mounds and berms at this point was left undetermined. Surface observation suggests that the

mounds are obliterated, but there is no reason to suppose that the mounds did not accompany the ditch down the steep sides. The simplest explanation of the structure is that the ditch was carried as near as humanly possible to the bottom of the slopes of the burn. The sides naturally would need to be revetted. Whether the ditch reached the bottom of the river bed is uncertain. At the top of the west bank, the Vallum is so close to the mile-castle that it would not be surprising to find that the north mound had been omitted.

ii Knag Burn

The Knag Burn forms a deep, steep ravine in the vicinity of the Vallum crossing. The Vallum may be traced clearly to approximately half-way down the eastern precipitous slope. It would seem to cross obliquely over the burn, and may be detected as a slight depression running up the western bank, fading to apparent non-existence as it approaches Housesteads. Mr. Simpson trenched approximately half-way down the steep eastern bank and uncovered in part the sides of the ditch. It seems clear that no revetment existed here as at Poltross Burn, though on the southern slope a crude stone structure appeared which bore little resemblance to anything but a mass of stones. Here too the only clear component of the Vallum is the ditch. The mounds seem to have disappeared, understandably too considering the gradient of the ravine slopes. Because of the extremely difficult working conditions, excavation was discontinued before attempting to discover whether metalling or steps existed on the south berm.

iii Chesters Bridge Abutment

The abutment of the Wall has been left high and dry on the eastern bank of the North Tyne, because of the changing of the river-course.⁵ It seemed reasonable to suppose that here too any bridge which may have linked the patrol-track or road of the south berm between the two river banks, might be preserved in a similar way. The crossing of the North Tyne is a much better place to investigate the problem of the crossing of the river or at least the behaviour of the Vallum in the neighbourhood of rivers, than is the Irthing⁶ where the course of the Vallum is most indistinct west of Willowford farm, and can indeed only be traced by the "eye of archaeological faith". At Chesters its depression is clear passing obliquely beneath the railway line. Roughly half-way between the lines and the apparent old river course, the ditch is interrupted or blocked by filling of some kind. The old river bed seems distinct enough, and is bordered roughly by a row of stunted trees well to the east of the present east bank. Its bed swerves still further eastwards in the field to the south, and here there is no visible trace of the south mound. A modern fence dividing field no. 3109 in two runs approximately along the course of the Vallum ditch. At the gate of this fence, the Vallum ditch ought, if it pursues a direct line, to lie approximately

half and half on either side of the fence.

The Excavations ⁷

The first three trenches succeeded in locating what was thought to be the south lip of the Vallum ditch, making an unusual curve northwards towards the Wall. But parallel trenches failed to discover the north lip of the Vallum ditch, although its position had been determined up the slope a little east of the line of the old river bank. At that point the south lip could not be found, but superimposed layers of silt and gravel, a fragment of medieval pottery, and a general lack of a clear, undisturbed subsoil suggested that later disturbances had removed the south lip of the ditch. No sense could be made of the excavations. If what was thought to be the southern lip of the Vallum did in fact belong, it seems quite certain that not only the north lip and mound, but also the ditch itself has been washed away either by river action or by the rush of water down the Vallum ditch. No signs of a Vallum bridge abutment were discovered and the trial excavation suggests that little of such a structure is now likely to remain if one had ever existed.

iv General Conclusions

The lack of success in finding how the Vallum crossed over or ended at the North Tyne seems ominous for future investigation of the problem. Of the three rivers which flow through the course of the Wall and Vallum the North Tyne seemed the most promising. Excavation yielded ambiguous results, but future excavation tackled on a slightly different plan may well be successful. But it seems extremely doubtful whether any more information will be gleaned concerning the problem. At burns and streams the situation may have been completely different from that at rivers, and in every case the crucial point on the Vallum has been swept away by landslip or erosion. A list of the main rivers and burns from east to west would not perhaps be out of place:

Denton Burn (the line of the Vallum has completely gone); Walbottle Dene (on the West side the Vallum ditch is clearly visible from roughly half-way up the slope which is here very steep and deep); Fernie Dene near Halton; North Tyne; the Coesike; Knag Burn; Bradley Burn (a field-wall and accommodation road hide the essential point); Haltwhistle Burn (gone because of quarrying); Tipalt Burn; Poltross Burn; Irthing; Appletree Burn (obliterated by modern accommodation road); Banks Burn; King Water; Cambeck; Eden. In practically every case the course of the Vallum is either most indistinct in the vicinity, or

completely obliterated by later structures or erosion.

Walbottle Dene may repay examination but it seems unlikely that information additional to that from Poltross Burn will be gained.

The forces of time and nature appear to defy any attempt to extract this secret from the Vallum's course.

PART III

THE VALLUM AND THE WALL

A. THE VALLUM AND THE WALL FORTS

After determining the character, composition and contemporaneity of the Vallum ditch and mounds, Professor Haverfield realised clearly that the assumed belief in the synchronism of the construction of both Wall and Vallum could only be vindicated or refuted by the excavation of the earthwork in the vicinity of forts. The current belief concerning the relationship of Wall, Wall forts and Vallum was summarised by Bruce thus:¹

"The Wall, when it does not fall in with the northern wall of a station, usually comes up to the northern cheek of its eastern and western gateways. The Vallum, in like manner usually approaches close to the southern wall of the station, or comes up to the defence of the southern side of the eastern and western portals. At least three of the stations, it must, however, be observed, are quite detached from both lines of fortification, being situated to the south of them. They probably belonged to Agricola's series of forts."

In his excellent survey of the fortifications,² MacLauchlan shows the Vallum running up to the south rampart of a number of forts. In the 19th century, just as it is today, the course of the Vallum was completely obliterated in the neighbourhood of forts. It was then quite natural to conclude that a joining together in a straight line of the known course of the earthwork on either side of a fort would represent the original line. Such a line usually coincided with the south rampart of the fort. But at Carrawburgh and Birdoswald such a line proceeded beneath the fort area, suggesting that the two forts obliterated

the course of the Vallum. A thorough appreciation of this apparent inconsistency, and of the necessity of excavation, prompted Haverfield to commence work at the forts of Carrawburgh and Birdoswald in 1896³. In 1897⁴ the discovery of the ditch of the Turf Wall running through the fort at Birdoswald added considerably to the complications of the site. In 1897⁵ too the course of the Vallum was investigated at Halton and Rudchester; in 1898⁶ Castlesteads was added to the list, and work continued there until 1903; in 1900⁷ and 1903⁸ attention was turned to Chesters fort. His work at each individual fort will be considered in greater detail below. Already in 1897 the complexity of the mural problem had been demonstrated and the lines on which further research ought to proceed. Haverfield states:⁹

"It is quite conceivable that a Turf Wall existed from sea to sea before the Stone Wall was built, and that at Birdoswald the line was thrust slightly northward to obtain room for a fort between the Stone Wall and cliff: this seems the most likely reason, but others are fairly possible. It is further possible that a smaller earthen fort stood on the site at Amboglanna and similar forts elsewhere, and that the Vallum was built when the Turf Wall and (hypothetical) earthen forts were built. This theory would explain to some extent the line of the Vallum close to the forts, and in particular the strange manner in which it grazes the south-west corner of Birdoswald."

A statement in 1922¹⁰ by Mr. F. G. Simpson on the complex problem illustrates the progress of knowledge since Haverfield's day. The ghost of a Turf Wall from sea to sea had been summarily dismissed by excavations at Poltross Burn milecastle.¹¹ But the phantom-like Turf Wall forts had transformed into

equally hypothetical Vallum forts. The Wall sequence might have been summarised by Mr. Simpson thus: 1. The Vallum deviating round its own Vallum forts constructed in the early years of Hadrian: 2. Larger forts built in stone: 3. The Stone Wall connecting the new enlarged forts - the two latter modifications dateable to the later years of Hadrian's reign. This theory appeared to be confirmed by the discovery of original causeways across the Vallum ditch.¹² Investigations in the Turf Wall area from 1928-1936¹³ proved conclusively that the Turf Wall had existed from the Irthing to the Solway, furnished with its own milecastles and turrets; whilst excavations in Northumberland had demonstrated a modification of the Broad Stone Wall scheme, in the shape of a reduction in gauge. By 1933 it had become evident in consequence of the tremendous progress of research that the Simpson Wall sequence and Vallum date were no longer tenable. Mr. Birley in that year, in an excellent interim resume,¹⁴ assimilated the results obtained by the spade since 1922 and integrated them into a new hypothesis concerning the date of the construction of the Vallum. His interpretation of relevant literary and ceramic evidence gave most compelling reasons in favour of a Trajanic date. This hypothesis, extremely probable and attractive at the time, was founded on an implicit faith in Vallum forts though the true relationship of Broad Wall, Stone Forts, Narrow Wall and secondary forts was realised. At last in 1936¹⁵ the simple discovery that no north mound of the Vallum had ever existed

east of High House milecastle 50 - the key to the mural problem - effectively demolished the delusion concerning Vallum forts, and made possible the correct interpretation of the sequence of the numerous modifications in the construction of the Roman Wall. This sequence is outlined below,¹⁶ but a summary of the evidence of the relationship between Wall, Wall forts and Vallum must first be given.

The Notitia Dignitatum,¹⁷ the Rudge Cup,¹⁸ and surviving structures give a total of seventeen forts usually associated with the Wall: WALLSEND (Segedunum); NEWCASTLE (Pons Aelii); BENWELL (Condercum); RUDCHESTER (Vindobala); HALTON (Hunnum); CHESTERS (Cilurnum); CARRAWBURGH (Procolitia); HOUSESTEADS (Borcovicum); CHESTERHOLM (Vindolanda¹⁹); GREAT CHESTERS (Aesica); CARVORAN (Magna); BIRDOSWALD (Camboglanna); CASTLESTEADS (Uxellodunum); STANWIX (Petriana); BURGH-BY-SANDS (Aballava); DRUMBURGH (Congavata); BOWNESS-ON-SOLWAY (Maia).

WALLSEND. Horsley's testimony that:

"there is not in all the space between Cousins House and Newcastle the least vestige or appearance of Hadrian's Vallum or anything belonging to it,"

has been confirmed by recent research. Wallsend fort has thus no direct connection with the Vallum. The fort was proved in 1929¹⁹ to be of one build with the Wall (which joins the fort at the west gateway) which, east of Newcastle, is built to the Narrow Wall gauge, set upon Narrow Foundations. It is a small fort of 4 acres, with 4 gateways, and it is obviously secondary in construction.

NEWCASTLE. The Vallum has not been traced further east than Elswick Row, that is, close to the site of milecastle 5.

Excavations in 1929 yielded clear evidence that it did not continue to the east of this point. It does not appear then to have any direct relationship to the fort at Newcastle, the site of which was only discovered in 1929.²⁰ "Positive and negative evidence suggests a small fort, occupying a level spur some 2 acres in extent, with a steep fall to south, east and north."²¹

The only certainty that can be expressed concerning the date of this fort is that it existed by the time the Notitia section "per lineam valli" was written, whenever that was. The fort must have taken its name from a bridge established over the Tyne in Hadrian's reign. There is no evidence to suggest that this fort was originally constructed by Hadrian.

BENWELL. In 1929²² the North of England Excavation Committee was able to trace the course of the Vallum from the east side of the fort to the south, proving the existence of a diversion. In 1932 the discovery of a stone-revetted original causeway at BIRDOSWALD²³ led the committee to search for and discover a similar causeway at BENWELL in the same year, 90 feet west of the most westerly section of 1929.²⁴ In 1933 the excavation of the causeway was undertaken.²⁵ Since that date, the site at the foot of Denhill Park Avenue has been preserved by the Ministry of Works, and is the only stretch of the Vallum cut to its original line. A reproduction of the diagram given in the 1933 report,²⁶ as well as photographs, are appended, making a detailed description unnecessary. The report is quoted in full:²⁷

"In the first place when the Vallum ditch was dug, it was interrupted to leave a causeway 21 feet wide across it; the straight sides of the causeway were revetted with small-scale ashlar, much better dressed than in the wing-walls of the Birdoswald structure, but without the central panel of heavy masonry. As at Birdoswald, the core of the masonry was undisturbed boulder-clay. Resting on the west revetment, exactly over the centre-line of the ditch, was the massive masonry of a gateway; on the east side the corresponding masonry had all been taken away, but a gap in the metalling of the road showed whence it has been removed. The gate passage had been 12 feet wide closed by a pair of gates held in pivot-holes of normal type, and opening to the north; in the latest surviving level a central gate-stop was provided, and no doubt a similar provision had been made from the first; there was no evidence for a crowning mould on the sides of the revetment such as that noted at Birdoswald, but in this case also there had been no parapet. It will be seen that both in plan and in the structural details of the gateway Benwell is rather simpler than Birdoswald; both crossings contrast markedly with that subsequently discovered at Housesteads. The following measurements may be recorded: length 17 feet 6 inches; breadth 21 feet; depth at centre 10 feet. Two special features remain to be noticed; in the first place, at this point, the north lip of the Vallum ditch is considerably higher than the south since the earthwork is travelling along a southward slope; in consequence the causeway is rising from south to north, and there is an extra course of masonry at the north end. Since the Vallum ditch is dug in boulder-clay, its bottom is level; the sides are very steep, and our experience is that in default of a ladder, assistance is needed to enable one to get out of the ditch again, once one has fallen in. The other point is also concerned with the contours of the ground; there is a drain through the causeway at the south end 4 feet up from ditch bottom; the drain is 36 inches high and 10 wide. Its purpose is clearly to prevent an excessive accumulation of stagnant water on the west side of the causeway; for some hundred yards the line of the Vallum has been falling slightly but steadily from the west, and but for the provision of such a drain an excessive accumulation of stagnant water might have formed on the west side. Why the drain was not carried through at ditch bottom is not immediately apparent; it is conceivable that its insertion is an afterthought, in the light of experience gained during the formation of the Vallum, when the causeway had been begun but not finished, and it was impracticable to put the drain in lower. At first the roadway was very lightly metalled."

No comment is necessary except perhaps that if the drain had been put lower down the ditch it would have soon become blocked with silt accumulation.

The writers of the 1933 report in addition re-interpreted a reference in the N.C.H.²⁸ to a cutting in the rock 14 feet wide at the surface, 11 feet deep, and 9 feet wide at the bottom, running north and south, found when Pendower House was under construction. An accurate plan is extant and:

"it clearly represents the ditch of the Vallum - narrower than usual because it is cut in the rock - bearing northwards again after passing the fort site."

In 1937²⁹ the western arm of the Vallum diversion was followed in the grounds of Pendower House. The ditch had been filled up in Roman times with blocks of clay and turf, and buildings had been erected over it. It was some 16 feet wide and 10 feet deep. The course of the Vallum diversion was thus completely traced. Benwell fort covers an area of 5.64 acres.³⁰ It was a large fort with 4 main gateways and 2 posterns. Its northern third, covered completely by the high-level reservoir of the Newcastle and Gateshead Water Company, projected over the line of the Wall. It is likely that Broad Wall foundations and a filled-in Wall ditch await discovery below the fort, but the position of the modern road and reservoir forbid investigation. The fort lies just west of turret 6a.

Excavations in 1937³¹ revealed in a granary a shattered, large building inscription, the text of which, reproduced below,³²

may be translated:

"For the Emperor Caesar Trajan Hadrian, august, while Platorius Nepos was the Emperor's propraetorian legate, a detachment of the fleet in Britain (erects this)."

This is dateable to the years A.D. 122 - c. 126. The Vallum diversion and original causeway demonstrate that the earthwork is contemporary or later than the fort.

RUDCHESTER. Reference has already been made to the excavations at Rudchester undertaken by Professor Haverfield in 1897. He mentions:³⁴

"the complete lack of surface indications of the Vallum in the immediate vicinity of the fort. But in the field immediately east of the house (Rudchester) a 'slack' is clearly visible and diverges gradually from the Wall as it approaches the fort."

His map is reproduced below,³⁵ illustrating this point and the position of his two trenches, cut across the "slack" in which the familiar 'black matter' betrayed its identity with the Vallum ditch. (N.B. Trench A was filled with stones.) The Vallum would appear to run well to the south of the fort and does not diverge as at Benwell. No original causeway has so far been looked for but it seems likely that any such causeway will lie beneath the farm buildings. A search for it is then out of the question. Immediately west of the farm buildings and wood, which slope considerably to the south, the writer could find no certain trace of the Vallum. Rudchester fort is a large one, with an area of approx. 4.5 acres. Excavations in 1924 proved the existence of 4 main gateways and 2 posterns.

"The Wall joined the fort at its main east gate, leaving rather less than half projecting to the north. There is good reason for thinking that as at Halton, Chesters and Birdoswald, the Wall Ditch had already been dug before the fort was planted here. Haverfield's excavations of 1902 strongly suggested that it passed below the main west gate."³⁶

A precise relationship between the Wall, the fort, and the Vallum at Rudchester cannot be determined but in view of the fort's close similarity to Benwell, it is likely to be related in the same way.

HALTON. Excavations in 1897³⁷ to locate a presumed diversion of the Vallum round the fort were unsuccessful. It was concluded that the earthwork must make a considerable deflection round the fort since a quarter of a mile to the west it is clearly visible 230 feet approx. south of the Wall. The discovery of a diversion similar to that at Benwell is recorded in N.C.H.³⁸ Excavation ceased before the position of a causeway was reached, but they proved that the fort had had an extension added to it at the turn of the 4th century. This 4th century extension is likely to have obliterated in part the westward arm of the Vallum. The diversion is presumably symmetrical.

The fort has an acreage of 4.3. Though slightly smaller than Benwell and Rudchester it is similar in all other respects. Its northern third projects over the Wall which joined the fort at the south towers of the main east/west gateways. The ditch had been dug before the fort was built, and was filled up to accommodate the fort and the northern portals and towers of

the main east/west gateways. The fort is just west of turret 21a. The most striking single find during the 1936 excavations was that of a Hadrianic building-record of the 6th legion mentioning Aulus Platorius Nepos as governor.³⁹ The sequence here is clearly (a) Wall and Wall ditch, (b) Stone Fort, (c) Vallum diverging round the fort and therefore either contemporary or later.

CHESTERS. An attempt to determine the course⁴⁰ of the Vallum at Chesters fort was made in 1903 by Professor Haverfield. If MacLauchlan were correct, then it would coincide with the southern rampart. The Vallum is virtually invisible ascending the western bank of the Tyne. A plan taken from Haverfield's is reproduced below⁴¹ to demonstrate the results. Trench 2 undoubtedly showed the flat-bottomed ditch. Trench 3 is said to have been rather unsatisfactory. Trench 4 found an east/west ditch and a junction with a ditch from the north. It was taken to be the junction of the Vallum with the fort ditch. It is plain that investigations ought to be resumed at this point. The situation described by Haverfield is as unusual as it is unsatisfactory.

Professor Richmond has suggested⁴² that there may be an intimate connection between the road system south of the fort exhibited on air photographs taken by Dr. St. Joseph and the course of the Vallum.⁴³ This is very probable. That such roads were following the course of the Vallum would explain their rather angular course and strange situation. The road running

westwards from the main southern road would take the course of the south berm of the Vallum. The north-east road would take the course of the north mound. Other air photographs⁴⁴ illustrate the same point, though less clearly. One would expect too a causeway of the Benwell type. Perhaps then the air photographs give some indication of the site of such a causeway. Comparison with the air photograph of Housesteads and the known site of the causeway is instructive. At Chesters where the road from the west intersects with the main south road, there is a large blob of white on the photograph. This tells us that the turf at this point conceals an area of stones or buildings. It is on precisely the position where a causeway would be expected. Excavation only may prove the point, but the existence both of a diversion and causeway are strong probabilities. Unfortunately for this reason at least the area south of Chesters fort exhibits an extensive civil settlement, which necessarily postpones excavation of the site until both the settlement and Vallum diversion may be investigated together.

The fort is large, covering an area of 5.75 acres. It has 4 main gateways and 2 posterns. As at Benwell, Rudchester and Halton, the fort projects for about a third of its area over the Wall. It is the Narrow Wall standing on the Broad Foundations and abuts on to the south towers of the main east/west gateways. In 1900⁴⁵ Haverfield had proved a ditch

to underlie the northern guard chambers of the main east/west gateways. In 1945⁴⁶ not only the Broad Foundation of the Wall but also turret 27a were discovered beneath the fort. The sequence is clear: (a) Broad Wall foundations, turret and Wall ditch; (b) Large stone fort; (c) Vallum diverging presumably as at Benwell.

CARRAWBURGH. Bruce and MacLauchlan had noticed that the Vallum at Carrawburgh apparently ran beneath the fort. This was the second fort investigated by Haverfield in 1896.⁴⁷ Attention was first paid to the east side of the fort, where a trench at 85 feet away showed that the Vallum ditch was 28-30 feet across, and was filled with "peaty" material containing fragments of pottery. At 40 feet from the fort the ditch stopped, and a ditch 15 feet wide at the top was found to run southward parallel to the rampart and ditch of the fort. Haverfield wondered if the fort had 2 ditches and the Vallum merely stopped short at the outer one. He concluded that at any rate the Vallum could not be earlier than the fort. In 1897⁴⁸ work was resumed, since the Northumbrian antiquaries were quite unconvinced. Numerous trenches⁴⁹ on the east side soon convinced them, but trenches were also dug inside the fort to make doubly certain that the Vallum had never crossed the fort. Finally trenches on the west side of the fort made the conclusions of 1896 irrevocable. But attention was drawn to a certain point which eventually attracted archaeologists to the same spot in 1934.⁵⁰ It was noted that at the point where the Vallum ditch would

cut the fort Wall, an area, covering 35 feet from north to south, of large stones existed but excavation beyond 6 feet down became dangerous. It became obvious in 1934 that the large stones represented the filling of the Vallum ditch which had originally run straight across the fort, before the fort was constructed. The conclusion that the Vallum is earlier than the fort is incontestable. The fort is small, covering an area of approx. $3\frac{1}{2}$ acres. It has 4 gates. The exact relationship of the fort to the Narrow Wall which here forms its northern rampart is unknown and the modern military road prevents investigation. It is highly probable that its east and west ramparts, like those of a milecastle, joined the Wall at right-angles, suggesting a date contemporaneous or later. It plainly belongs to a second series of forts. The fort is situated 100 yards west of milecastle 31. A fragmentary inscription⁵¹ mentioning the governor Sextus Julius Severus, known to have been in Britain c. A.D. 130-133 attests the date of the construction of the fort.

The sequence here is (a) Broad Wall foundations and Wall ditch; (b) Vallum; (c) Narrow Wall and fort.

HOUSESTEADS. In 1931⁵² five trenches determined the course of the Vallum which is invisible between the Knag Burn almost to Bradley Farm. It was found to continue in a straight line from the point on the east bank of the Burn where it is last visible; its ditch had been dug down into limestone and was found to have been filled in very thoroughly in each of the

trenches dug. The last trench south of the fort underlay one of the terraces, thus showing the terrace to be subsequent at least to the filling in of the Vallum. In 1933,⁵³ in the process of discovering the relative date of the terraces and roadway issuing from the south gate of the fort the roadway at the point of intersection with the Vallum Ditch was found to seal an original causeway. The relevant paragraphs⁵⁴ of the report are here quoted:-

...."in the first place the ditch of the Vallum here also had been cut down into the limestone which formed its sloping bottom and the lower part of the sides; but the ditch had been interrupted to allow for a causeway similar in general type to those at Birdoswald and Benwell, though in its design and construction there were peculiar features: it widens from south to north and since the Vallum ditch is cut in the rock, as normally happens it is narrower than where the subsoil is clay, so that the total length of the causeway (12 feet) is less than in the other two instances ... the masonry of the revetting walls has almost all gone, but what survives (one course on the west, and six on the east) consists of very roughly dressed blocks of limestone set in clay, the contrast between this rough work and the carefully dressed ashlar of the Benwell causeway was very striking.

It is impossible now to say whether in this instance also there had been a gateway, but two considerations suggest that there had not. In the first place, the plan of the causeway itself does not include any obvious place for the erection of such a gateway; furthermore, although the existence of the causeway itself may reasonably be taken as evidence for the contemporary existence of a fort, the fact that the Vallum does not diverge and the contours of the site combine to show that the fort must have been considerably further removed from the crossing here than in the cases of Birdoswald and Benwell; in such a situation an isolated gateway, without quarters for guards, would have been of little use."

Despite the fact that the stone fort at Housesteads had in 1932⁵⁵ been proved to be contemporary with the Wall, and the possibility

realised of what is now known to be true, that this fort is the earliest one on the site, the discovery of yet another causeway was interpreted as confirmation of the prevalent suspicion that an earlier Vallum fort must have existed on the site. The persistence of the belief in these nebulous Vallum forts, first conjured into existence by Haverfield, forbade the correct interpretation of evidence at Housesteads no less than at Birdoswald, viz. that the Vallum cannot be earlier than the fort at Housesteads, because, although it does not diverge, it leaves an uninterrupted causeway of living rock.

The fort is large, with an area of over 5 acres; it has 6 gateways; unlike any fort so far described, the long axis of the fort runs from east to west, because of its position at the very edge of the basalt precipice. The Narrow Wall joins the fort at its northern angles, and is clearly later in construction than the fort since the north-east angle-tower was actually moved from its normal position, to guard the junction of the Narrow Wall and the north rampart further west.⁵⁶ In 1945⁵⁷ Broad Wall foundations and turret 36b were revealed beneath the north rampart and intervallum road.

The sequence here is: (a) Broad Wall foundations and turret 36b; (b) Stone fort; (c) Narrow Wall involving the removal of the north-east angle-tower; (d) the Vallum. The relative date of b, c & d are discussed below.⁵⁸

CHESTERHOLM. This fort is wholly to the south of the Vallum. Structural, ceramic and epigraphic evidence combine to give unmistakable proof that this fort, situated on the Stanegate, was occupied: (a) under Agricola, (b) under Trajan, (c) for the first few years of Hadrian's reign as were the other Stanegate forts,⁵⁹ but abandoned when the Wall forts were completed; when the Vallum was constructed, explicitly excluding Chesterholm from the Wall zone, it is certain that the fort had been abandoned, (d) re-occupied under Calpurnius Agricola,⁶⁰ and henceforth subject to the same periods of occupation and destruction as the Wall forts.

GREAT CHESTERS. Excavation on the Vallum at this fort was not undertaken until the writer commenced work in 1950. Until that date it was known that the Vallum ran considerably to the south of the fort, its course being distinguishable though not distinct on the surface; that a causeway of some kind existed across the Vallum, south of the south gate of the fort, though its precise date and character were moot points.

The fort is small with an area of just 3 acres. It has four gates. Like Housesteads it faces east; like Carrawburgh it lies wholly to the south of the Wall, and does not project. Excavations in 1894⁶¹ and in 1925⁶² (the latter never fully published) proved that the north-west angle-tower was planned with a projection so as to bond with the Narrow Wall. Like Wallsend and Carrawburgh the fort is structurally contemporary with the

Narrow Wall. In this area, the Narrow Wall is wholly to the south of the Broad Wall foundations, instead of running on top of them as usual. In 1939⁶³ this situation was clarified by the discovery of milecastle 43 below the fort. Another peculiar feature must be noted - four ditches were revealed at the north-west of the fort, the butt ends of which were overridden by the Narrow Wall. Outside the east gate a large dedication slab⁶⁴ has been discovered, erected to Hadrian as "pater patriae", a title which he did not receive until A.D. 128. The date of the construction of the fort cannot be earlier than A.D. 128. It has been generally supposed that this fort, like Wallsend and Carrawburgh, being of secondary construction, is later in date than the Vallum - a supposition which has been proved by excavation to be wrong.⁶⁵

CARVORAN. The behaviour of the Vallum at this fort has for a few years been an enigma. It makes a unique diversion to the north of the fort, comparable to those at Benwell and Halton, but in reverse, excluding the fort from the military zone. The existence of a causeway giving access through the Vallum was suggested in 1949.⁶⁶ This question is discussed below together with the results of investigations into the problem made by the writer in 1951.⁶⁷

The fort is small, enclosing some 3.5 acres. It is technically a Stanegate fort, occupied presumably throughout Agricola and Trajanic times, and in the first few years of

Hadrian's reign along with the other Stanegate forts; presumably abandoned when the fighting garrison was removed from the Stanegate line to the Wall and excluded from the Wall zone by the Vallum. Epigraphic evidence⁶⁸ informs us that it was re-occupied in the last two years of Hadrian's reign. It may have continued in occupation throughout the Antonine period but at least from the time of Calpurnius Agricola;⁶⁹ and henceforth following the usual pattern of Wall forts.

BIRDOSWALD. Attention was first paid to the problem of the Vallum and its relationship to Birdoswald fort as early as 1896.⁷⁰ The ditch, absolutely invisible on the surface, was easily traceable by excavation.⁷¹ Its course was straight to within 250 feet of the west wall of the fort, and then diverged in a most spectacular manner round the south-west corner of the fort. That year it was traced to the south-east corner, and further to the north-east in the following year,⁷² twisting back into its normal position just before reaching the Turf Wall. It was an epoch-making discovery. Other factors emerged which have received varying degrees of emphasis since that date. Haverfield stated that no trace of the Vallum mounds had been noted and

"at some points indeed, there was no room for them".

He remarked too that there were indications that the Vallum ditch had been intentionally filled at some early period. The width of the ditch south of the fort "hardly seemed to exceed 10 feet near the bottom."

Haverfield's delusion of the existence of an earlier fort than the existing one, probably contemporary with the Turf Wall, and the structure round which the Vallum diverged persisted in a modified form until 1936. Excavations at Birdoswald, recommenced in 1928, continued until 1933⁷³ though the complexities of the Turf Wall sector in general have continued to occupy minds and hands alike sporadically until the present day. With persistent constancy, search was made in 1927, 1928, 1930-33, for an earlier fort beneath the present one at Birdoswald. In the process the area south of the fort was most systematically excavated, bringing valuable results to light, and buildings and roads within the fort were determined, at first fortuitously and then by plan. In 1931 a layer of clean-puddled clay⁷⁴ immediately within the south rampart, east of the south gateway, was misinterpreted as a rampart, sadly denuded, of the Vallum fort. 1932 saw the remarkable discovery of a stone-revetted causeway⁷⁵ across the Vallum ditch, the first of what was to prove to be a series. A description of this causeway, which may no longer be seen, is necessary since it possessed unique features.

"This novel feature is entirely distinct from the regular system of crossings that destroyed the Vallum as a continuous boundary. It is not, as they are, a causeway filling an already-existing ditch, but it is a solid strip of virgin soil, purposely left in position when the Vallum ditch was first dug: and the vertical butt-ends of the Vallum ditch on either side of it are revetted in masonry ... Each butt-end is turned in three straight lengths of walling, arranged as a flat-bottomed central panel and two slanting wing-walls whose lowest courses follow the slope of the ditch and are built in medium-

sized hammer-dressed ashlar, set in clay and heavily plastered with clay coming round in a fillet from the sides of the ditch. The over-all width of the causeway is 19 feet 6 inches. Behind the central panels are cavities found filled with peat-blocks, leaving a platform of virgin-soil 10 feet 4 inches wide. The original stonework in both panels and cavities was gone. It had been removed, leaving a high straight-joint against the south wing-walls, while the north wing-walls, partly demolished to facilitate the removal, had ragged stepped edges. This systematic removal had been done before the Vallum-ditch was filled up: for the familiar peat-block filling was undisturbed and tightly packed in the gaps whence the masonry had been torn. The central panels of the causeway walls had been robbed, but their discrepantly wide foundations remained. These were large squared blocks, three on the west and two on the east, originally swung into place by a crane with a lewis, and then trimmed in position, the trimming partly obliterating the lewis-holes. On the west side a setting-out line was cut for the exact placing of the superincumbent masonry and was returned to mark the end of the wing-walls. These massive foundations, built apart from the wing-walls, imply large masonry, the foundation of a high erection on the causeway itself A surviving member of the crowning mould from the wing-walls shows that they had no parapet, for it is designed to throw off rain water at ground-level. Two points of immediate significance emerge. The monument, by selecting the Vallum ditch for its position, confirms the view that the ditch was the essential feature. The occurrence of a permanent crossing in a diversion of the Vallum implies a post in that diversion guarding the crossing"

This causeway is strikingly different from those at Benwell, Housesteads and Great Chesters, not only structurally but also historically.⁷⁶

It is interesting to consider at this stage the suggested phases of occupation as outlined in the final excavation report of 1933.⁷⁷ (a) The first phase consisted of a "polygonal stockaded enclosure, with a double ditch, cutting off the high spit south of the stone fort. It enclosed a quadrangular structure which had partly slipped down the south-west edge of the escarpment.

It was clearly intended for signalling to the Stanegate.

(b) Phase II. The construction of the Vallum with its monumental causeway, guarded by an earth fort to the north.

(c) Phase III consisted of wooden shacks obliterating not only phase II but also I. They were considered to belong to the period when the Vallum had been obliterated, and the Stone fort was not yet in being, i.e. to the age of the Turf Wall. Presumably the Vallum fort would serve during the period of the Turf Wall's existence.

(d) Period I. The construction of the present Stone fort, over the filled-in Turf Wall ditch; its ditches cutting both through the Vallum and through the wooden buildings of phase III.

Excavation of the ditch-system at the main east gateway suggested strongly that when the Stone fort was erected, its builders had visualised a Stone Wall passing by to link up with the south tower of the fort's east gateway.⁷⁸

One misinterpreted fact contained the key to the relationship between the existing forts, original Wall (whether Turf or Stone) and the Vallum - the non-existence of the north mound of the Vallum round the fort at Birdoswald. The revelation came in 1936⁷⁹ after two seasons' work on the Turf Wall milecastles from High House to Bankshead. In 1935⁸⁰ the diversion of the Vallum round Turf Wall milecastle 50 suggested that the milecastle and Vallum were contemporary and made a re-interpretation of the diversion at Harrow's Scar⁸¹ essential. It was stated that this

evidence "reverses the whole trend of recent opinion as to the relative priority." In 1936 excavation showed clearly that no north mound had ever existed east of High House milecastle. The correct solution to the complex relationship of Wall and Vallum was self-evident.

Birdoswald fort has an area of 5.33 acres. It resembles Benwell, Rudchester, Halton and Chesters in possessing 4 gateways and 2 posterns. It projects for a third of its area over the Turf Wall just as the above project over the Broad Stone Wall. The Narrow Stone Wall joins the fort at its north-east and north-west corners, instead of following the course of the Turf Wall. In 1945⁸² the Turf Wall and turret 49a were discovered beneath the fort. The sequence may be interpreted thus: (a) Turf Wall and its turret; (b) Stone Fort; (c) Vallum squeezed in round the fort, omitting its north mound; (d) Narrow Wall up to the corners of the fort.

CASTLESTEADS. In Haverfield's time, as indeed in MacLauchlan's, the course of the Vallum near Castlesteads was unknown for a distance of $2\frac{1}{2}$ miles, i.e. from approximately the King Water to Cumrenton. This area first received scientific attention in 1898⁸³ when MacLauchlan's line west of Cambeck was proved to be wrong. From 1900-2 the position was considerably clarified. In 1901⁸⁴ the Vallum was traced to the south-east of the fort, and in 1902⁸⁵ it was proved to diverge round the fort at a distance of approximately 90 yards and then approach the line of the

Wall once more. That the numerous trenches missed the causeway across the ditch is amazing - the existence of one has not yet been proved, but that an original one must have existed there seems to be no reasonable doubt. The description of trenches is quite illuminating. Trench 2 contained a face carved in stone, and potsherds in the "black matter" which must represent the accumulation of silt and rubbish; above that grey material; on top, a layer 30 inches thick, of cobbles. Haverfield thought the latter might represent a recent filling of the ditch when the mansion and garden were constructed. But it may well be a Roman filling, since there are a number of examples of the obliteration of the ditch in the vicinity of forts. One may wonder too whether the cobbles represent a roadway of some kind. From the peat layer of trench 5 came a knife, fragments of wood including one which seemed to be the lower end of a stake, as well as potsherds. Clay and peat filling were recorded in trench 7. In trench 8, a red clay layer was found above the black matter, which Haverfield thought might have been laid in 1790. But the possibility that it may represent a secondary "crossing" of the Roman period, or a Roman filling as in trench 2, ought not to be excluded. Two points at least are certain: (a) that the Vallum swept round the fort by a considerable margin; (b) that after a considerable amount of time had elapsed whilst rubbish and silt accumulated in the ditch, it was filled in, as at other forts, probably by the Romans themselves.

Excavations in 1934 revealed that the fort was a small one, not less than 3.7 acres in extent. The fort is not in contact with the Wall.

"The explanation seems to be that the engineers chose the fort-site for outlook and impregnability, but had already taken the Wall by easier gradients to a sound crossing of the Cambeck where rock replaces alluvial flats. Let the visitor see the Cambeck in spate and he will agree that the engineers were right."⁸⁶

But the fort was not the first on the site, though it seemed to be Hadrianic.

"To the rear of the fort-wall (at the south-east angle) lay a turf rampart, not less than 10 feet wide ... it rested upon flagging and stones set in virgin clay. Immediately in front of this rampart the clay was sharply cut away by the lip of a ditch."

"There is reason to think that the turf fort was differently planned from the stone fort which succeeded it ... It is tempting to connect these facts with another peculiarity of the site. The general course of the Vallum reveals that the stone fort now discovered is by no means in the centre of the symmetrical diversion which the Vallum makes round the site ... An early site set further east and orientated still further east of north seems demanded by a symmetrical design and such a fort may well be provided by the earlier defences of which a small part has now been discovered."⁸⁷

STANWIX. In 1932⁸⁸ the Cumberland Excavation Committee directed their attention to the supposed site of the Roman fort at Stanwix. The course of the Vallum, unknown for about 2½ miles from Whiteclosegate on the east to Davidson's Bank on the west was ascertained at the east corner of field 511 and the south-east corner of 420. The following year⁸⁹ it was traced through field 511, following a line slightly different from that laid down on the O.S. map, through nos. 155, 153, 169, 170. To

quote from the report: " ... across the garden of Homeacres into that of Barnclose, swinging southwards from the conjectural line, the divergence here amounting to about 40 yards. In the garden of Barnclose it bent somewhat further southwards passing into the garden of Stanwix House, running under Brampton Road and entering Rickerby Park, 80 yards south-west of Stanwix church. Just at the south entrance to Stanwix House the ditch was interrupted by an original causeway some 30 feet wide. This was of solid ground, unrevetted in stone. Just within Rickerby Park occurred another permanent causeway, similarly unrevetted, at least 40 feet wide. The Vallum ditch was then traced across Rickerby Park having turned slightly northwards, parallel with the Great Wall. At the west end of the Park 40 yards east of the wicket gate opposite the west end of Albion Place it was found that a change of direction had taken place. Trenching failed to disclose the slightest trace of a southward turn in the Vallum and the line was actually picked up once more by trenching to the north-west. The ditch had in fact turned northwards through about 17 degrees thus keeping to the course followed by the Great Wall ... The Vallum, like the Wall which superseded it, crossed the river at a convenient bend below Stanwix avoiding thus the long marshy crossing by the Eden Bridge."

Renewed excavations in 1934 recorded further details concerning the Vallum.⁹⁰

"New trenches cut to trace the northward turn at the west end of Rickerby Park, revealed that the turn continued until it became twice as sharp as the angle so far explored, turning through 34 degrees instead of 17 degrees .. It becomes clearer than ever that the Vallum turned away from the river-crossing at Eden Bridge"

The existence of the two causeways was puzzling, in fact disconcerting. But an answer to the problem came in 1940 when resumed excavations⁹¹ on the ramparts of the fort quite fortuitously proved that the causeway, presumed to belong to the Vallum ditch in 1933, was that across the fort ditches immediately south of the south gateway. The relationship between fort and Vallum was summarised thus:

"The Vallum is thus known for certain only to the east and west of the fort, and it seems likely that it will prove to have made a sharp diversion to avoid the site. The sharp turn discovered in Rickerby Park also opposite the south-west angle of the fort may well be the beginning of such a feature."

Excavations in 1932-4 and 1940 showed that the fort was of 9.32 acres, proving it to be by far the largest fort on the Wall. The Wall forms its northern front, so that the fort does not project. It is therefore more like Housesteads than Benwell. BURGH-BY-SANDS. The excavations of 1922⁹² were not able to throw any light on the course of the Vallum at this fort, but it was thought that if MacLauchlan's line were tolerably correct, the earthwork must have turned to avoid the fort. An inspection of its course in this area in 1938 led to the following statement:⁹³

"The Vallum ditch was traced from the west through the west end of the village as far as the field behind the Greyhound Inn. It lies a little to the north of the traditional position. Its relation to the fort is obscured by a deep marsh and the embankments of the Carlisle-Silloth railway. Future knowledge will be gained if at all by an approach from the east."

A recent patrol of the area by the writer has shown that the Vallum may be traced from the east to its removal by the railway line. It seems clear that any diversion which is likely to have existed has been destroyed by the railway cutting.

Excavations in 1922 exhibited a fort with an area of approximately 4.5 to 5 acres, lying astride the Wall in the familiar manner. It is similar in every essential respect to the fort at Benwell. It may have replaced turret 71b.

DRUMBURGH. It has already been demonstrated that the Vallum in this area is most indistinct. In 1934⁹⁴ it was suggested that the open drain running from Glasson south-eastwards appears to follow the course of the Vallum ditch, which seemed likely to turn sharply at a point west of Drumburgh School, and run in a straight line behind Drumburgh Castle. The physical relationship of the Vallum is most uncertain. Thus the chronological relationship cannot in the nature of things be determined with any degree of certitude. But indirect evidence strongly suggesting its chronological relationship is implicit in a discussion in Appendix III⁹⁵. The character and extent of the fort itself remained abstruse, despite excavations in 1899 by Professor Haverfield,⁹⁶ until Mr. Simpson and Dr. Richmond resumed work on the site in 1947.⁹⁷ Their important discoveries are worth repeating:

"The stone fortlet identified by Haverfield was found to be sited inside the ditch system of a fort contemporary with the Turf Wall, through which the foundation of the Stone Wall had here been dug. This early fort measured approximately 316 feet from east to west, and 270 feet from north to south. It had east, south and west ramparts of beaten clay, its north rampart being formed by the Turf Wall. Its west gate was of timber and lay well north of the axial position, whilst its south gate, marked by a gap in the single 12 feet ditch, lay far east of the other axis. It is evident that this fort was divergent both in plan and size from the normal forts on Hadrian's Wall."

The complete difference in size, shape and fabric of this fort emphasises its secondary character. Moreover the existence of an early clay fort here adds valuable confirmatory evidence to that

at Castlesteads and enables the argument in Appendix ⁹⁸ III to be stated unwaveringly.

BOWNESS. The known course of the Vallum ends at Jeffrey Croft. That it must have originally reached to the coast seems unquestionable. It is likely to have furnished access to the military zone and western terminal fort of Bowness by means of a causeway across its ditch.

Surface observation and excavation in 1930⁹⁹ suggest that the fort contains an area of over 7 acres. It is therefore the second largest on the Wall. The fort did not project, but lies facing eastwards. The Wall presumably forms its northern rampart as at Housesteads. The fort no doubt replaces milecastle 80.

A summary of the preceding section, a discussion of the significance of the behaviour of the Vallum and of its relative date based upon the above evidence, is stated in Appendix III. It is unnecessary to repeat the above here since a reconsidered statement, conflating the conclusions reached in Appendix III and from the excavations undertaken by the writer since that time, is given below. But the main thesis of Appendix III ought to be emphasised. On any showing, a consideration of the spacing evidence of the forts on Hadrian's Wall shows that they were not irregularly spaced as has hitherto been believed - but rather

that there was a definite regular plan of forts, which was modified slightly in certain cases for strategic or topographical reasons. This regular system of planning makes the planning of a fort at Great Chesters, the centre of the Wall, in the original fort scheme essential, although the date and nature of its construction show it to be a completely secondary feature.

A ii. GREAT CHESTERS

On the evidence of the spacing of the forts on the Wall Great Chesters appears as an originally planned though secondarily constructed fort. It was demonstrated in 1950 that excavation of the Vallum crossing south of the fort, which might hold the key to a nearer solution of the Wall-Vallum dating complex, was an urgent necessity. It was moreover urged that further investigations on the unusual ditch system might throw light on the suggestion that the original site of the fort was marked by the digging of at least one ditch which may have included an area large enough to take a fort of the Housesteads type.

The determination of the character and therefore the approximate date of the existing Vallum crossing south of Great Chesters fort was regarded as of primary importance. The causeway could have been of four types: firstly, a purely modern one to accommodate a road to the existing farm-house; secondly, an original milecastle causeway, though this was unlikely in view of the fact that the milecastle beneath the fort lay considerably west of the line due north of the existing causeway; thirdly, a secondary causeway proving that the fort was built later than the Vallum, and therefore not belonging to the original series of forts; fourthly, an original causeway of the Benwell or Birdoswald type, suggesting that Great Chesters fort, though of secondary construction was planned in the original series of Wall forts.

The last alternative was the likeliest from the start because spacing evidence demands a first-series fort here in the approximate centre of the Wall.

The second problem is intimately connected with the first. A study of the unusual ditch system could not affect the position of the fort in the Wall sequence as shown by an excavation of the causeway. But if an original fort causeway across the Vallum were discovered, then a study of the ditches might elucidate the question of whether a large fort of the Housesteads type was planned and marked by at least an outer ditch at Great Chesters², the construction of the fort being delayed until a change not only of Wall gauge but also of the plan to build a large fort at this point, had been effected. The existence of four ditches³ on the north-west of Great Chesters fort is indeed unusual for a Wall-fort. Moreover, that the butt ends of the four ditches underlie the Narrow Wall taken in conjunction with the fact that the present small fort is exactly contemporary with the Narrow Wall, seems a striking indication of the inherent probability of the hypothesis outlined above.

To attempt a solution of these two main problems excavations were conducted by the writer for four weeks in September 1950, when heavy rain prevented a thorough investigation of the ditches and the causeway, and for three weeks in

May 1951. The work was sponsored by the Durham University Excavation Committee, and received considerable material assistance from the foreman of H.M. Ministry of Works, Mr. Charles Anderson. The excellent work of heavy digging was undertaken by Thomas Batey, with the help of students in September 1950, of whom Messrs. J. E. H. Spaul, R. Winter, W. Tobias and N. McCord must receive special mention. The writer would like to express her thanks to Mr. N. Woodman for his kind permission to excavate and his generous assistance throughout the excavations.

THE EXCAVATIONS

A. The Causeway Site

The line of the Vallum south of Great Chesters fort is distinguishable as a slight depression skirting the gentle escarpment of the Whin Sill on the low summit of which the fort is situated, roughly 200 yards to the north.⁴ The situation of the Vallum is low-lying and therefore subject to severe water-logging even in dry weather. Field drains empty themselves into the ditch though not immediately near the causeway. To add to the difficulties of the site, the accommodation road to the farm-house crosses the Vallum directly south of the south gate of the fort and therefore over the probable site of the causeway. The eastern margin of the road is bordered by a field-wall which turns at right angles west-

wards to cross the causeway position. Because of the heavy rain falling intermittently throughout September 1950, accentuating the inherent difficulties of the site, it was only by a stroke of fortune that the causeway was located that year. The junction of the eastern causeway revetment with the boulder clay of the north slope of the Vallum ditch was uncovered. The constant inrush of water made it impossible to uncover more than the top course of masonry revetment, though three courses could be distinguished by feeling with the hand. At a higher level than the revetment rough stonework was traced on top of the causeway as far west as the field wall would allow. At precisely this point the rough stonework ceased and the pinkish-yellow clay of the north lip was found to continue in a bank to the south, i.e. across the ditch. It was traced for approximately 2 feet southwards, when further investigation was prohibited by the close proximity of the field wall. The existence of an original fort causeway revetted in stone was proven.

Excavations in May 1950 were devoted to uncovering as much of the east side of the causeway as the modern farm-road and water-level permitted. Soil and weather conditions were much more favourable, but water prevented the uncovering of the whole of the eastern revetment, though the precise nature of the causeway was determined. A section 7' 6" by 22' 6" was cut to expose it.

The causeway, though not so well preserved, resembled that at Benwell. Its revetment wall was composed entirely of freestone blocks, reasonably dressed and neatly coursed. The elevations⁵ and photographs⁶ illustrate the appearance of the causeway but a few features require special comment. The number of courses visible slowly decreased, from north to south. The revetment bulged⁷ outwards just south of centre. This feature is probably the result of the weight of water underground or of the pressure of the soil accumulation above it. At that point the revetment was broken and stones had evidently fallen off into the ditch. The bulge seemed to be confined to the top few courses since the undermost visible course was almost in line with the north and south junctions of the revetment wall with the Vallum ditch slope.

At the north junction of the revetment the Vallum slope exhibited a profile as steep as at Benwell. The top of the causeway at its north-east corner was uncovered⁸ for a distance of 7 feet to the south and approximately 3 ft. 3 in. westwards. To have proceeded further in either direction would have incurred the undercutting of the field-wall. The original bank of subsoil was traced once more for 2 feet southwards before it disappeared beneath the field-wall. It was most marked, however, that between this bank and the revetment, the north slope of the Vallum ditch was rough and practically vertical, rather than smoothed to its normal slope. This fact

emphasises the contemporaneity between the digging of the Vallum and the construction of the revetment. The situation immediately to the east of the causeway wall, in the open ditch, was quite different. The slope of the ditch became less vertical⁹ and was followed down to a distance of 6 feet below ground level i.e. approximately 3 feet 6 inches from the top of the Vallum ditch. At a depth of 5 feet below ground level, the pinkish-yellow subsoil changed to a greyish pink. The greyish silt which covered the coursing of the revetment changed to a dense black lower down the ditch. The black silt supported the revetment on the east and was removed to display the coursing to a depth of 6 feet below ground level.

The southern junction¹⁰ of the revetment with the Vallum ditch slope proved to be quite different. A vertical stump of boulder clay projected in front of the normal slope of the ditch as exemplified to the east, as though it were left to receive the end of the causeway revetment. A large block of whin-stone was placed between it and the revetment wall approaching from the north. Any doubts concerning the original character of the causeway were dispelled by the existence of the projecting stump of boulder clay, though it is unfortunate that the position of the field-wall prevented the tracing of the undisturbed boulder clay fully across the width of the ditch

In an attempt to discover whether the original causeway had been metalled, a small trench 6 feet x 3 ft. 4 in. was cut between the section exposing the causeway and the modern farm track. A very rough, sparse layer of flattish stones was reached at less than 1 foot below ground level, reminiscent of the rough cobbling above the causeway in the main trench. It had been cut through by a modern field-drain. Immediately below the cobbles, the familiar yellowish-pink boulder clay subsoil re-appeared, adding confirmatory proof to the originality of the causeway. But no road-metalling could be associated with the original causeway. This is undoubtedly puzzling since a roadway might be expected to be metalled, and metalling, if only light, was discovered both at Benwell and at Housesteads. Perhaps the solid, compact nature of the subsoil may account for the lack of it.

The causeway at Benwell is 19 feet wide. To attempt to find the western limit of the Great Chesters causeway, a small trench was cut at approximately 20 feet west of the south edge of the east revetment, immediately west of the farm road. The south ditch lip was uncovered near the surface, just before it runs beneath the field wall and enters the meadow to the north. Ditch-filling was soon encountered and therefore it may be assumed that the causeway does not extend to this point. It seemed unlikely that deeper digging, which was impossible

because of the field-wall, would have exhibited the western edge of the causeway. It is most probable that the western revetment wall lies completely beneath the modern roadway. The determination of the exact width of the causeway must therefore be postponed indefinitely.

To summarise: an original causeway of boulder clay revetted in neatly coursed ashlar has been discovered across the Vallum at Great Chesters. Its width cannot yet be accurately measured though it is not likely to be more than 20 feet. No signs of road-metalling over the causeway have come to light. Moreover, as at Housesteads, no indication was found as to whether a monumental gateway had at one time been erected over the causeway. Had such a gateway existed, it cannot have resembled that at Birdoswald which had been so carefully removed. It may have been similar to that at Benwell, though no large blocks of masonry comparable with those exhibited at Benwell were discovered. Such masonry may have been removed in Roman times, or even in post-Roman days when the present field-wall, gateway and road were constructed. Yet there was no evidence suggestive of a deliberate demolition of the causeway. It is possible that no monumental archway ever existed at Great Chesters, as Mr. Birley thought was the case at Housesteads. His reasons^{no} would apply equally well to the Vallum at Great Chesters.

The excavations had some light to throw upon the subsequent history of the causeway. It is clear that the ditch on either side of it must have been open for a considerable length of time to allow such a depth of dense black silt to accumulate. This silt was clearly a natural filling of decayed vegetable matter, and not an artificial one. For the whole width of the ditch silt reached to within 2 feet of the top of the ditch. Unfortunately it produced no dateable finds to provide a terminus post quem for the later filling of the ditch. But what the silt lacked in historical accuracy it gained in interest. For near to the north lip of the Vallum by the causeway, a practically complete "pilum murale"¹² was found embedded in the black silt - the first one to be found per lineam valli. Above the black silt was a layer 2 feet thick of greyish-yellow clayey material,¹³ originally taken for undisturbed subsoil in 1950. This thick layer extended for at least 19 feet to the east. It consisted of decomposed yellow sandstone mixed with soft grey clayey silt. The top of this layer at the causeway was marked by yellow sandstone cobbles¹⁴ forming a definite compact level, which might be termed light road-metalling. It has already been noted that similar sandstone cobbles formed the only metalling above the boulder clay near the centre of the causeway. This cobbled level was not, however, apparent in the small trial

trench to the west of the farm road. The grey and yellow layer completely covered the causeway on the east side at least. It was quite different in texture from the dense black silt. Whereas the black silt was a natural accumulation the yellow layer seemed to be an artificial filling of the ditch.

No absolute date may be ascribed to this process of artificial filling, but a similar process has occurred at Benwell, Halton, Housesteads and Birdoswald in the Roman period. Thus it seems reasonable to suppose this was the case at Great Chesters too. The process of filling the ditch artificially has continued until recent times since quantities of stones and broken modern tiles had to be removed before excavation could begin. No buildings were discovered overlying the filled-in ditch, unlike Benwell and Housesteads. This seems easily explicable on the grounds that the civil settlement at Great Chesters lay wholly to the north of the Vallum since the latter was 200 yards distant from the fort. At Benwell on the contrary the Vallum skirts the fort so closely that it could scarcely escape obliteration. Nor would the secondary filling of the causeway area at Great Chesters require as substantial a road-metalling as Benwell, because at the former the causeway would fall out of regular use when the Military Way was constructed nearer to the fort.

B. The fort ditch-system

The excavations on the ditch system have not yet produced satisfactory conclusions, though a number of interesting if complicated points have emerged. The second section of this paper is then in the nature of things a tentative interim report, reviewing what has been accomplished and the lines on which further research ought to proceed. Firstly it is proposed to report on the 1950-1 work; secondly to attempt to co-ordinate the discoveries with those of Mr. F. G. Simpson, who has generously handed over to the writer for publication the notes and photographs of his original excavations of the four ditches on the north-west; thirdly, to state the problems which emerge from such a co-ordination and how it is proposed to attempt a solution of them.

I. The four ditches proved by excavation to exist on the north-west clearly extend to the south-west corner of the fort, and then appear to merge into one deep, broad ditch which continues round to the east gateway. This broad, water-logged depression bordering the southern and eastern ramparts points unmistakably to the existence of at least one ditch round the fort. But a study of air photographs¹⁵ of the site suggests that the terracing obvious on the ground at the south-east corner of the fort might well represent a complex ditch system. It was to substantiate or reject such

suspicious that the trenches of 1950-1 were directed. All the trenches were placed as far as possible to avoid the complications of civil buildings and the Military Way entering the east gateway. The position of the farm-house prohibits an investigation of the ditches at the north-east corner.

Trench I 1950⁶, 80 feet long, was placed south of the Military Way. The high bank of earth and stones covering and concealing the precise line of the east rampart, and surmounted by a high field-wall, prevented a thorough investigation of the innermost ditch. The aim of discovering how many ditches existed at this point was, however, realised. The outer lip of a ditch nearest to the rampart, and both lips of a second ditch were soon exhibited in the reddish-brown pebbly subsoil. A berm of 12 feet separated the two. Neither was excavated to any depth since that was not the aim and the constant influx of water was no inducement to deep digging. The outer ditch was 25 feet wide across the top, and both slopes of the ditch were gradual, suggesting a shallow ditch. The eastern lip was later covered by a fine edging of a north-south road which was traced almost to the Military Way though no clear junction was discovered. Whether the road was Roman or not is uncertain. Its surface was generally poor and no east kerbing could be distinguished. As far as it was possible to

discern, the road was 12 feet wide. Beyond the second, outer ditch, the existence of clean reddish-yellow clay subsoil stretching almost continuously to the end of the trench seemed to prove that no more ditches existed further east. Two not four ditches existed on the east of the fort.

All other trenches were designed to trace the outer of the two ditches round the south-east corner of the fort. A second trench uncovered its eastern lip almost due east of the south-east corner of the fort. Its western lip was 23 feet to the west. A trench designed to trace the ditch on its turn round the south-east corner proved most difficult to interpret and still presents an obscure picture. The eastern lip of the ditch was found to be on the turn in the southern part of the trench. Moreover it was at a considerable depth below ground level and the slope of the ditch was so gradual as to be almost level. Instead of continuing in a gradual northward line, the curve ceased abruptly. Following the pinkish subsoil plainly distinct from the black and grey silt, the ditch lip appeared to shoot off at an angle of 90 degrees to the south-east. As the subsoil bank proceeded to the south-east it became higher, turned its direction to almost due east, and then bent sharply round to the south-east once more. The stump of a small upright wooden post was embedded in the clay subsoil as it

made its first turn south-eastwards. In fact a small ditchlet was discovered, and east of it was a second running almost parallel to the first. Both ditchlets were shallow and ran in a south-easterly direction. They were not traced beyond the limits of the trench, and it was impossible to investigate the questions that necessarily arose because of water and the collapsing of the trench sides as a result of water. The ditch-lets may be explained as drainage channels, presumably draining the outer ditch from which both seem to issue. They are likely to issue from the bottom of the ditch, and in view of the depth of the excavation at this point and the very gradual slope of the main ditch, mentioned above, the odds are that the excavation reached almost the bottom of the ditch. It may be that the ditches were partially removed when the buildings of the civil settlement were erected.

A little further south a trench in 1950 had revealed the eastern lip of the outer ditch slightly on the curve. In 1951 then, a trench was cut opposite the earlier trench in the hope of discovering the western lip and therefore the width of the outer ditch on the curve. It was surprising to discover the presumed western lip at only 11 feet from the measured position of the eastern. The lip was not quite $2\frac{1}{2}$ feet below ground level and therefore it is unlikely that

the lower regions of the ditch were touched rather than the lip. Unless it is because the ditch is on the turn, or because of the ditchlet complication, no adequate explanation of the narrowness of the outer ditch at this point may be offered. The south-eastern corner of the fort ditches is at once so interesting, so complicated and confusing that a complete excavation of the area is desirable before any definite conclusions can be stated. It is, however, interesting to note the surprisingly large distance between the south-east corner of the fort and the corresponding curve of the outer ditch.

II. In 1925 excavations were undertaken at Great Chesters under Mr. F. G. Simpson. An interim report providing a summary of the main results of the excavation was published by Mr. M. R. Hull,¹⁸ but the details concerning the north-west angle-tower, the Broad Wall foundation to the north of the fort which is bonded with the Narrow Wall, and of the four ditches themselves have not yet been published. Since the writer was engaged in a study of the ditches on the east of the fort, it seemed a convenient opportunity to publish the results of both excavations on the ditches simultaneously.

Mr. Simpson cut one section¹⁹ across the four defensive ditches which he had noticed on the surface, at a distance of some 7 yards from the Narrow Wall. This is the only

point at which the ditches have been excavated to their full depth. The ditches need not be described in detail but several general comments need to be made. They were all of a different depth²⁰ measured from ground level: the innermost one being 4 feet 9 inches; the second, 3 feet 3 inches; the third, 5 feet 3 inches, and the outermost 6 feet 3 inches. The two outer ditches which are the deepest are also the widest. The berm separating the outer two ditches from the inner two is the widest of the three berms. The second ditch is both the shallowest and the narrowest. A levelled surface section further south illustrates similar features concerning the relative size of the ditches.

All four ditches ran beneath the Narrow Stone Wall but did not emerge on the north of it. Over each of the four ditches the southern face of the stone wall had collapsed and "in the case of the two outer ditches the fall of the Wall has been complete". In each case too, the depression caused by the subsidence is visible on the surface and clearly marks the position of the ditches.

A partial comparison of the ditches discovered in 1925 with those revealed in the first section in 1950 is now possible. Though the two ditches on the east side of the fort were not fully excavated, their slopes suggested that

they were relatively shallow. Yet a continuation of the line of the slopes of ditch II (see fig. 70) would give an estimated depth of rather more than 6 feet below ground level. Whilst no argument could be based on a comparison of this hypothetical depth with the known depth of the ditches on the west, it is nevertheless noteworthy that the estimated depth corresponds more with that of the outer two ditches rather than the inner two on the west. Moreover, this correspondence between the outer ditch on the east and the outer two on the west may be carried further. Though no measurements are given for the width of any but the first ditch on the west,²¹ it may be ascertained that the outer two ditches are both a few feet wider than the inner two. The first ditch on the west is approximately 21 feet wide at the top. The outer ditch on the east is 25 feet wide.

III. Though a thorough excavation is necessary to substantiate any suspicions concerning the correspondence of the outer ditch on the east, and probably the inner one too, and the outer pair of ditches on the west, it would not be surprising if they prove to be different ends of the same two ditches running completely round the western, southern and eastern confines of the fort. It may be that the inner two ditches on the west, of which the second is very slight, will merge with the third ditch, possibly at the south-west corner

this gets us nowhere

of the fort.

A further interesting though contradictory point emerges from a thorough study of surface indications. Mention has already been made of the visible depressions caused by the subsidence of the Narrow Wall of Hadrian over the butt ends of the ditches, and thus marking the position of them. West of the four depressions investigated, are two similar depressions with roughly the same interval between them. Just as there are depressions running down the pasture marking the line of the four ditches investigated, so are there two depressions running from the two newly noted breaks in the Narrow Wall. Mr. Simpson accompanied the writer on the occasion when this feature was first commented upon, and it was agreed that further investigations ought to be undertaken on this new problem. It is by no means certain that only four ditches exist to the west of Great Chesters fort. Surface clues indicate the probable existence of two additional ditches.

The minimum amount of research required for an adequate solution of the problem presented by the ditch-system would be three complete sections: one covering the complications of the south-east corner, one cutting through the defences on the south of the fort; one displaying the contour and number of ditches on the west. Such excavations would prove

of intrinsic interest in themselves, and only then could the ditches be adequately planned. Before an accurate plan^{a2} of the ditches in relation to the existing fort is produced, it would be unjustifiable to draw conclusions concerning the planning of a site for a large fort at Great Chesters, and the marking of it by the digging of one or two ditches.

A iii. CARVORAN

It has been suggested above that the behaviour of the Vallum at Carvoran is enigmatic. In 1949¹ Mr. Birley suggested a novel explanation of the enigma, but one which demanded excavation to prove or reject it.

The Vallum makes a diversion at Carvoran which is unique for three reasons. Firstly, the diversion is shallower than any other fort diversion known along the course of the Vallum; secondly, it runs to the north of the fort excluding it from the zone between the Vallum and the Wall, whereas the Benwell, Halton, Birdoswald and Castlesteads diversions² run to the south of each fort and explicitly include them in the Wall zone; thirdly, the Vallum does not appear to be diverging round the existing fort since the latter lies considerably to the south and west, and the Vallum would not need to diverge at all to avoid contact with it.

Nevertheless, Mr. Birley was disposed to think that: "the diversion of the Vallum to the north, customarily interpreted as avoiding a swamp, seems easiest to explain on the analogies of the comparable diversions at Benwell and Halton as avoiding the site selected for a fort, even if a fort had not already been built when the Vallum was constructed."

The diversions in the Vallum's course at both Benwell and Birdoswald had been provided with causeways of undisturbed subsoil, allowing access from the south into the immediate

vicinity of these forts. Therefore, if the Carvoran diversion was to be paralleled with those at Benwell and Birdoswald, such a causeway providing access from the Wall zone through the Vallum, but southwards here to a fort, might be expected. Mr. Birley put forward attractive reasons for supposing that it was not for the existing fort but for an earlier one³ on a different alignment that a causeway would have been provided. He made a plea for excavation to solve this problem.

The present writer undertook a short excavation at Carvoran, largely as a result of Mr. Birley's speculations on the subject, in an attempt to discover what in fact was the relationship of the Vallum to the fort of Carvoran.

The presence of causeways or "crossings" in the Vallum ditch at Carvoran has for some time been realised⁴, but whether such causeways were original or secondary has been impossible to determine without excavation. It seemed unlikely from the start that an original causeway would be discovered for two reasons. Firstly, because the construction of this fort in stone is dateable to the latter years of Hadrian's reign⁵ and the Vallum to a relatively earlier date⁶. The Vallum could scarcely provide a causeway for or diverge round a fort that did not exist. Secondly, allowing the possibility of the existence of a fort earlier than the present

stone one, the Vallum seems to exclude it deliberately from the Wall zone just as it excludes other Stanegate forts⁷ which had doubtless been abandoned when the Vallum was constructed.

The excavation lasted two weeks in September 1951; the work was sponsored by the Durham University Excavation Committee; considerable help was afforded by the Ministry of Works foreman, Mr. Charles Anderson; Thomas Batey undertook the work of digging. The writer wishes to express her thanks to Mr. W. Reay for his kind permission to excavate, and to Messrs. W. and M. Reay and Miss Reay for their friendly encouragement and interest.

THE EXCAVATIONS

Mr. Simpson in 1922 drew attention to the fact that "not more than six" crossings⁸ were visible in the Vallum diversion at Carvoran and the 25 in. O.S. map consequently marks them. In 1948 however Mr. W. Reay, in an attempt to level the field for ploughing, filled up the Vallum ditch with heavy reddish soil from the Greenhead quarry. This reddish material is easily distinguishable on the ground, stretching from the eastern field wall to a point just before the second, i.e. the south-west bend of the Vallum. Thus the crossings clearly visible to Mr. Simpson are now only distinguishable by slight depressions marking the gaps in the gradually diminishing south mound, and by the more obvious

depressions in the field wall to the north, which runs obliquely over the north mound, leaving it wholly in the field to the north on the east. One crossing is in line with the junction of the Maiden Way and the Stanegate,⁹ and was the obvious place to commence operations. Trench I was cut roughly along the centre of this crossing.

Trench I¹⁰

Firstly, a portion of the north berm was uncovered and the subsoil determined to be a pinkish-grey clay with a yellowish tinge in places. The trench was extended to cut across the Vallum ditch at right angles. A thin, black line representing the old surface of the ditch marked with unmistakable clarity the gentle profile of the north slope of the ditch. The slope was followed down to a depth of 4 feet below ground level, at a distance of 7 feet south of the north lip of the ditch. Immediately above the black line was a thin layer of dark-grey silt. This layer was superimposed by one of mixed yellow, grey and pink clay streaked with black. A layer, 1 foot thick, of clean, light-grey material overlay the mixed clay and stretched to the lip of the ditch.

Similar conditions recurred in a continuation of the trench, intended to cover the south lip of the ditch. Once more the slope was marked by a thin line of black. But the mixed clay filling appeared thicker and reached almost to the

lip of the ditch, whilst the uppermost light-grey layer, quite thick on the northern section of the trench, was scarcely represented in the southern. The ditch from lip to lip was 23 feet wide. No attempt was made to penetrate the depths of the Vallum ditch. There could be no doubt that no original causeway existed across the ditch at this point. The mixed clay filling was assumed to be a "crossing".

Trench II"

The "crossing" approximately in line with the North-South axis of the fort was next investigated. The Vallum north mound has now reappeared on the south side of the field wall. The approximate centre of the "crossing" as shown by the north mound gap was trenched. Light metalling as if for a roadway or track soon came to light,¹² and was followed across the north berm, ditch, and over to the south side of the Vallum. In the centre of the ditch the metalling deteriorated considerably in quantity and quality, but it was quite clear that a crossing of some kind had been discovered. In an attempt to discover the limit of the metalling of the crossing a trench was cut at right angles to the main trench for a distance of 11 feet to the east, over the approximate line of the south lip of the ditch. This hope was not realised though the metalling became gradually sparser and petered out at about 7 feet 6 inches. Moreover the small

east/west trench was too far north to show the south lip of the ditch.

The south lip was discovered in an extension of the main trench to the south-east. To show clearly the slope of the ditch, and to secure a section of the filling of the ditch, the light metalling, yellowish clay fill, and black silt were removed for a distance of 6 feet 3 inches north from the south ditch lip.¹³ The section of ditch-filling displayed was indeed interesting.¹⁴ Immediately above the pink subsoil of the ditch slope was a layer 1 foot 3 inches thick of dense black material, presumably silt; above that and reaching almost to the south lip of the ditch a layer, 1 foot 3 inches thick, of solid, clean-looking, yellowish-pink clay, precisely the same as in trench I but of greater thickness; a thin layer of small pebbles set on to soft, dark-greyish silty material; then the old topsoil and turf level; finally a thin layer of quarry red. The excavation was not carried further since the non-existence of an original causeway had been proved and a field drain 2 feet to the north discouraged further investigation. At the north lip of the ditch the road-metalling and fill were removed for a distance of 5 feet 6 inches across the ditch. Precisely the same conditions recurred.¹⁵ Attention ought to be drawn to the fact made clear in both trenches, that the Vallum (which has not

been recut in this area, since the crossings remain), approximately 23 feet wide from lip to lip, exhibits surprisingly gentle slopes down into the ditch instead of a steep profile as at Benwell causeway. It seems likely that as at Cockmount Hill¹⁶ the lips proper of the original steep-sided ditch have weathered away and that the gentle slopes of the ditch are the upper slopes only.

Clearly a good example of a secondary causeway or "crossing" had been discovered. The ditch had been open for some considerable time to allow 1 foot 3 inches of silt to accumulate within 2 feet from the top of the ditch before a thick layer of clay, clearly subsoil which had been disturbed, was thrown back into the ditch. A section of the silt from the southern slope was analysed by Dr. A. Raistrick¹⁷ of King's College, Newcastle upon Tyne. The analysis showed that any pollen which may have originally existed in the silt or "vegetable mud" had been destroyed. It would be quite hazardous to express an opinion as to how long the vegetable mud had taken to form. The analysis, though of great interest in itself, could throw little light on the dating of the deposition of the mixed clay, presumably material from the gaps in the Vallum mounds thrown back into the ditch. To discover then the approximate date of the¹⁸ establishment of the secondary causeway or "crossing" it is

necessary to turn to the known history of the fort.

The analysis gives a vivid picture of the processes of the natural and artificial filling of the Vallum ditch. Above the glacial sand and gravel subsoil is found the collapsed sand and gravel weathered and washed down from the lips of the ditch to the bottom. In this clean silt plants begin to take root and are covered by a thin layer of vegetable mud. In this lies vegetable matter of water-plants such as sedge and moss. These are allowed to grow undisturbed in the pool-like bottom of the Vallum ditch, giving a lucid picture of the unpleasantness and discomfort entailed in falling unwittingly into its depths. That the Vallum was partially filled by water need no longer be doubted, particularly in clay subsoil. But to impute in the place of accident, purposes of defence or water communication would strain both the evidence and the imagination. Such was the process of the natural filling of the ditch. The analysis shows the subsequent filling of the ditch to be quite a different story. Only when the pool had stagnated for some time was it disturbed by the deposition of "lumps or shovellings of boulder clay in a mixed mass." This process is one of artificial filling presumably by human agency. The contrast between the two fundamentally different processes is plainly illustrated in the analysis.

Trench II was continued for approximately 31 feet in a south-easterly direction. The aim was to trace the metalling, to discover whether it crossed the flattened south mound, and to try to find its limits. Though sparse it appeared to continue, but ploughing seems to have removed any certain evidence that may have existed.

A third trench, cut just east of the depression in the south mound, clearly exhibited the mound standing nearly 2 feet high and composed unmistakably of the reddish clay subsoil of the Vallum ditch. Here the mound was partially removed to expose the old turf line. Below the turf line a layer 1 foot thick of soft, light-grey material, reminiscent of the light-grey silt found on the north slope of Trench 1 and presumably topsoil, was uncovered. Below this the familiar pinkish-yellow boulder clay subsoil was apparent. The trench was continued to the north to a total length of 16 feet 6 inches, the old turf line of the south berm and the grey topsoil below it being quite distinct. Approximately 4 feet north of the north edge of the south mound slight road-metalling appeared, consisting mainly of small, flat sandstone slabs. This road-metalling existed 4 feet further north, but no attempt was made to trace it further. No turf kerbing of the mound was discovered and it was impossible to say whether stone kerbing had ever existed and had been removed.

CONCLUSIONS

1. No original causeways were discovered over the Vallum ditch. It seems then that if a fort existed when the Vallum was made, it was deliberately ignored and excluded from the Wall zone and all access to it.
2. The lack of an original causeway here makes it virtually certain that the Vallum was constructed before the late Hadrianic stone fort at Carvoran. This converts what was only a strong presumption into a fact which is of great value in any attempt to date the construction of the Vallum.
3. The Maiden Way does not continue so far north as the Vallum.
4. The existence of at least two causeways has been confirmed. Whether either of the two structures may be a causeway within the defined meaning of the term or merely a "crossing" is still a matter for conjecture. Trench I seemed to exhibit the normal type of secondary "crossing". The existence of metalling over the crossing of trench II, in conjunction with the substantial character of the filling, suggests that this crossing is really a secondary fort causeway presumably constructed for the use of the garrison of the fort newly established at Carvoran towards the end of Hadrian's reign. The crossing can hardly be earlier than the erection of the stone fort because of the depth of the

accumulated silt. Nor can it be much later for if it does not go with the establishment of the stone fort, it must surely be brought into line with the "crossings" system initiated within two or three years of the erection of the stone fort here by Flavius Secundus. Before the existence of the first secondary causeway along the Vallum can be stated with confidence, at least one point must be ascertained. Does the road-metalling of this crossing continue over the south mound of the Vallum and lead to the north gate of the fort? Only then would the point be virtually proved. If such a road exists, it must inevitably lead across "the Moss", raising the question of whether a bog¹⁹ existed here in Roman times, and if so, how far it extended. The road-metalling noted on the south berm very near the causeway may perhaps be best paralleled with the "cobbled areas" near the causeways at the Turf Wall milecastles 50 and 51.²⁰

It might be worth while at some future date to discover how wide the causeway is. Excavation this year showed that the area of ditch filled extended for at least 11 feet east of an approximate centre line. The causeway thus seems to be at least the normal 20 feet wide.

The excavation of 1951 solved a problem of immediate importance, and established the existence of the first

probable secondary fort causeway along the line of the Vallum.

THE DIVERSION OF THE VALLUM.

The excavation determined the question of the existence of original causeways in the Vallum diversion at Carvoran. It was not however designed to solve the problem raised by Mr. Birley of the reason for the unique diversion. That no original causeways were discovered does not dispose of the suggestion of the pre-existence of a fort. There are strong reasons for supposing that at least by early Hadrianic times, if not earlier, a fort existed at Carvoran. The undoubted existence of a series of alternately large and small forts along the Stanegate, representing the first stage of the Hadrianic frontier,²¹ makes a large fort at Carvoran not merely probable but essential. The existence of such a fort is then a strong probability though its shape, size and situation are all unknown.

What is practically certain, however, is that the existence of that fort before the construction of the Vallum did not determine the latter's course. Thus Mr. Birley's suggestion that the diversion may be best explained by a comparison with Benwell, is untenable.

The diversion is "customarily interpreted as having avoided a bog". Mr. Simpson discussed the course of the

Vallum in the neighbourhood of boggy ground.²² He assumed that the Vallum at Carvoran had diverged to avoid a bog as indeed it did at High Shield near Bradley, whereas both at White Moss and Gilsland Vicarage it had been carried across boggy ground, for different reasons both of which are convincing. At High Shield, the Vallum does not diverge in the real meaning of the term, but changes its course, presumably to adhere to a high ridge of ground which skirts the southern edge of the low-lying area of bog which is continuous from this point to south of Winshields, i.e. for approximately $2\frac{1}{2}$ miles. Carvoran is unique. That there has been boggy land between the present fort and the Vallum is evident, and this area of land is familiarly termed "the Moss". Moreover, "the Moss" takes precisely the same position with regard to the low crest of the Thin Sill at Carvoran as Crag Lough does to the precipitous crags towering above it, west of Milking Gap. Yet one hardly realises that "the Moss" is in fact one. Bruce²³ showed a tiny lake at this point and Horsley²⁴ told us that there was a "peet-moss" before the fort, though he did not mark one on his map. It seems likely that a moss has existed at Carvoran at least since Roman times though this is not an absolute certainty. Peat bogs can develop quickly in a short period of time. To solve adequately the problem of the age of the Carvoran moss the researches of a botanist are

essential, and the writer hopes that it might be possible in the not too far distant future to investigate the problem further.

The Vallum cannot be said to diverge round an early fort unless the latter was situated precisely in the moss. Even if the bog were proved to be post-Roman, there is still insufficient room between the Vallum and the ridge of the Whin Sill for a fort. A reason other than that of avoiding such a structure must be sought to explain the diversion of the Vallum.

To avoid a bog seems the most reasonable interpretation of the diversion though this must not be accepted unquestioningly. Why for this short distance was the Vallum not cut straight across the bog as at Gilsland Vicarage and White Moss, when by following a straight course it need not have approached the Wall so uncomfortably closely? Was the bog too deep for such treatment? Until the nature and depth of the moss are ascertained no attempt to solve this question would be justifiable. The geology²⁵ of the immediate vicinity though of intrinsic interest, throws little light on the problem, except to refute the idea that the Vallum was here skirting the edge of the Whin Sill. The sill swings in a southerly direction under the fort on its east side. The Vallum commences its irregular,

angular course well to the east of the fort and it seems quite certain that its first bend to the west-north-west was to penetrate the whin at the easiest point, vizually along the course of a small burn which no longer exists. The diversion proper does not appear to be affected by similar considerations and the idea of avoiding a bog immediately reasserts itself. This problem must be left until the researches of a botanist are able to resolve it.

APPENDIXReport on Soil Samples from Carvoran 1951, by Dr. Raistrick.

(Sample A represents the top of the section, sample B its continuation down to the subsoil of the slope of the Vallum ditch.)

A. Sample from Trench II in Crossing.

The material at the top of the sample is lumps or shovellings of boulder clay, in a mixed mass. Below the boulder clay comes vegetable matter, now broken down into unrecognisable fragments, in a thin layer of black vegetable mud. This seems to represent growth in stagnant or semi-stagnant water. The bottom of the sample comprises 4" of clean light-coloured silt, containing a small proportion of vegetable matter as above, and one distinct layer thereof. The basis is fine-graded clean silt.

This seems to imply the bottom of a pool in which there was very slight movement of water, and growing water plants, such as sedge, moss, etc. Only the tipping in of the upper material ever disturbed the pool.

B. Trench II in Vallum Ditch.

The material at the bottom of the sample is natural glacial sand and gravel, containing erratics from the Lake District. The upper material is collapsed sand and gravel which has been brought down by water action from its natural position. The material when dry becomes hard and unyielding, but when wet disintegrates suddenly and rapidly in lumps. It is a chaotic mass of pebbles and mixed sand and gravel, now penetrated by long rootlets which lie parallel to one another in the mass. These rootlets represent growth when the material had reached repose.

It will be noted that the natural soil from the bottom of the sample is here not boulder clay but glacial sand and gravel. The rest of the material is consistent with a supposition that it represents collapsed masses from the sides of a ditch dug through subsoil of the kind just noted, and swamping into repose at the bottom of the ditch, where the roots of growing plants much later came to penetrate it.

A. iv. THE WALL SEQUENCE AND ITS DATING

It is possible and indeed necessary to review the stages in the building of the Wall and their dating as considered in Appendix III in the light of recent work at Great Chesters and Carvoran. The following phases¹ may be disentangled, though their attribution to specific governors may be rather more hypothetical.

STAGE I. Under AULUS PLATORIUS NEPOS: governor from A.D. 122-126.

(a) i. Commencement of the Broad Stone Wall and its concomitant Wall ditch to the north, where necessary, from NEWCASTLE to the IRTHING; the construction of stone mile-castles and turrets in the same area, forming an integral part of the Wall system.

ii. Construction of a Turf Wall, Wall ditch, turf milecastles and stone turrets from the Irthing to Bowness-on-Solway.

iii. Re-occupation of the large Stanegate forts of CARLISLE, OLDCHURCH, NETHER DENTON, CARVORAN, CHESTERHOLM, possibly NEWBROUGH and certainly CORBRIDGE.

iv. Construction and occupation of the small "interval" forts, placed alternately with the large forts on the Stanegate line: LOW CROSBY, BOOTHBY, THROP, HALTWHISTLE BURN, and two so far unlocated near Grindon Hill and the North Tyne Crossing respectively.

EVIDENCE: That the Broad Stone Wall and the Turf Wall and their respective Wall Ditches are contemporary is suggested by the fact that they are both primary structures. Excavation shows that not only the Broad Wall and its ditch but also the Turf Wall and its ditch underlie primary forts. Excavation in 1909 of milecastle 48, POLTROSS BURN, demonstrated that the milecastle was contemporary with the Wall; excavations between 1909 and 1930 per lineam valli showed that milecastles and turrets in both sectors were contemporary with the Wall. The wooden fragmentary inscription² from Turf Wall milecastle 50 is assignable to Aulus Platorius Nepos and thus compares with similar stone inscriptions from milecastles nos. 37³, 38⁴ and 42⁵ in the Stone Wall sector. Mr. Gillam has shown on ceramic grounds⁶ that the Stanegate and interval forts were occupied when the milecastles and turrets were.

(b) Decision to build 11 forts on the Wall and the commencement of at least 10 of them, and the abandonment of the Stanegate and interval forts:

Benwell, Rudchester, Halton, Chesters, Housesteads, Great Chesters, Birdoswald, Castlesteads, Stanwix, Burgh-by-Sands, Bowness-on-Solway were planned, and all but the centre fort, Great Chesters, commenced whilst the Broad Wall plan was still in operation. The possibility that Castlesteads, Stanwix, Burgh-by-Sands and Bowness were originally of turf, just as was the Wall in that sector has been discussed in Appendix III.

EVIDENCE for the secondary place of the forts in the Wall plan has already been discussed above and in Appendix III.

STAGE II. UNIDENTIFIED GOVERNOR. circa A.D. 126-130.

- (a) i. Changeover from the Broad Wall to the Narrow Wall, approximately 8 feet thick. (N.B. The new gauge was probably 6 feet at first, cf. Brunton turret, but a discussion of this problem does not affect the question at issue).
- ii. Construction, and possible reduction in size, of Great Chesters fort, and the possible consequent decision to build Carrawburgh.
- iii. A sealing off of the Military Zone by the construction of the Vallum.

EVIDENCE: Great Chesters fort is clearly bonded in with the Narrow Wall at its north-west angle.

That the Vallum is contemporaneous ^{and} or later than Great Chesters fort (as ~~indeed~~ ^{it is with} Benwell and other primary forts ~~are~~) is suggested by the existence of an original fort causeway across it. But the Vallum cannot have been constructed much, if any, later than the fort and the Narrow Wall (see (c) below) and the most reasonable explanation is that the decisions to change the Wall gauge and to construct the Vallum were simultaneous.

(b) Extension of the Narrow Wall to Wallsend and the construction of Wallsend fort.

EVIDENCE: That this is later than Stage I is clear because of

the later date of the Narrow Wall gauge. The lack of a Vallum between Newcastle and Wallsend justifies the assumption that the extension is later than the construction of the Vallum.

(c) Replacement of the turf by stone, i.e. Wall and milecastles between the Irthing and the Red Rock Fault.

EVIDENCE: This is clearly secondary work, and is a consequence of the reduction in Wall gauge. The Narrow Wall is brought up to the north corners of Birdoswald fort (instead of following the line of the Turf Wall) proving that the replacement is later than Period Ib.

Excavations at Turf Wall milecastles 50 and 51, and a study of the associated pottery, show that they were soon replaced by stone milecastles.

The replacement is undoubtedly later than the construction of the Vallum because the latter deviated and left an original causeway to the south of Turf Wall milecastle 50. This point will be elaborated below.

(b) and (c) may or may not be contemporaneous.

(d) Decision to add Drumburgh Fort?

The evidence has been discussed in Appendix III.

(e) Commencement of the outpost system, i.e. the forts of Bewcastle, Netherby and Birrens.⁷

EVIDENCE: An inscription from Bewcastle mentions an unknown governor whose name is virtually illegible.

(f) Commencement of the Cumberland Coastal System.

EVIDENCE: Cardurnock⁸ fortlet is an Hadrianic foundation. The fact that it was built in turf suggests a relatively early date since a consistent policy of replacement of turfwork by stone may have been inaugurated by the end of Hadrian's reign, a point which will be considered below. The east gate of Moresby fort has yielded an inscription⁹ mentioning Hadrian as "pater patriae" and therefore is not earlier than A.D. 128, as Great Chesters.

STAGE III. Under SEXTUS JULIUS SEVERUS, governor c. A.D. 130-133

The actual construction of Carrawburgh evidenced by a fragmentary inscription.

Continuation of the previous governor's work at Drumburgh and Wallsend, the outpost forts and the Cumberland Coastal Defence.

STAGE IV. Under PUBLIUS MUMMIUS SISENNA, attested in A.D. 135.

The rebuilding of Carvoran fort in stone, which epigraphic evidence proves to have been late in Hadrian's reign.

Two important modifications have not so far been attributed to any governor: 1. the rebuilding of Castlesteads and perhaps the forts in the west in stone. 2. the replacement of the Turf Wall from the Red Rock Rault to Bowness-on-Solway by the Intermediate Stone Wall.

Firstly, Castlesteads: Mr. Birley has drawn the writer's attention to a fragmentary building inscription¹⁰ from Castlesteads

now lost, which is dedicated to an Emperor, presumably Hadrian. Three letters DIO on another fragment, possibly but not certainly from the same inscription, may be part of the nomen of an unknown governor, but whether he is identical with the governor in charge of Stage II is impossible to say. Though the inscription is fragmentary it seems likely that the title "pater patriae" would have been preserved had the Emperor concerned had such a title when the inscription was erected. The lack of this title suggests a date earlier than that of Great Chesters and Moresby, for the rebuilding of Castlesteads in stone.

But if this rebuilding came so early in the Hadrianic period, it is most unlikely that the other forts further west were reconstructed in stone so early. Drumburgh could hardly have been built by then, and it was at first constructed in clay, a strange thing to do if all other forts on the west were already of stone. It seems more probable that such forts and the Turf Wall from the Red Rock Fault to Bowness-on-Solway were reconstructed in stone simultaneously, as part of a consistent policy, whatever the date. There are two possible dates for this important alteration: circa A.D. 138 or c. A.D. 160. Structural and ceramic evidence from milecastle 79 and Garthside turrets lead Professor Richmond recently¹¹ to favour the earlier of the two dates, though now he and Mr. Birley prefer to be non-committal, but tend to the later

date. Only further excavation can solve this question and therefore the present problem. Whether it is Mummius Sisenna, who rebuilt ~~Castlesteads~~ in stone, or Calpurnius Agricola who is responsible for this important modification, the policy is likely to have comprehended a replacement of turf forts by stone ones as well as the Turf Wall by the Intermediate Stone Wall.

It must be emphasised that the various stages are not so clear-cut as may have been suggested. Nevertheless three main policies may be detected and summarised thus:

1. The initial Broad Wall experimental period.
2. The Narrow Wall-Vallum-extension period representing economy on the Wall itself to enable a developed frontier scheme to materialise.
3. Consolidation; or stone replacement period. None of the three main stages are mutually exclusive since continuity would naturally be preserved and the work planned in one period may not have been completed until well into the next. We have seen that the period of consolidation may not have come until the tribes to the north had been severely dealt with during the Antonine advance into and occupation of Scotland, when it was possible or convenient to return to the Hadrianic frontier line. One other interesting point has emerged - that if all modifications have been assigned correctly the unidentified governor seems to have been a most

enterprising man.

The significance of this constant change of plan cannot be discussed here. Let it suffice to say that two diametrically opposed opinions may result:

(a) that "these changes were all directed to increased control", and "the fact that archaeology informs us of no destruction on Hadrian's Wall during its first years justifies the assumption that the Wall was a success."¹²

(b) "Here we have all the indications of a period of increasing military pressure on a frontier which, in its original form, had been devised to suit normally peaceful conditions." "The new frontier, as originally planned, proved unsuccessful: the northern states reacted to it sharply and increasing military action was required to maintain it."¹³

B. THE VALLUM AT MILECASTLES.i. MILECASTLES IN THE TURF WALL SECTOR.Harrow's Scar Turf Wall Milecastle 49.

Attention was first paid to the relationship of the Vallum to a milecastle in 1898¹ by Haverfield. Just before reaching milecastle 49 the Vallum turned abruptly southwards and disappeared over the cliff. The significance of this unexpected relationship following rapidly a similar discovery concerning the Vallum round Birdoswald fort, was immediately noted.

"The annexed plans show clearly enough that the Vallum by making this turn, just but only just avoided crossing the site of the milecastle and the most natural conclusion is that the makers of the Vallum intended to avoid the site of the milecastle as they avoided the site of the fort ... The milecastles would seem to be either earlier than the Vallum or coeval with it as we have already discovered the forts to be."

How near was Haverfield to the truth? The significance was clouded by later discoveries and hypotheses based upon them, with the result that the sudden turn came to mean merely that the Vallum intended to descend the steep cliff. Only in 1935 was its true interpretation realised on the discovery of a new similar though smaller diversion at Turf Wall milecastle 50².

High House Turf Wall Milecastle 50.

In 1934 for the first time an attempt was made to discover the nature of turf wall milecastles. During such work at High House³ it became clear to the excavators that the Vallum must have been diverted to avoid the milecastle. In 1935⁴ attention was turned to this unusual feature, and valuable, indeed revolutionary

facts resulted.

A surface study made it obvious that not only the Vallum ditch but also the south mound had been diverted from their straight course⁵ round the milecastle. Trenches cut through the south mound revealed well-defined kerbs of turf thus clearly demonstrating the line of the mound. The mound was found to be interrupted by a gap 21 feet wide, marked clearly by cross-kerbs of turf - a gap seemingly to provide access to the south for a made road. The north mound was found on the west to join on to the west wall of the milecastle and not to diverge round as the south mound and ditch had done. The north mound on the east was deemed to do likewise. The ditch revealed a long and complicated history. Later modifications had considerably altered its original appearance though much of the original picture could be restored at least in the imagination. The ditch had been interrupted by an original causeway similar to the fort causeways of Berwell and Birdoswald. Though it had been removed systematically, nevertheless a projecting stump of original substance was left in position on the north side of the Vallum ditch. The causeway is likely to have been revetted as a scattering of stones from the core attested. A drain seems to have run from the milecastle down into the Vallum ditch where the remains of the culvert in the bottom showed that the causeway at its narrowest had been 12 feet 6 inches wide. As at Birdoswald the bank of undisturbed subsoil had been splayed.

The importance of both the diversion and the original causeway

was realised. Contrary to all expectations, in contradiction of the current theory concerning the date of the Wall and Vallum, it looked suspiciously as though the Vallum was of common design with the Turf Wall and therefore of common date.

Wallbowers Turf Wall milecastle 51.

In 1936⁶ the Vallum was investigated immediately south of milecastle 51. The Vallum did not diverge as in the case of High House.

The north mound was examined in detail both at the milecastle and for some distance east and west. It was composed of the usual upcast from the ditch and retained by kerbs of turf but its measurements were abnormally small. Its overall width was only 14 feet wide whilst on the west of milecastle 50 it was 24 feet. The same conditions recurred 120 yards to the east and 160 yards to the west. Opposite the south gate of the Turf Wall milecastle the north mound was broken by an original gap 17 feet wide, bordered by $7\frac{1}{2}$ feet kerbs of turf. Slight traces of a cobbled road were observable both in the gap and northwards. The south mound was larger, having an overall width of 19 feet. It still stands 3 feet high. Nevertheless it is smaller than the south mound west of the diversion at High House. One major point concerning the south mound at Wallbowers led to further investigation of it at High House - the discovery that the north and south kerbs of the south mound were originally continuous, clearly preventing any access to or from the south. At

At Wallbowers, however, opposite the west side of the gap in the north mound a cross-kerb $5\frac{1}{2}$ feet broad linked the north-south kerbing of the south mound. This cross-kerb was clearly contemporary with the north and south kerbing. Another unusual feature emerged. Opposite the centre of the gap, a stone culvert 19 feet long passed through the south mound, its floor being the original surface of the ground. The presence of these two unexpected features prove conclusively that the south mound at Wallbowers was originally continuous though the north mound was originally gapped.

The obvious connecting link between the continuous south mound and the gapped north mound (since the gap must be leading somewhere) is an original causeway interrupting the ditch and providing access to the south berm and no further. It is interesting to note cobbling on the south berm, stretching from the north edge of the south mound northwards. The remains of a causeway were visible at High House. It seems most likely on this analogy and because of the gradient of the culvert through the south mound that such a causeway had existed across the ditch at this point though all traces had been removed completely by a later modification which could be paralleled almost exactly at High House. One further inference emerged from the excavation. The original Vallum ditch at Wallbowers must have been below normal size because of the small amount of upcast in the mounds.

In the same year a return was made to the Vallum at High House to elucidate further the nature and history of the causeway

in the light of the new knowledge obtained from Wallbowers.

Five main points were established:-

(a) The south mound as at Wallbowers had been originally continuous, though furnished with two cross-kerbs instead of one.

Trenching proved that the cross-kerbing was not closely recurrent

The first modification of the Vallum entailed amongst other things the obliteration of the south mound between the two cross-kerbs to make way for a roadway.

(b) The kerbs, though akin to turf, were on further study and analysis proved to be blocks of humus "as if the turf had already been stripped." The reason for the disappearance of the turf is clearly that the Turf Wall had been built first.

(c) The stump of original subsoil was re-examined to make certain that an original causeway had existed. All "secondary accretions" were removed and the remains of the stump, 20 feet wide at the back, 12 feet 6 inches wide at the front, and projecting 2 feet 6 inches southwards across the ditch were established beyond doubt.

(d) The north mound, instead of being removed as had hitherto been the accepted opinion, had never existed east of milecastle 50. The south mound was obviously of double size. This astounding fact completely denounced the accepted theory that the Vallum preceded the Turf Wall.

"There can no longer be any doubt that in the High House sector the Vallum followed the Turf Wall since its plan was modified to fit it."

(e) Since the south mound had originally been continuous in either case: "there is no need to assume the existence of a gateway on the causeway. These gateways were intended to control Vallum crossings open to the public. It is now evident that the milecastle causeways were not for public use but were of service to the milecastle garrison in patrolling the south berm of the Vallum:"

It has been tacitly assumed since that time that original causeways across the Vallum ditch existed south of all milecastles. It is indeed a strong presumption. But the necessity, if not urgent, of investigating the relationship between milecastle and Vallum elsewhere must undoubtedly have been realised. The present writer determined to test this relationship by the spade at one or two milecastles in Northumberland, since she felt confident that the modifications, if any, of the causeways in Northumberland might well exhibit a different history from that already determined in the Turf Wall sector. An obvious place to commence operations was at the milecastle causeway easily visible on the ground, south of milecastle 30 at Limestone Corner - a causeway clearly used in recent times. The existence of this and other milecastle causeways visible on the surface, though mentally noted, has never before been expressly noted in print.

ii MILECASTLES IN THE STONE WALL SECTOR.Limestone Corner milecastle 30.

9. The visible causeway exhibits the familiar "depression" of the north and south berms noted elsewhere per lineam valli. Here the Vallum is cut through solid basalt rock in a most noteworthy manner. The rock is clearly visible on the surface northwards of the north lip of the Vallum ditch, so as to preclude the existence of road-metalling. A priori reasoning suggests that the causeway here is not an original one. If the Vallum ditch had been originally interrupted to leave a causeway, such a causeway would in the nature of things be composed of solid basalt. Moreover because the Vallum ditch lips stand so high on either side, one would expect the stratum of rock to proceed quite flat and level across the Vallum ditch. It would certainly not exhibit the boat-like curve which the existing causeway displays.

The Excavations

The first trench¹ was placed to cover the junction of the north-eastern edge of the causeway with the natural rock of the north lip of the Vallum ditch. The north lip at this point is a clearly cut vertical face of rock. After a thick layer of bracken, roots and topsoil, a loose, cleanish, beige coloured soil was reached. On top of this and in it for at least 5 feet down the ditch, (measured from the top of the whin block of the north lip) whin boulders were closely packed. It was clearly not a natural deposit of boulders. The whin block forming the north lip con-

tinued vertically downwards showing unmistakably that if the structure was a causeway at all it was not an original one. The soft, light-coloured material tapered gradually off towards the east though stretching at least into the Plantation. Any hope of discovering the eastern edge of a causeway whether original or secondary had to be abandoned.

The possibility remained that this filling of the ditch with boulders and soil represented a wider replacement of an original narrower structure as modification I at High House and Wallbowers² were interpreted. It was therefore determined to dig a small trench approximately in the centre of the causeway, to find out whether a stump of rock denoting an original causeway had been left, as was the case at High House though in different material. A small trench 3 feet wide by 3 feet 6 inches long was cut in the centre where the rock clearly apparent on the surface of the north lip would either be cut through to form a ditch or project to form an original causeway. The rock, roughly in line with the north ditch lip, descended abruptly,³ clearly demonstrating the fact that no original causeway had been left in the ditch. As in the first trench, the ditch was filled with smallish stones, boulders and softish brown soil, surmounted by a 6-inch layer of modern cinders, for a depth of at least 2 feet 6 inches below ground level. The top of this brown stoney filling was far from looking like a metalled roadway.

Conclusions

~~A number of alternative conclusions may be inferred:-~~

Two alternative explanations may be offered:-

(a) That the filling represents a secondary causeway created at some time after the original cutting of the ditch. This seems a possibility, but the lack of suitable road-metalling over the causeway itself somewhat detracts from the argument.

(b) The filling represents a "crossing", one of the series thrown across the Vallum ditch to mark a formal obliteration of the earthwork as an obstacle, thus having no direct relationship to the milecastle whatsoever. Although it is the approximate position for such a crossing, it stands much higher than do other crossings present in the ditch in this area.

One important problem was left unsolved - had an original causeway ever existed across the ditch at this point? Certainly no trace of one was discovered but on analogy with the projection of the original subsoil left at High House it is still possible that the remains of an original rock causeway may exist lower down the ditch. A solution to this problem was not pursued since owing to the extremely rocky nature of the locality excavation entailing the removal of large blocks of stone, through foot after foot of such blocks, was at the time a physical impossibility. One consideration seemed to weigh emphatically against the existence of an original causeway. Why should the Romans remove a causeway of solid rock - a process not of the easiest kind as anyone who knows the district will realise - only to replace it by a much less substantial causeway of soft soil and boulders? That a similar procedure occurred at High House and Wallbowers is evident, but its

simplest explanation, viz. to facilitate the later construction of the Stone Wall, does not apply in the case at issue. At Limestone Corner it would seem to be madness of the highest degree! Perhaps a completely different explanation will provide the answer to the problem of which no attempt at solution may yet be made. Before an answer be attempted, and before the difficult conditions of excavation be tackled again at Limestone Corner, it has been decided to excavate as completely as possible another apparent milecastle causeway in Northumberland, south of milecastle 23 Stanley Plantation.

iii Stanley Plantation, milecastle 23.

The need for an investigation of a milecastle causeway in Northumberland was not fully met by a trial excavation on the causeway across the Vallum south of Limestone Corner milecastle 30 in 1951. In 1952 attention was therefore focussed on the same problem at milecastle 23. This site seemed more likely to produce the necessary results, since the Vallum and its causeway were here very well preserved and there was less risk of encountering huge stones (which had severely hampered the work at Limestone Corner). Owing to the kind permission of Miss Straker of Stagshaw House, excavations were allowed to proceed for 4 weeks in April and May 1952. Durham University Excavation Committee sponsored the work and gave the services of their foreman Thomas Batey, with the assistance of Wilfred Fawcett of Corbridge. Miss Dorothy Charlesworth, B.A., of Hexham gave invaluable assistance to the writer, particularly in the recording of the excavation. Mr. F. G. Simpson paid a number of visits to the site and assisted the writer not only by photography, but also by his unfailing advice and experience. Messrs. E. Birley, J. P. Gillam, W. P. Hedley, W. Bulmer and a group of archaeological Ordnance Survey Officials were among the visitors to the excavations.

The Site. The position of milecastle 23 is a clearly marked

grassy plateau in the pasture immediately east of Stanley Plantation. The Vallum runs quite close behind the Wall¹ at this point and is in a wonderful state of preservation. The ditch is particularly fine to the east of the milecastle causeway, the latter clearly visible south of the milecastle². The mounds are thickly covered in gorse; this tended to give an untidy appearance to the excavation. The south mound of the Vallum, immediately opposite the milecastle causeway, has not been obliterated, though a slight depression in it, rather west of the centre line of the causeway, seemed to signify the presence of a small gap. It was noted that this depression fell in the position of a gap of the familiar crossings system. Moreover, an examination of the crossings system throughout the pasture to the east, showed that all the crossings cut across the Vallum obliquely, so that the south mound gap was invariably slightly west of its opposite number in the north mound. This fact has never been noticed before. The north mound at the causeway has been virtually obliterated, presumably by the ploughing of this field to the north of the Vallum. The causeway itself is a good example of those visible throughout the course of the Vallum opposite milecastle. The south berm had been considerably depressed, and the Vallum exhibits a concave contour from north to south. The causeway represents a substantial filling of the Vallum ditch, though

the bridge or effective roadway of the causeway was scarcely more than 15 feet wide, and on either side of it the filling tapered gradually down to the bottom of the Vallum ditch. The east-west limits of the causeway have not been precisely determined but the causeway must cover a distance of 20 yards.

The Excavations. It was too much to hope that the causeway could be extensively excavated, like those of Turf Wall milecastles 50 and 51, because of the small amount of labour and time available. But, though a thorough investigation, involving the complete clearing of the causeway and the bottoming of the ditch, might be desirable, it was rendered unnecessary by the earlier excavations in Cumberland. Selective rather than extensive excavation was undertaken.

The broad sequence of structural changes proved strikingly similar to that discovered at milecastles 50 and 51. Three main structural periods were distinguishable, corresponding with the three at High House Turf Wall milecastle 50. Firstly, the original state of affairs when the Vallum was first constructed, and of which very slender evidence remained; secondly, modification I, involving the demolition of an original causeway and the substitution of the existing larger one; thirdly, modification II, involving the abandonment of

the causeway as such and an attempt to reconstruct the mounds and therefore the Vallum as an effective boundary. It is proposed to describe each in chronological order rather than in the order in which they were discovered.

Period I. As at Wallbowers, practically all evidence of this period had been removed by modification I. The ditch beneath the existing causeway was not excavated beyond a depth of some 3 feet below the Roman ground level.³

No sign of the original milecastle causeway was discovered. The southern slope of the ditch was found to be cut through pinkish-yellow boulder clay on top and solid free-stone rock beneath.⁴ The northern slope of the ditch was cut in pinkish-yellow boulder clay. What was originally mistaken for a stump of undisturbed subsoil, jutting out beyond the southern face of the rock-hewn ditch slope, was found to overlie a grey-black filling. Its unusually suspicious position will be explained below. No apparent sign of the original causeway was discovered.

A thorough investigation of the north mound produced the necessary, though rather slender, evidence for the presumed original state of affairs. Trenches cut across the north mound revealed a most unusual feature which had already been found connected with the southern. Precisely where a gap

in the mound had been expected there was a single course of masonry^s revetting either side of the virtually demolished north mound, representing a clearly continuous mound over which no sign of metalling could be discovered. The revetment continued on the south side of the north mound for some 44 feet, and seemed plainly original work.

All the evidence seemed to combine to prove that no original causeway and no north mound gap had ever existed, until a final trench was cut along the centre of the north mound opposite the existing milecastle causeway. At Wallbowers, not only had the edges of the north mound been revetted in turf, but also the ends of the mound on either side of the gap; if therefore an original gap had existed in the north mound at Stanley Plantation, it might be expected that the original ends of the mound on either side of the gap would have been revetted too, whether in turf or stone. The final trench in the north mound was designed to cut across any such evidence of revetment. The north mound has been practically ploughed away, and it is most fortunate that what slight evidence remained was found, since it completely changed the probable interpretation of the excavation.

The trench was 18 feet long and approximately $2\frac{1}{2}$ feet deep. It proved practically impossible to distinguish mound material from topsoil. Signs of turfwork appeared at the

bottom of the trench. In the centre, for some $7\frac{1}{2}$ feet a single fairly thick black line marked the old turf-line. Then on either side the black line thickened and divided into a number of small black lines. In short, as may be seen from a study of the accompanying section⁶ and photograph of the trench, traces of turf revetment were discovered on either side of a small gap of no more than 8 feet. The gap was undoubtedly unusually small, and the evidence for it unusually slight, but it seems certain that an interpretation of the section as a gap between two turf revetments is correct. The evidence from Wallbowers was similar, though the gap there was as wide as 17 feet. A small trench at right angles to and on the north of the section along the centre of the north mound showed the fairly thick lamination of the western turf revetment northwards for nearly 3 feet, at which point it began to disappear. Clayey material lay upon it, representing secondary mound upcast. Then the stone core of the stone revetment appeared, its face being 2 feet 6 inches to the north; it seemed to destroy the turf kerbing. The structural sequence seemed quite clear: firstly the turf kerbing; secondly yellow upcast obliterating the kerbing and associated with the stone revetment.

Though the small north mound gap does not necessarily prove that an original milecastle causeway had existed at this

point, since the gap need only provide access to and from the north berm, it is extremely likely that the north mound gap and original causeway were at once causes and effects of each other. Such an original causeway was partially discovered at High House, and one can virtually be proved to have existed at Wallbowers. It seems safe therefore to draw a similar conclusion at Stanley Plantation, that an original causeway has once existed there to provide access from the south berm, across the ditch, through the small gap of the north mound, to the milecastle. It is unfortunate that no metalling of any kind has been discovered on either berm as it was at both High House and Wallbowers. It may be noted too that the small north mound gap is sufficiently wide to allow the passage not only of patrols but also of wheeled traffic.⁷

The question of the relative date of the stone revetment of the north mound was investigated. The existence of the turf cross-kerbs in the north mound proved the stone revetment, representing a continuous north mound, to be secondary work. Five small trenches were dug to confirm this evidence. Some 24 yards to the west of the causeway site small trenches were cut over the north and south edges of the north mound. The northern trench produced neither turfwork nor stone, and no convincing mound upcast. The south trench exhibited

stone revetment. As far west as the field-wall allowed, two more trenches were dug⁸, and they told a clear story. Turf-work revetting the north edge of the mound was discovered; on the southern edge, though no turf-work was visible, stonework had been placed upon $2\frac{1}{2}$ inches of yellow mound upcast. That the stone edging of the northern edge of the north mound was secondary was thus proven, and that of the southern edge likely. A final trench, some 108 yards east of the site, cut over the southern edge of the north mound, showed not only rough stonework set upon 3 inches of yellow upcast, but also the remains of turf kerbing immediately to the east of it. The trench showed clearly how the stone edging replaced original turfwork. It seems that where the turfwork has been removed, the yellow mound upcast has spilled forward and the freestone revetment placed upon it.

The north mound at Stanley Plantation seems to have been kerbed in turf along its northern and southern edges as well as on either side of the gap. The south mound presents a quite different picture: it is clear from surface indications that this mound, which is quite well preserved at this point, has never been totally breached. It may be assumed to have been originally continuous, as indeed it still is. But to confirm surface evidence a small trench⁹ was dug to cover

its southern edge, roughly in the centre of the slight depression in the mound. Even here the yellow mound upcast stood to the height of 1 foot and gave no indications of road surfacing over it. Moreover, a fairly shallow laminated layer of black and grey, abutting on to the yellow upcast and stretching at least 6 feet to the south, was clear evidence of the turf-kerbing of the mound. Two important facts emerged: firstly that the south mound had originally been continuous, and secondly that its southern edge had been kerbed with turf.

The northern edge of the south mound was revetted neatly by one course of regular roughly dressed freestones¹⁰. It was immediately opposite the existing milecastle causeway that this phenomenon first came to light. This stone kerbing was traced both east and west until a stretch of 41 feet had been uncovered (cf. north mound). It was quite remarkable to note that it existed for the width of the existing milecastle causeway and ceased at precisely the point where the Vallum ditch recommenced on either side of the causeway. The stonework looked convincingly original. It merged with the yellow upcast of the south mound and moreover was placed immediately above a distinctly black line representing the old turf line. This was cut through but it was clearly a single line of decomposed turf, and not a compressed turf

revetment on which the stonework had later been superimposed. How high the stone revetment had originally been is a matter for pure conjecture. Usually only one course of it remained, but on the northern edge of the south mound two courses were discovered at one point and photographed^u. No road metalling was discovered at all on the south berm for the whole width of the causeway. This evidence confirms that of the small trench covering the southern edge of the Vallum mound opposite the depression. No Roman roadway has ever passed over the south mound, and thus the explanation of the depression as part of the crossings system is reinforced.

A section cut across the south mound, at the western terminal point of the stone revetment, proved of great interest for its light on the composition of the Vallum mound. An overall photograph, taken by Mr. Simpson, detail photographs taken by the writer and a drawn section, combine to illustrate the unusual features^u. The mound was 21 feet wide and at its highest point approximately 2 feet 6 inches in height above the Roman turf level. The old turf line appears as a black layer, varying up to $2\frac{1}{2}$ inches in thickness throughout the section, clearly distinguishing the mound upcast above it and the clean light-grey humus below it. The mound upcast was of solid yellow pebbly clay, plainly dug from the Vallum ditch. The southern edge of the

mound was distinctly kerbed by turves of roughly 3 inches thick. The photographs show the lamination. The kerbing extended for 4 feet to the south and beyond that, for another 3 feet, traces of turves were apparent in a greyish material mixed with crumbled yellow sandstone. This may represent spill from the mound, and the southern edge of the turf work proper is taken as the southern edge of the mound.

Immediately north of the turf kerbing was a heap of rough, loose freestones forming part of the mound upcast. This is the first feature of its kind to be discovered in a Vallum mound. The feature was apparent in both sides of the section. That it is not of structural significance but rather an isolated fortuitous feature seems obvious, since the earlier trench covering the southern edge of the mound only 12 feet to the east did not exhibit a similar feature. Perhaps the constructors of the Vallum mound deposited in a heap in the mound a number of small stones collected either during the digging of the ditch or found lying around on the site. The feature is of interest but of no special significance.

Next the section demonstrated the relationship between the stone facing and the mound. The large terminating stone of the revetment was placed immediately above the old turf line

Sticky yellow clay seemed to hold it firmly in situ. Behind the facing stone was a core of relatively small loose stones mixed with yellow mound upcast. No difference could be detected between the mound material at this point and in the centre of the mound, except that amongst the stone coring it seemed slightly less compact and solid. There was no indication of a revetment in turf earlier than the existing stonework. No evidence has so far been discovered on the south mound to prove that the masonry is secondary. Just beyond both the eastern and western terminal points of the northern stone facing, no revetment of any kind was discovered and no vestiges of an earlier turf-kerbing having been removed could be detected. Further, a small trench 130 yards east of the causeway showed a rough stone edging on the north edge of the south mound, and no sign of turf-work. Hitherto, all evidence suggests that the stone revetment of the northern edge of the south mound is original. Yet identical masonry revetment on the north mound can be demonstrated to be secondary. Nothing more can at the moment be said concerning this apparent inconsistency in the evidence.

A final unusual feature must now receive comment. Slightly north of centre a low mound was detected, of light-grey material above two thin black lines. This low mound, clearly turf-work and humus, stretching for approximately

6 feet across the mound was completely overlaid by the yellow mound upcast. This too is a new feature unparalleled elsewhere on the Vallum. Mr. F. G. Simpson suggested that it may have been the original turf kerbing of the north side of the south mound, then a much narrower structure; the upcast of the mound might, at some later date, have been pushed over this turf revetment to make the mound wider, the new mound being faced by stonework. This suggestion has been disposed of by later work. A trench¹³ was cut at right angles to the section through the feature, for 7 feet 6 inches eastwards. The material gradually disappeared as it was traced eastwards. A trench designed to discover whether the northern edge of the south mound was revetted beyond the eastern termination of the stone edging, was extended southwards 6 feet into the mound upcast.¹⁴ If an early turf revetment had existed, traces of it would surely have been found. Whether the stonework of the south mound be deemed original or not, it seems evident that the grey feature shown in the south mound section cannot represent an original turf kerbing of a narrow south mound. It may rather represent a small heap of unwanted turves, perhaps taken from the surface of the Vallum ditch, thrown where the south mound was to be constructed and almost immediately covered by it.

Period I of the Vallum south of milecastle 23 may be summarised thus.¹⁵ The south mound was continuous and was revetted on its southern face by laid turf kerbs, whilst its northern face may have been revetted in stone. Across the Vallum ditch an original causeway of undetermined width had been left to provide access from the south berm to the milecastle. A narrow gap had been left in the north mound, which was kerbed in turf. No indications of metalling or cobbling were discovered in the immediate area of the causeway. The picture is almost identical with that revealed at Wallbowers Turf Wall milecastle 51 and similar to that at High House.

iv General note on the Vallum at Milecastles.

The relationship of the Vallum to milecastles has now been tested at five points, three in Cumberland and two in Northumberland. Although minor differences have been noted at each, the general conclusions form a consistently clear picture. The Vallum cannot antedate the milecastles since it is no earlier than the construction of the first series of forts, which are demonstrably later in construction than the milecastles. It is noteworthy, nevertheless, that the Vallum diverges round one milecastle which has produced an inscription assignable to the governorship of Aulus Platorius Nepos. Moreover, south of Harrow's Scar, milecastle 49, the Vallum stopped short of the milecastle to avoid contact with it. At three milecastles evidence of original causeways across the ditch has been unearthed. Further excavation on other milecastle causeways, both in Cumberland and Northumberland, is still desirable to provide a comprehensive overall picture, but it seems likely that such excavations will confirm and perhaps amplify the picture which has already been obtained.

C. THE COURSE OF THE VALLUM AND WALL IN GENERAL

Before scientific excavation had established the relative priority of the construction of the Wall and Vallum, antiquaries and archaeologists argued, and still argue to some extent, concerning the relative priority as shown by the course of the Wall and Vallum at certain points. Hodgson argued convincingly in favour of an evident unity of design, and Bruce unhesitatingly agreed. But the arguments of Horsley and other earlier antiquaries were revived and received new emphasis in MacLauchlan's Survey of the Roman Wall. It is clear that MacLauchlan hesitates in placing his loyalty either with the new Hodgson school of contemporaneity, or with the old Camden-Horsley school with their conviction that the Vallum preceded the Wall. His "Memoir" takes its reader per lineam valli, remarks on valuable points of interest and finally convinces him that Horsley was right in his views on the priority of Wall and Vallum. MacLauchlan's was a voice in a wilderness. He was **born** just 20 years too late or 40 years too soon. No importance was attached to his disagreement in principle. But he had drawn attention to those awkward points of close proximity of the Wall to the Vallum, to those evident indications of a lack of unity in design which somehow had to be explained away. Bruce quietly ignored them and continued unperturbed on his clear, straightforward path of contemporaneity. But once Haverfield had shaken faith in this doctrine by his reluctant belief in a Turf Wall from sea to sea the ground was

once more favourable for the flourishing of MacLauchlan's criticisms. In 1922¹ Mr. Simpson added the emphasis of his sound commonsense as well as new archaeological evidence to the sustenance of MacLauchlan's conclusions. But already in 1912 Philip NEWBOLD² in excavations between Limestone Bank and Carrawburgh had been convinced that the Vallum had been constructed first, and had caused turret 30a to be built 40 yards west of its logical position. Since that time the question had persisted, though by 1936 it was clear that in general the Vallum was later in both plan and construction than the Wall. Yet it has become evident in recent years that many local variations occurred in the execution of any general composite plan. It has been suggested that, at Limestone Corner, not only the dislocation of a turret but also the singular outward bulge of the Wall to the north are the results of a pre-existing Vallum in that particular area. It is clear that in the dating of the components of the Wall, such a close approximation has been achieved in the last 30 years that the term "relative priority" means a period as short as 2 or more years rather than a difference of a generation or more. That the Vallum is later than the Wall there can be no reasonable doubt. But in 1949³ Mr. Birley forcibly demonstrated that the problem of "uncomfortable proximity" has never been adequately explained. He proceeded by stating his own ingenious hypothesis, once closely connected with the purpose of the Vallum.

"The places where the close proximity of the Wall and Vallum to one another has compelled the Romans to modify their basic designs - for example between Turf Wall milecastles 49-50 or milecastles 30-31 - and the pre-existence of the service-road and its selection as the line around 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

This attractive hypothesis presupposes the existence of a "service road",⁴ a road concerning which there is much diversity of opinion amongst Wall students themselves; it also depends on whether the Vallum did follow such a service road if one had existed. Both points are as yet incapable of proof but the problem, whether one agrees with Mr. Birley or not with regard to its solution, has once more been raised, and some attempt at solution ought to be made.

It would not be inappropriate to list the places where the Wall and Vallum come uncomfortably close. MacLauchlan made at least two valuable contributions to the list and implies others, both in his descriptions and on his map. He notes in particular:⁵ (1) Near the Iron Sign Inn between Heddon and Down Hill. (2) From Chollerford to Sewingshields, especially at Limestone Corner and west of Carraw. Excluding the relationship of forts and the Vallum, a study both of maps and ~~on~~ the ground produces the following ^{points} in geographical order from east to west:

1. Near milecastle 10 and Walbottle Dene.
2. At Heddon-on-the-Wall, where there are only 35 yards between Wall and Vallum.
3. Eppies Hill, west of the Iron Sign Inn, the works are within 30 yards of one another.

4. Milecastle 17 - 300 yards west of it the two come almost in contact.
5. Halton Shields, milecastle 20.
6. Wall Fell milecastle 24.
7. West of Planetrees.
8. Limestone Corner.
9. Between milecastles 32 and 33.
10. Poltross Burn milecastle 48.
11. Harrows' Scar to High House - milecastles 49 to 50.
12. Banks.
13. Hurtleton, beyond milecastle 57, the works are 35 yards apart.
14. Between Wallfoot and Whiteclosegate - beyond milecastle 63 the Vallum shaves close by ~~the~~ Wall.
15. Between milecastles 67 and 68.
16. Kirkandrews.
17. Milecastle 78.

1. At Milecastle 10, the Vallum is pursuing ^a straight course up to the top of the hill and thus approaches the Wall just before crossing the Dene.
2. On top of the Great Hill both Wall and Vallum change direction slightly: the Wall bends southwards just as it does to include the nicks of the 'crag's.
3. The works are closest on top of Eppies Hill; then both slightly change direction.
4. Once more on the top of a hill; the Wall changes its direction slightly.
5. The works are approaching the top of Carr Hill; then both change direction.
6. Milecastle 24 is on a slight rise, and both works alter their bearings just beyond.
7. As they approach the hollow at the bottom of the steep Brunton Bank they are close; they diverge slowly on the gentler slope.

8. To be considered in full below. On top of a hill. Complete change of direction for both works.
9. Here the Wall approaches the Vallum because it is both avoiding a bog and securing the crown of the hill.
10. The western side of a river crossing.
11. To be dealt with below.
12. The bottom of a hill.
13. Both make a change in direction.
14. Not very close, but seem to approach one another slowly then change direction.
15. On high ground again. But beyond here the Solway estuary makes a reasonably straight course for the Wall impossible.
16. The top of a hill once more.
17. The Wall and Vallum both take the obvious course and in doing so come accidentally close together.

It is clear that in practically every case the Wall and Vallum approach one another at the top of a hill, or occasionally at the bottom of a steep slope such as at river-crossings. In a number of examples both structures change direction slightly, and not just one or the other. Moreover the Vallum in such a change of direction bends before the Wall does, suggesting that the Wall was there first rather than vice-versa. In every case the Vallum is steering a perfectly straight course. As was the Pfahlgraben in Germany so was the Vallum apparently sighted

from hill-top to hill-top, and constructed in straight lengths with the minimum of modification. Nos. 11, 13, 14, 15 and 17 only cannot be explained away by the presence of a hill or valley or sudden change of direction. But in every case the Vallum steers a direct, unfaltering line, in no way affecting the course of the Wall. Beyond Carlisle the Wall follows the obvious course of the indented coast-line - it approaches the Vallum purely by accident. Too much has been made of these points of uncomfortable proximity. It is really unnecessary to explain them away. A simple study of the siting of both Wall and Vallum readily provides a convincing answer.

Two special cases have been emphasised and therefore merit special treatment. It has been argued that between Birdoswald fort and High House the Vallum could have been moved southwards, but instead it chooses a line so close to the Turf Wall that the north mound has had to be omitted here, as well as further east between milecastle 49 and Birdoswald. Certainly near the escarpment nothing else could be done but omit the north mound. For at least one third of a mile beyond Birdoswald fort the escarpment prevents the placing of the Vallum further south. It is then hardly surprising that for a mere further one third of a mile its course was not diverted to the south. Instead it pursues a straight course deviating only very slightly to accommodate the milecastle, slowly widening the gap between the Turf Wall and itself - so much so that the north

mound could recommence west of milecastle 50. The turf milecastle was clearly the most convenient place to recommence the north mound. A move of the Vallum to the south, allowing and therefore presumably entailing the construction of a north mound as well as a south, would be a trifle absurd since a loose end or beginning of the north mound would necessarily result. By far the simplest solution was the existing one. No pre-existing road is needed to explain it.

The second case, Limestone Corner, seemed deserving of special attention. It seemed clear that by excavation a number of points could be solved or at least elucidated to some extent - points intimately concerning the relationship between the Wall, milecastle, turret, Military Way and Vallum. The short period of a fortnight was devoted to its problems in September 1951.

LIMESTONE CORNER

Newbold's excavations in 1912 caused him to reach the following conclusions:

"Where the Wall and Vallum approach most closely, the distance between the south lip of the fosse and the foot of the north mound of the Vallum is not much more than 50 feet. The two structures slightly and slowly diverge as they proceed westward. This fact, I believe, will account for Carrawburgh east turret lying 40 yards west of its normal position where indeed there would barely be room for it. The Wall could not have been placed further north as the ground slopes away there fairly rapidly. Consequently the constriction of the space between Wall and Vallum leads, it would appear (though I consider further excavations at this point necessary before feeling confident on the matter), to the narrowing of the Military

Way to little more than half its usual width and the displacement of the turret from its normal position; and this fact seems to point to the construction of the Vallum having taken place before the laying out of the Wall, fosse and road."

Excavation since 1912 has shown that the Vallum is later in plan and construction than the milecastles, turrets and the Wall. But how may the apparent dislocation of turret 30~~0~~^a be accounted for? And why does the Wall bulge northwards in such a peculiar manner, as if to allow room for milecastle 30? Two alternative explanations suggest themselves.

1. The Vallum at this point preceded the laying of the Broad Wall foundations, milecastle and turret. In view of the relatively late date given to the Vallum, even before the discovery of an original causeway at Great Chesters, this contingency seemed unlikely from the start. Because of the approximate synchronism between Vallum and Narrow Wall, if for some reason in this sector no Broad Wall foundations and structures had ~~not~~ been laid before the Vallum came along, then one would expect to discover a Narrow Wall on Narrow Foundations in the Limestone Corner area.

Obviously only excavation to determine the width of the Wall in this area could solve the problem. If (a) a Narrow Wall foundation were proved to exist then it would be quite likely though not conclusive, that the Vallum did precede the Wall in this area as it did in the Banks-Birdoswald sector. If (b) Broad Wall foundations were discovered, then because of the known

relative dating of the Broad Wall and Vallum it would seem conclusive that the Wall, its milecastle and turrets preceded the Vallum and were therefore unaffected by the latter's course.

2. Supposing Mr. Birley is right in his suggestion that the Vallum followed a "pre-existing service-road", the conjectural sequence at Limestone Corner would be as follows: the foundation of the Broad Wall, milecastle and turret was laid first following the normal Wall plan, with a "service road" for the use of the milecastle garrison when the milecastle had been erected: next the Vallum constructed round the service road with the latter as its south berm; the addition of a 20-foot ditch, 30-foot berm and 20-foot mound to the north of this service road would understandably cause a dislocation of turret 30a and an "uncomfortable proximity". It is a most attractive hypothesis, but two facts would need to be established to prove it:- (a) that a service-road not only existed, but pre-existed the Vallum; (b) that the foundations or demolished remains of turret 30a could be found in its presumed normal position, 40 yards east of its present position.

Concerning the latter statement two further points must be made: 1. The "normal" position of the turret lies beneath the Military Road and is therefore quite inaccessible. 2. Foundations of a turret 40 yards east are unlikely any way. A consideration of the measurements between the Wall structures given by Newbold makes this point clear. Carrawburgh east turret

lies 594 yards west of milecastle 30, i.e. 54 yards further west than the standard interval known to-day between two structures. If this had not been intended from the first one would expect the next interval, i.e. between turrets 30a and 30b, to have been reduced by 54 yards, and milecastle 31 to follow at the normal 540 yards interval. This is not the case. Carrawburgh west, 30b, is at its normal interval from Carrawburgh east, i.e. 539 yards. The total Wall mile is 1662 yards, i.e. approximately 42 yards longer than the regular Wall mile. The removal of turret 30a from its measured position was originally intended and can have no connection with the course of the Vallum.

This discussion removes any significance which (a) may have possessed. It is clear that whether the Vallum follows a pre-existing service-road or not, it was not the cause of the dislocation of the turret, on which the statement of uncomfortable proximity is founded. The suggestion of a pre-existing service-road is still worth pursuing but it seemed unlikely to have any light to throw on the Vallum-Wall relationship at Limestone Corner. Alternative 2 was thus dropped as a working hypothesis and alternative 1 taken up.

The Excavations

Trench I was cut approximately 68 yards east of the gate of field no. 93 and considerably west of milecastle 30, since

it was intended to avoid the complication of milecastle wing-walls. The Wall had been robbed down to the subsoil, but the loose fill fell away from the northern edge of the Wall position quite clearly, leaving a vertical bank of undisturbed subsoil. It was evident that the Wall had originally been sunk into the subsoil for 10 inches. The subsoil was a reddish sandy material with a clayey feel. On the north edge of the space which had contained the Wall, a clear impression of the footing stone was left embedded in the subsoil - a stone of approximately 11 inches in length and 7 inches in width. A brownish tinge of the subsoil as well as the slight impression obvious to a delicate touch, demonstrated clearly where this footing stone had been. The clay bed betraying the Wall foundations, sprinkled with lime, was traced southwards for 7 feet 6 inches when the limey spread as well as the limey fill above stopped abruptly in a vertical line almost as distinct as the northern edge of the Wall. It was clear, although not one stone remained in position, that the Narrow Wall grouted in lime had existed at this point, measuring 7 feet 6 inches in width. But clay and cobble foundations proceeded for another 2 feet 6 inches. The edging stones on the south had completely disappeared, leaving a rather indeterminate edge. The reddish subsoil recurs beyond the clay. Although no Wall remained, Broad Foundations were clearly there.

Trench II was dug well to the east of milecastle 30 to confirm the evidence of Trench I and in a position suggestive

that some considerable height of Wall yet remained.

Once more the soft brown soil with limey content showed that we were dealing with the Narrow Wall and its looting in part by stone robbers. The edging and footing course was found in position on the north side. The limey topsoil went approximately down to the base of the footing course on the north. Clearly this footing course had not been sunk above 1 to 2 inches into the subsoil. The limespread foundations of clay were traced southwards only to discover substantial Wall coring⁷. The south face of the Narrow Wall (7 feet 9 inches wide at this point) was standing in excellent condition for 3 courses above the offset footing course, which was a huge stone.⁸ The clay and cobble foundations were clearly traceable jutting southwards beneath the Wall,⁹ to a distance of 10 feet 6 inches from the northern edge of the Wall. The existence of a Narrow Wall on Broad Foundations was proved. A small amount of pottery was produced by the limey fill including fragments of a black fumed cooking pot.

Conclusions

The existence of Broad Wall Foundations proves that the Wall at Limestone Corner was laid before the Vallum was constructed or even thought of. The bulge northwards of the Wall and the apparent dislocation of turret 30a cannot be explained in terms of the pre-existence of the Vallum. A careful study of the course of the Wall at this point immediately provides a simple answer. The Wall bulges to follow the northernmost

edge of the hill. Immediately in front of the Wall ditch, the hill drops sharply though not precipitously to the north. The Wall was clearly placed to give the greatest possible disadvantage to a northern enemy, which could not ~~possibly~~ have been ^{so effectively} achieved had the Wall been placed further south, since the enemy would have been able to secure a foothold on the plateau-like hill-top. To anyone who has attempted to walk up the steep hill from the north, the tremendous odds against a northern enemy are immediately recognisable, not to mention the crowning of the hill by a Wall and milecastle.

The gentle twist to the south-west followed by a sharp turn back into its normal position ~~are~~^{is} easily explicable. The Wall is merely following the contour of the hill which now swings back towards the south. The sharp turn represents simply a return to the normal east-west direction.

An examination of a map provides the answer to the apparent dislocation of the turret. It is by now a commonplace that milecastles and turrets were built as isolated structures and ready to bond with the Great Wall which would bind them together. The bulge northwards adds a distance of **approximately 30 yards or so** to a straighter course which may well have been planned. In other words the turret was constructed before the milecastle in this case, and was measured from turret 29a, below the corner, in a straight line to the top of the hill - where the milecastle was to be - a line followed roughly by the modern road. The

turret constructors not concerned with Wall foundation laying or milecastle building, naturally would not suspect that those responsible for the Wall would bulge outwards to the north. They constructed turret 30a at, to them, approximately the correct distance from 29b or the planned site of milecastle 30, then turret 30b and milecastle 31 at the correct interval roughly. This obviously seems to have been the true reason for the apparent dislocation. An extra 30 yards were added by the layers of the Wall foundation following the most suitable lie of the land. The Vallum is not responsible for the behaviour of the Wall nor for the situation of the turret. If a case for close proximity is still arguable it may be answered as in practically every other example. Here as elsewhere the Vallum has been sighted from Tower Tye Hill to the next, just as had been done with the Wall. Its course is perfectly straight. At the top of the hill it changed its direction to a due west course, much as the Wall had done before it. There was no reason why it should have bent sharply as the Wall had done when it could be constructed on its usual direct course, especially since it did not approach the Wall so closely as to be obliged to contract its normal proportions nor omit its north mound.

PART IV.

PURPOSE OF THE VALLUM.

A. The Problem of the Purpose of the Vallum.

Despite the persistent, authoritative challenge to the veracity of the southern defence doctrine, a challenge first shrewdly yet emphatically pronounced by Neilson, supported later by Professor Haverfield, whose cautious reluctance forbade him to state any novel opinion without convincing evidence; although a change, dating roughly from Neilson's challenge, in opinion of the British and German military engineer officers, viz. General Pitt-Rivers, General Sir William Crossman, General O. von Sarwey, the Military Director of the German Limeskommission, resulted in a complete conviction as to the non-military purpose of the Vallum - nevertheless loyalty to and devoted worship of Dr. Bruce and the outmoded Hadrianic theorists, made it inevitable that the southern defence theory should persist in spite of field surveys and scientific excavations, well into the twentieth century: so much so that Messrs. Simpson and Shaw found it necessary to devote forty-three pages of their scholarly paper on the "Purpose and date of the Vallum and its Crossings" to a denouncing of any suggestion of a military defensive aim, and to the establishment of a pre-Wall dating (albeit since proved incorrect) and non-military purpose of the Vallum. It is interesting to observe that even today, in spite of frequently posed and refuted hypotheses, the southern defence theory retains a glamour irresistible to amateurs who know little concerning the course and terrain of the earthwork. Perhaps no theory since has

enjoyed so long a vogue as has that of Bruce. This is necessarily so since frequent excavation, which did not disturb the tranquil conviction of Bruce and his followers. until almost half a century after the initial statement of their theory, now permits an hypothesis to stand or fall for a mere decade or even less. Perhaps Mr. John Morris is right when he states:²

"The problem of its (i.e. the Vallum's) purpose cannot be solved by archaeology alone." Thus it is with natural hesitation that Wall authorities and students express an opinion concerning the purpose of the Vallum, which is perhaps the favourite problem which others not directly concerned, gleefully and maliciously like to pose. Before a considered opinion - not necessarily a conviction - may be expressed, it is useful to summarise the outstanding purposes ascribed to the Vallum during the twentieth century and essential to discuss their inadequacies.

i. Professor Haverfield. The first systematic excavator of the Vallum in 1911 expressed his final opinion thus:³

"The meaning of the Vallum is much more doubtful The two facts that are clear about it are, that it is a Roman work, no older than Hadrian (if so old), and that it was not intended like the Wall for military defence. Probably it is contemporaneous with either the turf wall or the Stone Wall, and marked some limit of the civil province of Britain. Beyond this we cannot at present go."

ii. John P. Gibson.⁴ Gibson, one of the early pioneers of excavation could not accept Haverfield's civil boundary theory. His own opinion was stated thus:

"The Vallum was driven as a great sap through the isthmus, when the camps were made, and it formed the means of communication between them. The Vallum, camps and Wall were all part of one plan. The Vallum and the camps were made first and the Stone Wall followed at no great interval of time. The Vallum formed an easy means of communication between the camps and when it was made, was doubtless protected by a stockade, so that by merely closing the advanced end nightly, every foot of captured ground could easily be held and the berm of the Vallum would form an excellent camping ground for troops. As a piece of road engineering, the Vallum takes an ideally perfect line. It leads by the easiest gradients from the gateway on one camp to the next, usually passing along the rear of camps to avail themselves of their protection."

An estimation of the importance of the theories of both Haverfield and Gibson will be given below.

iii. F. G. Simpson and R. C. Shaw⁵

The importance of Messrs. Simpson and Shaw in the refutation of a military defensive purpose is unmeasurable. Although all the points they discussed have been mentioned casually in the section "per lineam valli" above, it is not redundant to summarise the main arguments expressed in 1922 here.

a. 1. Theories of defence against the north and south have always relied on sloping sections, which are really exceptional in relation to the whole length of the work. The normal section of the Vallum is impressively unmilitary.

2. The marginal mound bears no constant relation to the ditch.

3. No trace whatsoever of a palisade has been observed.

4. The general line of the Vallum bears no constant relation to the physical features of the country through which it passes.

"Whatever considerations weighed with the engineers during the

survey of its course, they were certainly not consistently those of military strategy."

i. Certain points are in favour of a defence against the south. Down Hill; the Craggle+Hill-Banks sector, Cawfields and Winshields where the command is definitely northern; between Great Chesters and Carvoran, and in the Winshields sector the Vallum skirts the northern edge of marshland.

ii. Equally weighty considerations are against a defence versus the south. The King's Hill-Sewingshields sector, and the Portgate area where the command is southern; between High Shield and Peel Crag, the Vallum skirts the southern edge of marshland; near Walltown a small hill completely overlooks the earthwork from the south, and the south mound merges with the slope; similar conditions recur at Blakelaw and Mosskennels; finally between Housesteads and Bradley, the line is "not only neutral but so weak as surely to constitute for the military a reductio ad absurdum."

b. Not content with merely refuting a theory, Simpson and Shaw substitute another purpose.

The nature and course of the Vallum compelled them to think that the ditch was the important feature. This proposition received valuable support from the evidence of the preservation of the ditch in boggy areas. Never is the ditch omitted, though its proportions may occasionally be contracted. Further, the marginal mound attests to a later recutting and cleaning out of the ditch.

The writers consequently clearly re-establish the Haverfield theory, the probability of which they considered had by 1922 seriously advanced as a result of progress of research.

"The earthwork was a boundary, or frontier mark, the actual line of delimitation being the ditch, and abrupt impression of which was to be increased by the broad, double-track of the mounds."⁸

c. Their dating of the Vallum to a pre-Wall period, led them to suggest that the Vallum in one of its functions, i.e. as an obstacle for the "prevention of smuggling, minor raiding and thieving" was later superseded by the Wall. Though their dating is now quite untenable, the inference concerning a purpose of both the Wall and Vallum must be borne in mind.

Their final position Messrs. Simpson and Shaw summarise thus: the Vallum with its forts wholly to the north "represent an original scheme designed to meet theoretical requirements, the first expression of Hadrian's idea of finally fixed frontiers. In the case of the Vallum, alone of all frontier works, the forts are placed outside the actual boundary. That this was done intentionally has already been shown. Such an arrangement seems to indicate a legal line of demarcation between the areas of civil and military administration, between the province and a belt of cleared country in a military occupation. It is not essential that such a boundary work should present an obstacle in the military sense."⁹

The Wall sequence outlined above places the Vallum in an historical setting which seems likely to stand the test of time and the spade. Though the greater part of the Simpson-Shaw theory is outmoded, nevertheless their scholarly treatment of the problem, their refutation of the southern defence theory, their

stress on the non-military character of the Vallum, have coloured all later investigations of the Wall problem and are of enduring importance.

iv. Professor R. G. Collingwood

Professor Collingwood, perhaps the greatest Romano-British archaeologist and historian of the twentieth century, with his clear insight into and recognition of the problems which the Roman occupation of Britain presented, with his fertile imaginative brain, supporting with his accustomed enthusiasm and intellect from time to time certain prevalent theories of his day, could not fail to leave behind him a theory on the subject which has caused so much vacillating hope and despair - the "inscrutable" Vallum.

At first he supported the Simpson-Shaw theory of both the date and purpose of the Vallum. But by the time of the publication of his most up-to-date survey of the Roman province of Britain in 1937,¹⁰ he had completely altered his ideas, no doubt as a result of the progress of knowledge by excavation. It was clear by then that the Vallum could not possibly be earlier than the Wall, thus refuting not only Mr. Simpson's but also Mr. Birley's¹¹ assignments of date. He continued to agree with the Simpson-Shaw hypothesis to the extent that the Vallum "in its original shape was a formidable obstacle to traffic but incapable of military defence, and so designed indeed, as to look ostentatiously unmilitary The earthwork was a second obstacle parallel to the Wall and provided with a corresponding series of controlled openings for traffic, differing from it in its deliberately unmilitary design."¹²

At this point he proceeds further but on different lines. He discusses the dual function of a Roman frontier: firstly the military or defensive, secondly the financial or customs aspect. He reminds his readers of how the imperial service representing the former, and the procuratorial the latter, with in effect a dual command of the province, were not only separate, but often antagonistic. The development of frontier policy naturally reaching its climax in Hadrian's Wall would no doubt carry with it at least one concomitant difficulty - the question of how to provide for customs officers.

"Hadrian, a stickler for military discipline, may well have thought it unwise to give the procurator's men an official position at fort gateways, where the authority of the commandant should be undisputed. The simplest solution on paper, though a cumbrous and expensive one would be to have a second barrier behind the Wall; to make this barrier look as unmilitary as possible consistent with efficiency; and to provide it with a crossing opposite each fort, where customs officers could do their work. The Wall as a whole would be controlled by the governor, the Vallum by the procurator; the distinction between the two reflecting and symbolising the separation between the military and financial services."¹³

Professor Collingwood, as is the custom with all true archaeologists, admits that the theory is not necessarily correct but at least it fitted the facts. His ingeniously attractive hypothesis never gained support amongst Wall archaeologists, though its conclusiveness is unchallenged in any but Society transactions which have not reached even the widest possible University or antiquarian public. His theory is founded upon undeniable fact¹⁴ established 15 years earlier than the publication of his theory.

But though he admitted the possibility of the existence of milecastle causeways across the Vallum he never fully appreciated their significance nor indeed that of the "patrol-track" discovered in the High House sector. These facts, together with a total lack of accommodation for such nebulous customs officials support a seemingly indubitable conclusion that the Vallum and its causeways, the Wall and its structures are all intimately connected and belong to the same authority. There is no reason whatsoever to suppose that the Vallum belonged to any authority but the military. On these grounds alone, Professor Collingwood's theory is quite unacceptable to the taste of students of the Wall complex today.

B. RECENT STATEMENTS CONCERNING THE PURPOSE OF THE VALLUM.i. Professor I. A. Richmond.

In 1938 Professor Richmond published an excellent summary of the problems of the Wall, showed how the sequence in the frequent changes of plan of the construction of the Wall ~~were~~ ^{was} slowly becoming elucidated and produced a clear, precise, authoritative statement of the purpose and relative date of the Vallum. He showed that Collingwood's theory "wins no support from continued enquiry, and the organisation of the Vallum may now be demonstrated as intimately linked with that of the Wall." He explains concisely the functions of fort and milecastle causeways, and of the patrol-track recently discovered on the south berm of the Vallum.

"The Vallum takes its place as a prohibited zone delimiting the south side of the military area, an unmistakable belt one hundred feet wide in which an obstacle is provided by the great ditch. Neither commerce nor interference with the soldiery could take place across it unchecked."

It represents a renewed testimony of faith in the Haverfield doctrine which had grown steadily more articulate through the mind and pen of Messrs. Simpson and Shaw, and Professor Collingwood. Again in 1947 Professor Richmond reiterates the conviction that:

"the Vallum turns out to be a non-military boundary policed by military patrols, a demarcation as opposed to a defence. It is the southern boundary of the military zone."²

Again in 1950 as an answer to the new "service-road hypothesis" framed in barest outline on the Centenary Pilgrimage, Professor

Richmond enlarges on and explains his conviction concerning the purpose of the Vallum. His statement is quoted in full.

"Haverfield suggested that it was the civil boundary of the province and there is no doubt that it was so de facto if not de iure, in that civilians were certainly not intended to cross it except at forts and under strict supervision What reason, then, dictated the need for this strong, non-defensive obstacle against the hinterland? Perhaps an analogy from recent conditions may help. In war-time Britain, where, in default of invasion, nothing worse than sabotage by enemy agents or more serious than unauthorised entry and exit was feared, installations of military importance were regularly screened by formidable hedges of barbed wire, impossible to jump and difficult to penetrate. On Hadrian's Wall it might be argued that no such provision was needed away from forts and milecastles. But it was in fact, less the forts and milecastles than the widely spaced and isolated turrets which were vulnerable to unauthorised intrusion, and for the protection of the turrets, a continuous obstacle was precisely what was needed. The implication is then, that attempts to interfere with the Wall garrison, or even to cross the barrier by way of escape from the south, were anticipated. Nor need such escapades have been viewed as potentially frequent. In a scheme worked out with the tactical elaboration devoted to the Wall at this stage it was enough to have seen the possibility to take measures to guard against it. Yet a view of the wild fells to the south is also enough to satisfy the enquirer that the possibility was real and the potential strain upon the Wall-garrison worth that insurance which the Vallum represents."³

After vindicating his own position thus he proceeds to attack the idea of a "service-road" existing on the south berm of the Vallum. He demonstrates that to suppose that such a line was used by the builders of the Wall and particularly that this "service-road" should have dictated the course of the Vallum is quite absurd. A discussion of these points must be deferred until the next section, but one statement appertaining to lateral communications

in the Wall zone made by Professor Richmond is worthy of note.

The structures on the Wall "were also connected for everyday purposes by the cleared strip of the Vallum, and the track which occupied its south berm. This track is not a first class military road like the Stanegate, but is heavily surfaced where the subsoil makes this necessary; and there is at least one sector at Limestone Corner where its line is so blocked with masses of stone from the rock-cut ditch as to turn it into a mere mule-track and an awkward one at that."

It is evident that the real objection to the "service-road" hypothesis in Professor Richmond's eyes is not the road itself, but its pre-existence, determining the course which the Vallum later takes.

ii. E. Birley and the "Service-road" hypothesis⁴

This hypothesis is not strictly original in its general conception, but looks back to the days of the Rev. John Horsley, its prophet. Though wrong in his mural theory, Horsley ascribed the north mound of the Vallum to Agricola as a frontier road. The important inference is that the north mound of the Vallum was a good road-line. A century later, the Rev. John Hodgson thought that "the Vallum was a line in protection of the military way further south between the stations."

He also noted that in the High House sector "the Vallum has two ditches, probably intended for draining the military road that lay between them."

But perhaps the most important advocate of the explanation of the Vallum as a road-line was the first surveyor of the Wall, Henry MacLauchlan. He explicitly notes in his "Memoir"⁵

"the north mound of the Vallum, the boldness with which its curves are made, and the shelter it seeks in the neighbourhood of high ground, lead to the conclusion that it was the line of a road, laid out with great skill for the purpose of connecting military stations."

It is now apparent why Horsley and MacLauchlan had thought that the North mound of the Vallum was a road. Mr. Simpson's researches proved that between milecastle 20 and Down Hill; from Limestone Bank to beyond Carrawburgh; at Cawfields and at Poltross Burn, the Military Way ran along the north mound,⁶ presumably because there was inadequate room between the Vallum and the Wall. It was tacitly assumed at the time that the Military Way, which may be seen quite obviously independent of the Vallum

particularly in the central sector of the Wall, synchronised with the Wall. That the Military Way was later than the crossings system of the Vallum was indeed correct, but the inference that the Vallum preceded the Wall was unwarrantable.

In the meantime at least two die-hards (one already mentioned) had proclaimed their faith in the communication tradition. In 1891 a party from Newcastle went to inspect the Vallum at Down Hill and on Limestone Bank. The Proceedings¹ record the following for the interest of posterity:

"The theory of one member who was of the opinion that the works of the Vallum were simply to defend a road which went along the south berm, between the marginal mound and the southagger, was rather rudely shaken here as the solid blocks of basalt which were taken out of the ditch are lying higgledy-piggledy (most probably where Roman hands left them) on the space over which any such road was likely to go."

The name of the member is not given. But it is a remarkably early affirmation of an hypothesis concerning a road on the south berm, though the present one was formulated unaware of the first!

Haverfield failed to discover any trace of road-work connected with the Vallum. Yet J. P. Gibson refused to believe his legal theory and reiterated MacLauchlan's view that "as a piece of road engineering, the Vallum takes an ideally perfect line."

Although Horsley and MacLauchlan had ascribed to the north rampart only a purpose of communication, it is a natural conclusion because of the parallelism of the components of the

Vallum, that the earthwork was an admirable road-line. Gibson added his conviction of its suitability for lateral communication though he is deliberately vague concerning the position of such a road. The unknown member from Newcastle pinned such a road remarkably and unaccountably on to the south berm - a suggestion tantalizingly silent as to the reasons behind it. Dr. Richmond admits that the Vallum was laid out "like a Roman road". Finally, the very fact that the Military way subsequently made use of the Vallum north mound or berm where it is sufficiently close to the Wall, renders the supposition that the course the Vallum pursues is an admirable road-line almost vocal in clarity. It cannot be denied by anyone who has studied its course. It proceeds in straight unfaltering stretches, clearly sighted on the same principles as are Roman roads, not only on the eastern and western thirds, but also throughout the central sector, where, to use a simile once used concerning the Stanegate, its line is like the taut string to a bow which is represented by the Wall surmounting the crags.

Such then are the a priori reasons for supposing the Vallum, whatever other purposes be ascribed to it, to be a suitable road-line.

The arguments of such road protagonists reached their climax and received coherent expression, reviewed in the light of recent research per lineam valli in 1949. In recounting the progress of knowledge concerning the frontier works, Mr. Birley speaks of the Vallum thus:

...."but the reasons for its course and construction are only just beginning to become plain, and as yet no comprehensive statement of them has been produced - indeed a good deal more excavation will have to be undertaken before a comprehensive statement could be justified. But the following points now seem reasonably clear 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 the 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..... The effect of the new barrier was to provide strict control of traffic. Traffic from the south could only pass through its line where branch or trunk roads came up to the Wall forts or passed through towards northern outposts; lateral traffic, admitted at those points, could proceed without further control along the service-road, but its access to the branch roads was closely controlled by the garrisons of the forts and milecastles as is shown by the arrangements for closing the causeways which carried those branch roads across the ditch."

Wall archaeologists are themselves in apparent disagreement on the question of a "service-road". The disagreement partly hinges on the meaning of the term "service-road". Space would not permit a full explanation of the hypothesis in 1949, but numerous discussions with Mr. Birley lead to the following clarification. Mr. Birley visualises a lightly-metalled track constructed for the use of the milecastle garrisons, perhaps even of fort garrisons: though whether some of the forts were

habitable before the Vallum was constructed is a moot point; in all probability the milecastles were in use. The "service-road" was intended as a direct lateral communication, but not for the heaviest type of traffic, which would no doubt travel on the substantially constructed Stanegate. Professor Richmond misinterprets the meaning of the term when he shows how useless the course of such an hypothetical road followed later by the Vallum, in the central sector of the Wall would be for the builders of the Wall. The "service-road" is not intended to service the builders as Professor Richmond thinks but the earliest garrisons of the Wall, before the Vallum was contemplated. When the Vallum was constructed round it it continued to service the garrisons of both Wall forts and milecastles. It represents an Hadrianic equivalent of the later Military Way. That some means of lateral communication, ^{existed} no matter how slight, further north than the Stanegate which was inconveniently situated generally 2 to 4 miles to the south of the Wall area, ~~existed~~ is reasonable to suppose. The very existence of the Military Way seems to prove the point. Mr. Birley suggests that such a road is not usually heavily or even substantially metalled, and thus capable of taking the heaviest vehicles, but rather one to accommodate the transportation of stores and the like, from fort to milecastle, and milecastle to milecastle. It is visualised as a secondary means of lateral communication connected at least by through roads from each fort to the main

lateral road, the Stanegate (and its counterpart from Corbridge to Newcastle, if one existed). Such branch roads would be controlled as was the case at Benwell by monumental gateways over the centre of the Vallum causeways. At each fort, not only the crossing over the Vallum to the fort but also entry on to the south berm would be regulated.

Similar causeways have been discovered at Benwell, Housesteads, Great Chesters and Birdoswald, though traces of monumental gateways were apparent at only two of the four, Benwell and Birdoswald. The roadway at Benwell passing over the causeway has been traced for some little distance due southward. It seems clear that Great Chesters is directly connected with the Stanegate. Both MacLauchlan and Horsley were adamant in their beliefs that branch roads connected certain Wall forts with the Stanegate. Horsley mentions a road from Housesteads to Vindolanda:

"There may have been a road to Little Chesters, but it is not certain. Such a military way might be of service for marching forces from one of these stations to the other: so it might also be further useful for the more convenient passage from Housesteads to Carvoran, or to any other stations along the Wall."⁸

MacLauchlan specifically mentions⁹ a road issuing from Housesteads and running via Grindon Hill on to the Stanegate. Mr. Birley points out that there may be some intimate connection between this hypothetical road to the east and the slight angle of Housesteads causeway to the Vallum ditch. MacLauchlan apparently

looked for a road from Carrawburgh down to the Stanegate but could detect no trace of one. Despite the lack of emphatic evidence in favour, few, if any, would dispute the idea that some if not all forts were connected by branch roads to the Stanegate. Indeed for vigorous "service-road" denounciators, such roads are an indispensable link in their arguments.

It is significant to note that the causeway over the Vallum at Birdoswald did not give access through the south mound and thence immediately towards the south, since the Irthing escarpment prevented it. Consequently the Vallum south mound was continuous. The causeway there provided access from the fort on to the south berm, and no further. Moreover the river Irthing prevents a direct connection between Birdoswald fort, and indeed practically the whole of the Turf Wall sector, and the Stanegate. It seems barely conceivable that there should be no means whatsoever of lateral communication north of the Irthing. This, together with the Birdoswald evidence, gives convincing reason for supposing that traffic wishing to reach Birdoswald would automatically use the south berm and then the causeway of the Vallum. Though the Vallum ditch was soon filled in at this point,¹⁰ there is no reason to suppose that the use of the causeway or even the south berm was discontinued.

Excavations in the Turf Wall sector at two milecastles showed that the relationship between the Vallum and the milecastles was in all essentials the same as at Birdoswald fort,

and thus quite different from the normal situation at Wall forts. In the original state of affairs, a milecastle causeway over the Vallum gave access to the south berm only, the continuous south mound prohibiting outlet to the south. Traffic of any kind approaching from the south could only cross to the military zone via the Vallum at the nearest point of an original roadway through the south mound, wherever that was. It could only reach Birdoswald fort and at least milecastles 50 and 51 by means of the south berm and respective causeways. If identical conditions are assumed at all milecastles (and recent excavations at the milecastle 23 causeway showed a sequence almost identical with that at High House) then the picture that emerges may be described thus: traffic would presumably travel along the Stanegate until the appropriate branch road to a fort was reached, and then either cross over the causeway to enter the fort, or after checking, proceed along the south berm to the prescribed milecastle where once more a check would probably be made before access was allowed over the causeway and up to the milecastle. The term "traffic" has been left deliberately vague. Obviously very heavy vehicles would demand a substantial roadway along the berm - a question to be dealt with below¹¹. But lighter vehicles, pack-horses, persons and the like would find a "green road" or lightly-metalled track an ample sufficiency. The need for careful watch and control over traffic from the south needs no stress or elaboration.

The "service-road" and its close, regulated connections with the main lateral roadway, the Stanegate, may have had such connections elsewhere than at forts. Such branch roads originated in the realms of thought of Horsley and MacLauchlan. The latter remarks on the peculiar behaviour of the Vallum at Down Hill and at High Shield near Bradley. At Down Hill it bends sharply south-westwards, and then twists suddenly back to a westward course. It is customarily interpreted as avoiding the "rocky summit of Down Hill", a fact too obvious to need elaboration. A similar bend occurs at High Shield, and is usually interpreted as skirting the limits of a bog. Boggy ground does indeed exist within the bend, whilst the Vallum on its westward course, lies on a ridge high above the level of the bog. Both explanations may be considered adequate. But concerning the Bradley bend, MacLauchlan raises a most interesting point:-

"There is no appearance of any connection from this angle with the bridle-way before mentioned down to Chesterholm, but it seems probable that there was, and that the curve in the Vallum which it is conjectured formed a line of a road or communication between stations in its first construction, served a double purpose as has already been supposed of the bend in the Vallum at Down Hills."¹²

The suggestion is that the Vallum road (now a south berm road) is connected by a branch, leaving the Vallum by a gap through the south mound and travelling in a direct line (a) to Corbridge fort and the Stanegate, and (b) to Chesterholm and the Stanegate. It does seem a strange coincidence that the

bends identical in character should bear identical relationships to ~~a~~ Stanegate forts. Here are two obvious places where branch-roads joining the Vallum to the Stanegate might be expected, and where the hypothesis might be put to the test by the spade. In June, 1952, a small trial excavation at Down Hill revealed limestone metalling¹³ not only on the south berm of the Vallum on the curve to the south-west, but also south¹⁴ of the position where it twists abruptly back to its normal east-west course. In both cases the surface seems to have been well trodden. But in view of the nearness to the rock and the consequent stoney character of the thin layer of topsoil above it, it would be unwise to say that a branch road left the Vallum in a south-westerly direction at this point. Moreover there is evidence of a farm-track having cut obliquely across the Vallum at precisely this point. It would be necessary to trace such a track for some considerable distance to say definitely where it was leading and only then could a decision be reached as to whether the track was a Roman branch road or not.

Other branch roads may exist though it would be unjustifiable to explain every bend of the Vallum in a similar way. Most bends represent a change of direction rather than a sudden modification of its course, and have already been discussed. The slight angle in the earthwork immediately north of Haltwhistle Burn Fort, also on the Stanegate, may, however, be analogous. The bend in the Vallum beyond High House milecastle 50 represents

a position suitable for a branch road to Nether Denton, but such a road would have to cross the river Irthing at some point. It ought not to be forgotten that no Hadrianic roadway feeding the Birdoswald-High House area is known since for at least three consecutive causeways no outlet is provided through the south mound. This lack adds weight to the presumption of a branch road down to the Stanegate via High House and Nether Denton, though perhaps a shorter connection~~is~~ link may have been provided at Willowford or Poltross Burn.

The whole problem of branch roads connecting not only Wall forts but also the Vallum to the Stanegate, at least at High House, Down Hill, and Bradley, ought to be placed on the agenda for future research. The testimonies of such excellent field archaeologists as Horsley and MacLauchlan may not be dismissed lightly.

Perhaps the greatest difficulty encountered by the "service-road" hypothesis is its own terminology which suggests a slightly more elaborate structure than was intended by its originator. To some extent, the arguments presented in favour of the use of the south berm as a communication have been justified by archaeological evidence. Though Haverfield discovered no trace of a road in his sections across the Vallum, all approximately in the same sector, in 1936 excavations at High House proved the existence of metalling not only over the milecastle causeway itself, but also gravel along the south berm,

from the south mound northwards for 15 feet. No gravel existed on the north berm. It was christened a "patrol-track" as its position and nature in fact suggest was its purpose. The surfacing was sporadic. But further west of the milecastle in High House paddock heavy road-bottoming was discovered, and the south mound revetted in stone. That a patrol-track exists at least sporadically on the south berm has never since that time been denied. But could a patrol-track account for the unique stretch of heavy road-bottoming? In 1947 Messrs. C. E. Stevens and E. Birley, at the time formulating the "service-road" theory, cut two sections south of milecastles 34 and 36.¹⁶ Near milecastle 34 a lightly-metalled track was found which had grassed over before the marginal mound formed, thus proving the relative priority of the former. The section between milecastle 36 and Knag Burn proved that the south berm ran over solid rock, thus obviating any need for metalling. On this analogy, it is interesting to note Haverfield's section at Bleatarn¹⁷ where a stretch 16 feet wide of red sandstone rock lay immediately below the topsoil of the south berm. In January 1949 a section cut across the south berm of the Vallum at High Shield by Mr. Birley revealed light metalling.¹⁸ In July 1950, in an effort to disprove the "service-road" theory Mr. Simpson cut two sections across the south berm at Mosskennels.¹⁹ In the west trench, small whin cobbles were found in a thick layer across the south berm, which were stated after geological examination to be "rock fragments", not

"glacial boulders", and "more likely pieces of Whin Sill cut by the Vallum ditch diggers and thrown to the south in an haphazard manner."²⁰ In the east trench, conditions were quite different and no such "haphazard" cobbles existed on the south berm. Geological analysis stated:

"The fragments of shale in the principal dark band are soft, but uncrushed, even when placed on edge. This suggests that the shale thrown up by the excavators on the southern bank of the ditch was never trodden on and was buried by the clay immediately after. There is no suggestion either of a charcoal layer or any other layer indicating a possible foot-path."

The "haphazard" whinstones of trench one must be paralleled by the cobbles of the patrol-track. They stretched for a width of 8 to 10 feet across the berm, from the lip southwards. That the ditch diggers had left them on the berm deliberately seems obvious since normally all upcast material was placed in the mounds of the Vallum. This section is clearly in favour of the supposition that some kind of road existed on the south berm. It is more difficult to interpret the meaning of the second trench. No apparent sign of cobbling existed and therefore this section seems to negative the "service-road" idea.

Excavations undertaken by the writer have added considerably to the list of areas investigated as well as the knowledge of the problem. One small section in 1950 across the south berm south of Cockmount Hill failed to reveal metalling of any kind

but exhibited merely a solid, compact boulder clay subsoil.

Excavations at Carvoran in September 1951²¹, not concerned with the road question, disclosed quite fortuitously sparse light metalling for at least half the width of the south berm. Recent work at High House, described below,²² proved ~~that~~ the "heavy road-bottoming" of 1936 to be nothing of the kind but part of the structure of a post-Roman corn-drying kiln, and therefore quite undisconnected with the Vallum. That sporadic cobbling exists in that area however was confirmed by a second trench which revealed a track of cobbles, five feet wide, immediately north of the south mound. A section across the full width of the Vallum down the hill west of Limestone Corner exhibited a track²³ of sparse whin cobbles, seven feet wide, roughly in the centre of the south berm. The trench was cut in a less rocky area where the large blocks do not exist on the south berm. The cobbling resembled closely the High House patrol-track. At Down Hill in June 1952 one small trench across the south berm revealed convincing light road-metalling²⁴ stretching from 8 feet south of the marginal mound to the latter's commencement. Yet partial excavation of the milecastle causeway at Stanley Plantation failed to disclose metalling of any kind along the south berm. In fact the old turf line could be clearly distinguished.

Such is the total of evidence for the existence of a sporadic track along the south berm of the Vallum. One fact emerges with dramatic clarity - that whether the south berm of the Vallum was

used for traffic or communications of any kind, such activity was not sufficiently great or heavy to warrant the establishment of a substantial continuous track. Since the "service road" advocates never for a moment suggested that the south berm was more than a lightly-metalled road, the theory cannot be ruled out of court as disproved.

The hardest pill to swallow concerning the "service road" hypothesis is the idea that it pre-existed the ditch, berms and mounds of the Vallum. The fact that such pre-existence is not responsible for the close proximity which the Vallum occasionally takes in relation to the Wall does not in any way explain away the suggestion of the existence of a lightly metalled road or track for the use of milecastle garrisons and perhaps fort garrisons before the construction of the Vallum. The approximate date given to the construction of the Vallum is circa A.D. 128 - 135. The Wall was commenced in A.D. 122 and a number of the milecastles must have been habitable at least after a season or two. Milecastles and turrets took priority of construction over the curtain wall. Is it so unreasonable to suppose that before the Vallum was thought of, some kind of track linked the Wall garrisons? The reasonableness of this supposition has already been shown. But the equation of such a track with that on the south berm of the Vallum is perhaps more difficult to believe.

Upholders of the "service road" theory would argue thus in support of the retention of this track and its incorporation in

the Vallum scheme, against opponents rightly posing the question of why such a lightly-metalled track should have been followed, especially in areas where "uncomfortable proximity" was the result? The answer would be to pose an alternative question: why should the Romans bother building a ditch and mounds at all? Presumably in part because the mounds would give considerable protection to anything passing along the road, but largely because the Romans had decided that a boundary line more substantial than a lightly-metalled track ought to be constructed to define the military zone from the civil. It would not matter how closely the Vallum approached the Wall, and it might just as well follow an already existing road, no matter how slight, as any other course, especially if it was already in connection at certain points with the heavier road, the Stanegate; and a lightly-metalled track would still be needed, after the construction of the Vallum (perhaps more than before now that the area to the south was explicitly cut off by the Vallum) for lateral communication, and therefore the obvious solution was to use an existing track.

Two further charges might be levelled at the theory. Surely the course which the Vallum takes, diverging round certain forts, was not dictated by the course of a lightly-metalled track! Such angular diversions would be quite

remarkable for a Roman road of whatever calibre. Two answers could be given: (a) the forts were not originally planned and may have already obliterated the course of such a road; (b) if forts as well as milecastles had been connected by a road, the latter would undoubtedly approach closely the south gate of the fort; the clumsy construction of the Vallum could not find room south of the fort, following a road in its normal fashion, and therefore diverged. Scant hope remains of discovering the original line of such a track in the vicinity of a fort, since the more elaborate structure of the Vallum has been completely obliterated to the eye. Additional support is afforded to (b) by the fact that at certain forts, e.g. Rudchester, Housesteads, Great Chesters, the Vallum does not diverge, but rather runs in a straight course, some little distance from the forts.

The second charge is roughly the one levelled at the unknown member in 1891. Any light road would surely be quite obliterated by the digging of basalt blocks from the Vallum ditch at Limestone Corner and their deposition on both berms of the Vallum. There is still adequate room between the blocks on the south berm and mound to allow for a narrow passage or patrol-track such as has been discovered at High House, and excavations in 1952 proved the existence of a narrow track just west of Limestone Corner, though in an area free from blocks. A careful study of the area would

suggest that the blocks lie in and on the marginal mound and therefore belong to that period - a suggestion which, if correct, would admirably dispose of the problem. But the huge size of the blocks present a serious difficulty to this solution. They are too large to represent a cleaning out or recutting of the ditch, unless indeed, contrary to the current belief the Vallum ditch as well as the Wall ditch was ^{here} originally left half undug! It is a tempting solution but another careful study of the area suggests a different one. The blocks lie roughly on the south edge of the marginal mound. A suggestion offered by Professor Richmond during a visit to the area with the writer, is that the blocks have been pushed from the extreme edge of the south berm further on to the berm by the makers of the marginal mound. This seems likely to be the case. The cleaners of the ditch would thus have a clear space along the south lip on which to deposit the silt and ^{fallen} blocks of stone from the ditch, and that there would be much fallen stone in the ditch is obvious for the susceptibility of basalt to cracking and disintegrating is well known. If this solution be accepted, then originally before the marginal mound was constructed there would be ample room on a berm of the standard 30 feet for not only patrols but even vehicles or pack-horses to pass.

Such is the case for the "service-road" hypothesis. Much may be stated in its favour, and any attempt to read into its name a substantial roadway must inevitably fail. Only perhaps section I at Mosskennels could be taken to illustrate the existence of a substantial road. It is unfortunate that Mr. Birley stressed only the road hypothesis in 1949 and omitted mention of the agreed boundary purpose which must on any showing be ascribed to the Vallum.

Any effort to explain the purpose of the Vallum solely as a road line must inevitably fail. The true weakness of the pre-existing "service road" hypothesis is not an archaeological lack of road-metalling (and in the 76 Roman miles of earthwork extraordinarily few sections have been cut) but rather its belief in a pre-existing track. It leaves unanswered the question of the purpose of the mounds and ditch of the Vallum since the road of the south berm would already exist when they were dug. It is clear that any disagreement of opinion among Wall archaeologists is rather a difference of emphasis than a fundamental divergence of belief. "Service-road" protagonists stress the importance of the communication element, and its protection by means of the rigid control of traffic at causeways, and by ~~firstly the south mound (and secondly the deep steep-sided ditch)~~ from general access from the south: it does indeed admit the need for such control against the south. Believers in the boundary idea stress the

control and prohibition of access from the south whilst admitting that the south berm of the Vallum might well have been used as a track for communication laterally. Professor Richmond's latest statement in 1950 represents a slight advance towards the "service-road" theory though as a result of a misinterpretation of the latter he vigorously dissociates himself from it. The two apparently divergent theories can be reconciled quite simply as two differently stressed aspects of a purpose fundamentally in agreement. The question resolves itself into a discussion as to whether simply patrols of the Vallum used the south berm or whether a certain amount of traffic, containing for example stores for the milecastle garrisons, was also allowed to travel along the "green road".

iii Mr. John Morris: "The Vallum Again"¹

This admirable and concisely written paper by a southern historian and archaeologist must at this stage be considered. It represents a clear, coherent appreciation not only of frontier policy in general from Domitian to Hadrian, comprehending the results of recent excavation and discoveries, but also of the particular need on Hadrian's frontier for the Vallum. It illustrates the main trend of modern scholarship and thought on these two subjects. Frontier policy had been directed to the changing methods of application of the same fundamental principle - that of "dividing the barbarians" and preventing their effective collaboration. Mr. Morris expresses the principle thus:-

"It was no longer sufficient to overawe the enemy by fronting him with a massive wall of legions. It was necessary to carve up and segment the barbarian territory in front of the legions, to hamper the enemies' communications."²

He also gives expression to a fact which has been realised for some considerable time, that the Tyne-Solway line did not necessarily represent the northern limit of Brigantian power. On the contrary, evidence suggests that part of the area north of the Stanegate, even north of the Wall, was under Brigantian hegemony. Neither the Stanegate nor the Wall was a "pre-existing ethnic boundary," but were "lines of consolidation, geographically and militarily convenient."³ The effect of the Wall, though not the Stanegate was to divide the Brigantians

to the south from brothers, friends or allies to the north, and thus to divide their strength, forcing those to the south to become Romans or accept a Roman way of life.

"The political effect of the continuous Wall is also evident and important. Envoys may slip unseen at night across a road frontier, however efficiently patrolled and so may substantial bodies of warriors, or migratory peasants, or raiders and brigands. The road frontier is a barrier only against massed attack, a base for Roman penetration. The continuous Wall wholly cuts off communications "4

Mr. Morris continues by suggesting that two at least of the modifications of the Wall, viz. the moving of forts on to the Wall from the Stanegate line, and the addition of the Vallum, could not be explained simply by geological or geographical difficulties, but were undoubtedly prompted by experiences gained during the construction of the Wall. He ascribes three effects to the addition of the Vallum,⁵ and in the process formulates a logical, lucid statement of the Haverfield boundary theory which had slowly developed through Simpson and Collingwood into the militarily-policed boundary described by Professor Richmond.

Firstly the Vallum would prevent "the access of unauthorised persons (and not merely goods or cattle) to the Wall and its incorporated structures. The political situation in Hadrian's time suggests two types of unauthorised person: in the event of a concerted attack from north and south, it is evident that the main body of attackers must have come from the north - after half a century of occupation, the Romans were no longer strangers to the area behind the Wall, and their roads and forts (not to mention their intelligence system) were sufficient to prevent any but small

concentrations in the rear. But in a concerted attack it would be perfectly feasible for quite a small band to seize and hold some point on the line of the Wall, through which a large force from the north could penetrate. The impassable, continuous obstacle of the Vallum would effectively prevent such a surprise."

A second effect would be to "prevent the infiltration of envoys or spies proceeding from south to north."

"A third effect would be felt if it were necessary to drive small bands of malefactors, or individual criminals, against the line of the Wall from the south. The immediate southern face of the Wall and its forts must normally have been occupied by the impedimenta of daily life among which the fugitives might escape detection and the pursuers dislocation. The Vallum would provide a convenient base-line for such pursuit, without incommoding the ordinary business of the garrison of the Wall."

The story of the Vallum here convincingly depicted must have been correct. Moreover it is not illogical to suppose that the three effects were in fact different aspects of the main purpose of the Vallum described under the first effect and by Professor Richmond. This in no way suggests that the Vallum was a defence against the south. It is an unmilitary obstacle, yet not tactically neutral since the patrol track existing at least sporadically on the south berm suggests that a constant watch towards the south was maintained and needed. Professor Richmond draws attention to the blocking of the east gateway of Haltwhistle Burn fortlet⁶ and suggests that it may be the result of a danger more real than has been apparent in that neighbourhood. Both he and Mr. Morris propose that isolation

of such a detached fort may have led to the incorporation of forts in the Wall scheme.

Mr. Morris closes with a suggestion that the fear of a concerted attack from north and south may have materialised and may have been responsible for the decision to construct the Vallum. This attack may be connected with "the obstinate body of epigraphic and prosopographical evidence which hints at a second British expedition under Hadrian circa A.D. 130 or rather later,"⁷ and begs northern archaeologists to keep a look-out for evidence for it beneath the ground. No student of epigraphy and prosopography would disagree with the statement that trouble existed in Britain in circa A.D. 130. But the present writer would point out that unless such trouble occurred earlier rather than later than A.D. 130, it cannot have dictated the building of the Vallum, which, as has been shown above, ought to be placed little if any later than circa A.D. 128 in time sequence. The erection or rehabilitation of certain forts in the frontier area, for example the Cumberland coastal defence, Carrawburgh or even Carvoran might rather be attributed to such an expedition in the 130's.

PART V.

LATER HISTORY OF THE VALLUM.

A. The Crossings System

The existence of gaps in the mounds of the Vallum was noted in 1908 by Mr. William Hepple. Mr. F. G. Simpson devoted the years from 1908 to 1920 to investigating this new feature. Invaluable knowledge was thus obtained which made possible a more thorough and accurate appreciation of the purpose and history of the Vallum. It was found that the north and south mounds of the Vallum had been slighted at regular intervals. In some cases a filling of the ditch in line with the gaps was noted, and these were named "crossings".

The "crossings system" as summarised in 1922, has been the accepted basis for research on the later history of the Vallum until very recently. It was summarised thus:-

"The surface remains of the Crossings fall into four main divisions of which the following features are characteristic and the order, in the light of research, chronological:-

1. The construction of the crossings has been begun but not completed. Where such conditions obtain the Vallum shows no signs of subsequent alteration.
2. The Crossings have been completed and exist to-day complete and undisturbed. Under these conditions the Vallum still shows no signs of subsequent alteration.
3. The complete Crossings no longer exist: the gaps remain in both mounds but the causeways across the Ditch are absent. There is a marked increase in the size of the ditch, compared with the cases covered by divisions 1 and 2, and the marginal mound is invariably present.
4. The details characteristic of division 3 are reproduced with one exception, that no gaps are visible in the north mounds. In addition, there is a marked difference in size between the north and south mounds, the former being the larger."

Mr. Simpson emphasised that the divisions were by no means so clear-cut and invariable as a simple classification inevitably suggests, but felt nevertheless that the features were susceptible of classification. As the foregoing description of the course of the earthwork has demonstrated, this simple classification cannot now be maintained. This problem is discussed at length in the next section in connection with the marginal mound. At this stage it is necessary only to review the nature of the crossings system in general, since details have already been noted, and to discuss the dating and purpose of the system.

The crossings system was clearly intended to be a general policy which was susceptible of local variation. Gaps varying in width and depth have been dug throughout the north and south mounds at regular intervals. In some cases, notably Cawfields and High House paddock, the gap positions have merely been marked. Mr. Simpson investigated the spacing of the crossings, but the writer has not carried the examination further. His general conclusion still holds: that the crossings were intended to be equal, i.e. approx. 45 yards on the average, though the interval in the High Shields - Twice Brewed sectors seems to have been nearer 53 yards. Pacing rather than measurement by chain or tape would account for the minor variations. The system was not purely haphazard but plainly an organised, measured arrangement.

The question of the disposal of the material obtained from the digging of regular gaps is also discussed below. Mr. Simpson noted that, although the method was not uniform, the material was usually thrown into the ditch opposite the gaps to form secondary causeways or "crossings". A number of such crossings still exist notably at Matfen Piers, between Tower Tye and Carrawburgh, at Cockmount Hill and Carvoran, though many other scattered examples exist. These crossings vary considerably in size and composition. That they are to be linked with the gaps in the mounds seems an obvious assumption.

Only three sections of crossings are available for study in published form. The first and most important was cut across the Vallum at Cockmount Hill in 1939³ by Messrs. Simpson and Richmond, the second and third being partial sections cut by the writer at Carvoran.⁴ The first is extremely valuable in exhibiting the nature of the crossing and also in determining its date. The report is quoted in full:-

"The ditch has not been recut, but except for silting, remains as it was when the regular system of crossings at 45 yard intervals was thrown across it. A section cut from north to south on the axis of the crossing revealed the following important points:- 1. The ditch was originally 20 feet wide at the top, 10 feet deep, and 8 feet wide across the flat bottom, with sides standing at 60°. It thus very closely conforms to the conditions already noted at

permanent causeways at Benwell and Birdoswald.

2. When the material composing the causeway was thrown into the ditch, the upper half of the ditch had already weathered back to something approaching the angle of rest, while the steep lower half was preserved by being buried in rapidly accumulated silt, upon which was growing a normal layer of moorland vegetation, such as would form in not less than 4 or 5 years. 3. The causeway of the crossing was not composed wholly of material from the Vallum mounds tipped back into the ditch, but showed signs of turf revetments, a condition not fully examined.

The Cockmount Hill section thus reveals several points of cardinal importance. First, the steep sides of the Vallum ditch in its original condition may now be taken to have continued throughout the course of the travelling work. They were not, however, normally revetted, and were therefore liable to rapid collapse. Secondly, the temporary crossings were not constructed so soon after the original digging of the Vallum as hitherto thought: they were made only after the rapid collapse of the sides had taken place and conditions of growth had established themselves on the top of the silted mass "

The Carvoran sections proved strikingly similar as far as they went, and the crossing material was undoubtedly boulder clay shovelled back into the ditch, presumably from the gaps in the mounds.

The crossings system cannot in the nature of things be absolutely dated. A section of the ditch silt from the Cockmount Hill excavation was, however, analysed by Dr. Blackburn of King's College, Newcastle. Valuable evidence was thus obtained for the dating of the formation of the crossing. "Not less than 5 years and not more than 15 years" had elapsed since the digging of the ditch. The original construction of the Vallum can now be placed securely between

A.D. 128 and 136. The crossings system seems then to fall most simply into place as part of the abandonment of the Wall as a frontier and the reoccupation of Scotland in A.D. 140.

The crossings system cannot have been undertaken to facilitate the building of the Stone Wall⁵ nor even the replacement of the Turf Wall by stone. As early as 1920 Sir Charles Oman and Mr. J. A. Petch suggested that the aim of the system was "to demonstrate, in a manner at once spectacular and useful, that a change in imperial policy had rendered the whole earthwork obsolete;"⁶ and they suggested the Antonine reoccupation of Scotland as the occasion. This seems the only logical and adequate solution to the problem. The piercing of the mounds by gaps would show the civilian population to the south of the Vallum that the earthwork was no longer a continuous obstacle to the north. Whether the crossings in the ditch were intended for any useful purpose is a matter for conjecture. The fact, however, that the disposal of the material from the gaps was not uniform seems to imply a negative answer. The reason for the high frequency of the gaps is not known. Mr. Birley has made an interesting suggestion⁷ with which Mr. C. E. Stevens is inclined to agree,⁸ that the gaps of the Vallum were "set out on the old positions of Vallum

(centurial) stones". Centurial stones belonging to the Vallum have been discovered.⁹ It would be instructive though arduous to attempt to relate the regular gaps to once-existing centurial stones. To remove such symbols of Roman authority by the crossings system would indeed effectively demonstrate to the civilian population that the Vallum was no longer the official boundary of the province.

That advantage was taken of the newly acquired privilege of expanding northwards is strikingly demonstrated at Milking Gap. Here, between the Vallum and the Wall, a small native settlement¹⁰ sprang up between the abandonment of Hadrian's Wall in circa A.D. 140 and A.D. 160. Mr. Birley dates the pottery from the settlement to circa A.D. 120-180 but considers it to be mainly representative of the years circa A.D. 130-150. The existence of this small settlement adds colour to the hypothesis that the crossings system represented the systematic obliteration of the Vallum as a boundary.

B. The Marginal Mound Problem

i. The presence of the marginal mound intermittently on the south lip of the Vallum has been already attested.

Mr. Simpson's observations on the crossings system led him to the following conclusion concerning the marginal mound:-

"In this mound, not one instance of a gap in line with those in the north and south mounds has been observed. Further, wherever the marginal mound is present the ditch is obviously of larger dimensions than in the sectors where causeways appear. Lastly, the composition of this mound indicates that its material came from the ditch, not when the latter was first dug, but subsequently. The above facts, taken together, lead inevitably to the conclusion that there is an intimate connection between the absence of the causeways and the presence of the marginal mound, which admits of only one explanation, namely, that wherever the marginal mound appears today the causeways were once present. The increased size of the ditch further implies that the removal of the causeways was accompanied by a complete re-digging of the ditch in those sectors, and that the mound represents the material removed in both operations."

Mr. Simpson made a further point which was closely connected with the crossings system and marginal mound. He proved Horsley's belief that the Military Way had been carried along the top of the north mound to be accurate at least in places. Further, in 1921, at three gap positions on Carrawburgh Farm, the Military Way was found to overlie filled-in gaps, thus establishing the relative date of the latter. At one gap in particular the evidence was strikingly clear.

"The material filling the gap was found to be one and the same, not only as that forming the foundation of the road above it, but also that composing the marginal mound opposite."²

The conclusion then seemed obvious that the Vallum ditch was cleaned, its crossings removed, and the ditch recut, all of which processes resulted in the appearance of the marginal mound at the same time as the Military Way was constructed.

ii. In 1947³ this accepted interpretation concerning the contemporaneity of the removal of the crossings, the recutting of the ditch, and the erection of the marginal mound was challenged by Professor Richmond, and again in 1950.⁴

"As a sample cross-section at Cawfields showed, the ditch was in many places cut to a new profile, with a deeper and narrower bottom, but much more gently sloping sides at an angle well below the angle of rest. This was a wise precaution, and it may be thought that the change was one imposed by experience. The original steep profile must already have shown itself difficult to maintain in many sectors. But the new operation of recutting the ditch, the large amount of earth due for removal raises an interesting question of disposal. The dump is certainly not recognisable as any form of mound, and must presumably have been spread over the adjacent surface, though no traces of the operation have yet come to light. The marginal mound, as the Cawfields section and geological analysis showed, is derived from no such undertaking but represents a still later cleaning out of the recut ditch. All this activity in turn implies that, once refurbished, the Vallum was subsequently used for a considerable time."

The structural sequence implied here is this:

Period I : the original Vallum.

Period II : the crossings system.

Period III: the removal of the causeways and the recutting of the ditch.

Period IV : the cleaning of the recut ditch involving the construction of the marginal mound.

Professor Richmond stated that the crossings system is "best dated and explained by the reoccupation of Scotland in A.D.140". He did not assign the subsequent two periods or phases to any particular date or historical context, but it is now clear that they would both need to be fitted into the second century, since the Vallum seems to have been disused from Severan times onwards.

There appear to be four bases for Professor Richmond's statement on the problem of the later history of the Vallum; firstly, the supposition (following F.G. Simpson) that wherever the marginal mound exists no crossings remain in the Vallum ditch; secondly, the assumption that the marginal mound only exists where the ditch has been "recut"; thirdly the practical point that the marginal mound is far too small to represent the removed material of the causeways and a recutting of the ditch; fourthly, the fact that the marginal mound is composed of silty material presumably from the Vallum ditch, and not of clean subsoil from a recutting of the ditch.

It is proposed to take each of the four props of Professor Richmond's argument in turn, and to consider the value and strength of each before any solution of the marginal mound problem is attempted.

The general supposition that wherever the marginal mound exists, no crossings remain in the Vallum ditch, has been proved to be wrong for at least $1\frac{1}{2}$ miles of the course of the Vallum. Mention has already been made of this new fact which a thorough observation of the surface indications has produced, and the Ordnance Survey have altered the 25" maps accordingly for the sector between Tower Tye milecastle 29 and Carrawburgh Farm.⁵ From the eighth crossing⁶ west of milecastle 29, ascending Limestone Bank, to the causeway opposite milecastle 30, crossings are present in the ditch at regular intervals. Moreover, practically continuously a marginal mound is present on the south lip of the ditch, except where it has been clearly destroyed in recent times. West of milecastle 30 the crossings appear even more strikingly, and the wonder is that they have never been noticed before. For the next 28 crossing positions, ending at the east wall of the pasture containing Carrawburgh fort at the point when the course of the Vallum becomes most indistinct, crossings are present in the Vallum ditch and again the evidence for a marginal mound is almost continuous.

This is then a striking sector where not only does the marginal mound exist, standing to a height only paralleled or surpassed at two other points (viz. west of Codlaw Hill and at Cawfields), but also a constant series of well-defined crossings across the Vallum ditch. This new fact is in pointed contradiction of Mr. Simpson's statement.

A study of the detailed description of the course of the earthwork reveals that in a number of places evidence exists contradicting the opinion that the presence of causeways precludes the existence of a marginal mound and vice-versa. In the field east of milecastle 23 there is a continuous marginal mound yet there are traces of slight ditch-fillings, excluding the large crossings which may be purely modern. Similar evidence appears through Stanley Plantation itself where undergrowth and young trees forbid a thorough investigation. West of Greenfield Farm, approaching milecastle 25, there are 6 consecutive crossings where the marginal mound co-exists. Beyond the hill west of Carraw Farm and approaching milecastle 33, where the marginal mound is well-preserved, there are definite traces of at least four crossings in the ditch. In the field immediately east of the Knag Burn Wood crossings are present in the ditch though there are definite signs of a marginal mound. Even in the splendidly preserved Cawfields sector, the shining example of the recut ditch

and concomitant marginal mound, there appear to be fillings although very slight in the ditch. The Cockmount series of crossings in the ditch appear to continue at Blakelaw although a marginal mound recommences. Finally attention ought to be drawn to the series of finely preserved crossings at Matfen, if a parallel between the traverses here and the marginal mound may be drawn.

To distinguish between modern and Roman ditch fillings is by no means so easy as is often assumed. But, whether the foregoing list of evidence is acceptable in its entirety or not, the Limestone Corner series of crossings must be accepted. Professor Richmond visited the area with the writer and agreed that the marginal mound and the crossings in that sector are equally obvious. Since that time Mr. Simpson has concurred with this opinion, after another visit to the sector. A thorough surface examination of the total length of the Vallum on foot has made it quite plain that to generalise in any statement concerning the earthwork is extremely hazardous, though generalisations must be made. It revealed that the marginal mound is by no means such a continuous feature as has hitherto been supposed. That it is intermittently present on the south lip of the ditch is, however, an acceptable fact. The surface investigation further illustrated that the removal of ditch-fillings has by no means

been so consistent as has hitherto been believed. The four groups of complete crossings yet remaining⁷, described by Mr. Simpson - four at Carrawburgh Farm, six at Carvoran, a group at Cockmount Hill, and finally the longest series between Matfen Piers and East Wallhouses - are isolated examples of a more general feature and have received undue prominence. Finally, to base any argument on the supposition that wherever the marginal mound existed no crossings remained in the ditch is demonstrated to be hazardous and unjustifiable. The marginal mound does not represent the material from the removal of the crossings. It will be remembered that Professor Richmond attacked this view on the grounds of bases 3 and 4. How the foregoing discussion affects Professor Richmond's argument will be outlined below.

Secondly, the assumption that the marginal mound only existed where the Vallum was "recut" is also unjustifiable. Before proceeding further it is necessary to define the term "recut ditch". The standard section of the Vallum shows a ditch 20 feet wide at the top, 10 feet deep and with a flat bottom 8 feet wide. It has become generally accepted that the Vallum was originally of this size and shape throughout its course. Mr. Simpson had noticed earlier, particularly at Cawfields, that the Vallum ditch in places was of larger dimensions. His observations led him to connect this fact with the absence of crossings and the presence of the marginal

mound. In 1939 Messrs. Simpson and Richmond cut sections across the Vallum, and found that one (at Cockmount, already described) exhibited the standard steep-sided profile, whereas in a second, at Cawfields half-way up the hill towards Shield-on-the-Wall, the profile was quite different.⁸ Here "the recut ditch is in exceptionally good preservation, and the ditch proved to be 34 feet wide at the top, 4 feet wide across a flat bottom, and $10\frac{1}{2}$ feet deep. The sides stand at an angle of 35 degrees."

Another section west of the causeway opposite milecastle 42 showed:

"that the sides of the ditch had been cut back almost vertically in the bad sandy ground and were then retained by turf-work, capped with clayey sand and resting upon a solid base of stone 4 courses high. This condition extends from the farm-track leading to milecastle 42 as far as the macadam road to Cawfields quarry."

The Cawfields sections demonstrated "how the ditch was revetted under abnormal conditions and again, how drastically it was recut to a greater depth but safer angle when the temporary crossings had been cleaned out". The ditch at Cawfields was assumed to be recut "as the presence of the well-known marginal mound attests."

Wherever the Vallum ditch was unusually wide with slopes below an angle of rest, it was termed "recut". Although the course of the Vallum has been completely trodden by the writer and the points where the Vallum ditch seemed unusually large annotated, it has not been possible to measure the width of the ditch at regular

intervals, partly because the poor preservation of the Vallum for the greater part of its course precludes accurate measurement. Nevertheless a number of surface measurements have been taken at important points, to determine whether the ditch is of the standard size or the recut one, an overall width of approx. 20 feet representing the standard size, one of 30 feet the recut ditch.

1. The Vallum at Great Hill, Heddon, is rock-cut with almost vertical sides, without a marginal mound, and is 23 feet wide.
2. At Matfen Piers the ditch is clearly not recut, and though the marginal mound does not exist, traverses take its place.
3. At Down Hill where the Vallum is well-preserved the marginal mound is usually quite prominent. The ditch has gentle slopes comparable with the recut ditch and is 24 feet wide.
4. East of milecastle 23 the Vallum and marginal mound are usually well preserved, the ditch seemingly large and presenting a profile between the standard and recut sections. A number of measurements have been taken, showing great variation in the width of the ditch in a comparatively small distance (although the marginal mound is uniformly present). Beginning from the second crossing in the field and measuring the ditch beyond each crossing the measurements are: 22 feet, 32 feet, 30 feet, 32 feet, 30 feet, and finally, at the milecastle, 23 feet.

5. West of milecastle 25 the marginal mound is large and in the next field assumes "gigantic proportions". Yet the Vallum ditch is surprisingly narrow though deep and with fairly steep sides, which were certainly not so gentle as those at Cawfields. One measurement across the ditch here showed it to be 24 feet wide.

6. The sector between milecastle 29 and Carrawburgh farm is once more exceptionally informative and interesting. Proceeding up Limestone Bank the ditch is clearly cut through basalt, has practically vertical sides, and is clearly of the standard section rather than the recut. Nevertheless a small marginal mound exists. At one point here the ditch is 21 feet wide, at another 18 feet, and at the top of the field, before entering the plantation, it is 20 feet wide. In the plantation, where the Vallum begins to turn the corner its sides become slightly less vertical and the ditch seems wider. Near milecastle 30 it is only 15 feet wide and on the west of the causeway the Vallum ditch continues rock-cut with quite vertical sides, approximately 16 feet wide and bordered on the south by quite a large marginal mound. Beyond the second crossing the ditch is 19 feet wide. Then the ditch begins to adopt a gentler profile as it emerges from the solid rock, and to resemble the Cawfields "recut" section. It is here approximately 33 feet wide. Meanwhile the marginal mound continues, not being affected by the change from a narrow to

a broad ditch. Regular crossings are also present. After three crossings the ditch becomes narrow and steep-sided again as it cuts through rock, and the marginal mound becomes noticeably larger. It is unnecessary to trace the work further in this sector since the point is virtually proved. Approaching Carrawburgh, however, where the ditch is not cut through rock, it is approximately 24 feet wide.

7. West of Carraw Farm, where the good preservation of the marginal mound and the vestiges of crossings have already been noted, the ditch is 30 feet wide at largest.

8. At Cawfields the Vallum is of the recut type and appears to be larger than at any other point on the earthwork, and for the greatest distance. The marginal mound is also at its largest here. A number of surface measurements show the ditch to be 39 feet wide, 36 feet, 34 feet and 34 feet. But in the flat ground west of the milecastle causeway, in the area where the ditch slopes were found to be cut back almost vertically, the Vallum ditch is visibly narrower, at one point 23 feet wide, and yet the marginal mound continues unimpeded.

9. At Cockmount Hill, the Vallum is of the standard section for the length of one field. Mr. Simpson noted that the marginal mound recommenced just east of the field wall and continued towards Blakelaw. The ditch fillings were stated

to cease abruptly and the ditch to become considerably wider. The ditch does appear wider further west, but the writer took two measurements across the ditch, one at the field-wall (after the marginal mound had recommenced) where the ditch was 20 feet wide, and a second at a point where not only a southern but also a northern marginal mound existed. Here the Vallum ditch was only 25 feet wide.

10. In Appletree field, the Vallum ditch is large and well-preserved. Here a small marginal mound exists on the south berm of the Vallum, in addition to a fairly small one on the north. Both follow roughly the centre of each berm and are quite clear of the ditch. The width of the ditch here is **28** feet.

11. Finally at Lowtown where the ditch is rock-cut, and there is a marginal mound, the ditch is 25 feet wide.

These examples taken together provide a comprehensive picture of the variety of conditions prevailing on the Vallum in its best preserved sectors. It will be noted that in a number of cases where the Vallum is of large dimensions the marginal mound is present. To agree with Mr. Simpson further, in a number of cases where the marginal mound is not present (e.g. Carvoran, Cockmount Hill, and in the High House sector) the Vallum appears to be of the relatively narrow width of the standard section. Moreover there is no example

of the large ditch without a concomitant marginal mound. But the fact that the marginal mound exists in places where the Vallum is of the smaller dimensions, is sufficient to discredit the assumption that the marginal mound represents a recutting of the ditch. This fact does not dispose of Professor Richmond's interpretation of the structural sequence, but it illuminates a slight fallacy in his statement that the marginal mound represents a cleaning of the "recut" ditch, since the marginal mound is also present where the ditch has not been recut.

This new observation that the marginal mound is unaffected by the width of the Vallum ditch, whether narrow or wide, is clearly of great importance in any attempt to interpret not only the meaning of the mound, but also the structural sequence of the changes effected on the Vallum.

The practical point of Professor Richmond, that the marginal mound was far too small to represent the removed causeway material and a recutting of the ditch, must be both endorsed and emphasised. The mound seems very large in places, but when stripped of turf and topsoil, it diminishes in grandeur, as an excavation by the writer on Teppermoor showed. The point becomes obvious with a thorough examination of the mound. Moreover the new evidence described above adds finality to this practical conclusion.

The fourth and most important basis for Professor Richmond's statement is a fact established by excavation. It will be convenient here to summarise the evidence for the composition of the marginal mound as shown by excavation.

The import of the sections cut by the Cumberland Excavation Committee in 1894 and 5 has already been noted, and the sections have been reproduced,¹⁰ though not in colour. At Brunstock a marginal mound cannot be distinguished at all; at White Moss a considerable amount of black peat covered by dark grey peaty sand takes the position of the marginal mound, but whether in fact this represents a turf revetment of the south mound in an unusual position is by no means clear; at Bleatarn traces of black peat, grey clay and grey sand appear on both lips of the ditch and may represent two marginal mounds, in which case the mounds are composed of dark material including black peat rather than clean subsoil comparable with the north and south mounds.

It is unfortunate that Mr. Simpson's sections across the marginal mound were not published similarly. His description of one,¹¹ however, showed that the mound was composed of clean shaley material, and therefore likely to represent a recutting of the ditch rather than a cleaning. On the other hand, Professor Richmond wrote of a section at¹² Cawfields across the marginal mound clearly demonstrating that

it was composed of material representing a cleaning out of the ditch rather than a recutting.

The necessity for further evidence of the composition of the marginal mound is obvious. At a number of points the mound had been broken and exposed and therefore some evidence is readily available. In the Limestone Corner sector it is clearly composed of whin stones and boulders of varying sizes mixed generally with loose soil. Beyond milecastle 25 the mound is large and composed mainly of stones and a clean-looking buff-coloured material. At three other points, however, a section has been cut across the mound, at Down Hill, east of Stanley Plantation, and at Limestone Corner. The latter two were particularly valuable, since the writer was able to compare its section with one through the south mound in the same area.

Down Hill¹³. Here the mound proved to be extremely small. It was composed of stones, one whinstone, one or two freestones and a number of limestones mixed with soft dark-brown soil. The Vallum Ditch is here cut through limestone rock and therefore the presence of freestones in the mound is surprising. Both the composition and the size of the mound compel the assumption that the mound does not represent a recutting of the ditch, but rather a dump of a few fallen stones mixed with loose soil, probably from the ditch itself. Since the ditch is cut through limestone, black

vegetable silt could hardly be expected to accumulate in the ditch since any water would percolate through the limestone.

East of milecastle 23, Stanley Plantation.

A marginal mound on the south lip of the Vallum ditch is apparent practically throughout the pasture to the east of milecastle 23. At one point, 130 yards east of the centre of the milecastle causeway, part of the lip of the ditch and the marginal mound had fallen away and clear signs of turf-work had become visible. Only 3 or 4 inches remained of the turf kerbing though if it had originally extended to the south ditch lip as seems likely, it must have been 2 feet 6 inches wide. A trench was cut across the marginal mound to discover whether this unparalleled feature recurred on the southern edge of the mound, and to study the composition.

The section¹⁴ exhibited a number of peculiarities. On the northern edge, the commencement of the southern ditch slope could be clearly distinguished, but the turf-kerbing did not start until beyond the ditch lip. Roughly 4 inches of three layers of turf, standing to a total height of 1 foot approximately were distinguishable. Apart from the kerbing, no clear mound edge could be identified. 19 feet to the south the mound faded out, but here no turf kerbing existed to determine the southern limit. The composition of the mound too was as unexpected as it was peculiar. Above the old turf line,

which was usually distinct, extended a layer never more than 6 inches deep of clean, bright yellow sandstone. It did not appear to be a layer of stones, yet the yellow band was more solid than sand. Above this and composing the greater part of the mound was a thick band of loose, dirty, brown material mixed here and there with freestones of varying sizes, and occasional traces of black. The material was at once different from the usual mound upcast near the causeway and from the causeway material itself.

The nature of the mound is more consistent with the supposition that it represents a cleaning out of loose stones and topsoil which had accumulated in the ditch, rather than a recutting of the Vallum ditch. The band of sandstone is so far inexplicable in either alternative, unless it is crumbled sandstones. It is inconceivable that the dirty brown material in the marginal mound is subsoil obtained from the recutting of the ditch.

Limestone Corner

A point was chosen west of milecastle 30 to avoid contact with the solid basalt, and to obtain a complete section of the Vallum where the ditch was of the recut type, bordered on the south by a marginal mound of medium size. The profile¹⁵ of the ditch as shown by excavation resembled that at Cawfields. The subsoil was of a soft rust coloured sandy

material, and at only one point, on the north lip, was rock present. The ditch bottom did not appear to be quite flat, though it must be remembered that the difference between topsoil and subsoil was not marked by an old turf level, but only by a very slight distinction of colour and consistency.

The marginal mound, when stripped of turf and topsoil, proved again extraordinarily small and insignificant. There was no sign at all of the clean rust coloured sand into which the ditch had here been dug and of which the south mound was largely composed. Instead, the mound was composed exclusively of loose dark brown soil, barely distinguishable from topsoil, mixed with fragments of whin and one large irregular freestone. Clearly the mound cannot represent a recutting of the ditch but seems more likely to be material cleaned out from the ditch.

Each of the four bases of Professor Richmond's interpretation of the structural sequence has now been considered. A number of points of confirmatory evidence have been noted in connection with the fourth basis, and the value of the third basis is self-evident. The second basis has been shown to be not strictly true, since the marginal mound exists in places where the Vallum ditch is not recut. The rejection of the first supposition does not directly affect Professor

Richmond's interpretation since it was implicit rather than explicit. In 1947 he made it clear that he thought the removal of the causeways was closely connected in time with the recutting of the ditch, which he assumed to be a general modification affecting most areas of the Vallum except the specific exceptions made by Mr. Simpson.

It is evident that Mr. Simpson's explanation of the structural sequence is untenable. Professor Richmond's interpretation has not however been similarly disproved but needs to be modified in wording to take into account the new fact that the marginal mound exists in areas where the ditch is not recut. If the writer may presume to modify his statement in this way, the following sequence results:-

- Period I - the Vallum as originally constructed to the standard section.
- Period II - the piercing of the north and south mounds with gaps, and the deposition of the material from the gaps in the ditch to form crossings.
- Period III - the removal of many crossings from the ditch and the recutting of several portions of the Vallum ditch, the two operations usually coinciding.
- Period IV - the cleaning of the Vallum ditch in many sectors, disregarding the size and profile of the ditch and the formation of the marginal mound from this material.

But even this modified interpretation contains difficulties, inconsistencies and doubts. Firstly, there exists the difficulty, mentioned by Professor Richmond, in discovering

the means of disposal of the material from the processes of the removal of the crossings and the recutting of the ditch. Secondly, there is a lack of proof that causeways have ever existed where there is no real sign of them to-day. Thirdly, definite proof is lacking that where the ditch is now of large proportions, a ditch of the standard size once existed.

Both the latter points challenge doctrines which were established by Mr. Simpson in 1922. More discussion of them is necessary before an answer, however indefinite, is reached.

Firstly, the question of whether crossings have existed throughout the Vallum opposite each gap. In 1922 Mr. Simpson noted that gaps existed in both the north and south mounds at regular intervals, and this feature has been noted by the writer throughout the visible course of the Vallum. Mr. Simpson remarked that such gaps varied tremendously in size and quoted the Wall Burn-High House sector and the eastern Cawfields sector as striking examples of where the gaps in the south mound seemed unfinished. The gap positions seem to have been marked but never dug completely. But apart from this unfinished work, surface indications in a number of places show that the gaps are shallow and small. The north mound gaps at Cawfields and some in the Limestone Corner-Teppermoor area are of the shallow type. At Codlaw Hill the south mound gaps are barely visible. It is difficult to generalise since the Vallum

exhibits such a variety of features which can hardly be assigned to any definite pattern, but it seems clear that for the greater part of the well-preserved sectors of the earthwork the gaps are rarely deeper than half the mound. On the other hand there are a number of points where the gaps have been deeply dug: Mr. Simpson noted this at Matfen Piers and at Wallend Common, and numerous others may be detected along the course of the Vallum.

This great variation in the size of the gaps would necessitate a greater variation in the size of causeways, if the material has been deposited in the ditch. At Matfen Piers, where the gaps were deeply dug, the crossings seemed to Mr. Simpson unusually large. To press the point further, the depressions in the Vallum mounds at so many places could scarcely provide a crossing of any size at all which would be visible on the surface to-day. Mr. Simpson understood this fully and moreover noted that by no means all the material had been deposited in the ditch. To quote him in full:¹⁶-

"It was first thought that this material was invariably spread outside the Vallum. It is now clear that the method of its disposal was not uniform. At Wallend Common it is wholly outside, but that example is exceptional. At Cawfields nearly half may have been spread outside to form a sloping approach, and this appears to have been the common practice. How the other half was disposed of is not so clear, for corresponding approaches on the inside are not easily traceable except at Cockmount Hill. Probably the causeway contains a proportion of this material in every case, but where the gaps are shallow that proportion

would be small, and other material must have been added. On the other hand, gaps dug to the ground level, as at Matfen Piers (and occasionally elsewhere) would render approaches unnecessary, leaving the whole of the material available for the causeway."

Where the disposal of material just outside the south mound gaps is obvious, it has been noted in the detailed description, and it may be that many more examples could be distinguished on another survey of the Vallum undertaken specifically to look for that point. But is it justifiable to assume that material has been added to the small amount of upcast from the gaps, to form a crossing, when no evidence for such crossings now exists? To examine some examples: west of milecastle 25, where the gaps in the mounds are barely visible, although the Vallum is well-preserved, and no crossings exist in the ditch, is it justifiable to assume that they have existed? In the Limestone Bank-Teppermoor area, where the south mound contains gaps of both the shallow and deep type, where "approaches" are also quite common, the crossings still visible are plainly composed of blocks of basalt cleared from both berms near the crossing - a fact at once striking and unique. Little if any material would be needed from the mounds in such circumstances. This extraordinarily clear fact may well account for the presence of crossings here and the lack of clear ones at Cawfields when other conditions are similar at each point. At Cawfields notches only in the south mound and shallow gaps

in the north could not possibly produce substantial crossings in the ditch as at Limestone Corner, even without the disposal of south mound material as approaches. The writer has, however, already noted a suggestion of ditch-fillings in this sector which would be as large as could be expected under the circumstances. In the High-House - Wall Burn sector too, where the south mound is usually only notched, ditch fillings are there but are not obvious. At Wallend Common Mr. Simpson noted that crossings had never existed in the ditch, and that the material from the gaps was lying about untidily outside both mounds. Must this be regarded as an exceptional case, or rather a local modification of a general policy?

The method of the disposal of the material from the gaps was not uniform - in places it was thrown into the ditch; in others it was merely left outside the gaps as approaches; at Wallend it was left in untidy heaps outside the gaps. Moreover, a careful estimate of the size of the gaps, in areas where the Vallum is both well-preserved and badly-preserved, leads to the conclusion that many of the crossings must have been extraordinarily small, and until evidence can be found that other material was added to them, that process cannot be assumed to have been undertaken. A further point is necessary: the fact that the marginal mound existed in many places was

assumed to demonstrate not only where the ditch had been recut, but also where crossings had been removedⁿ. But the marginal mound is demonstrated to be composed of material quite inconsistent with such an interpretation. Further the marginal mound was the only evidence for the existence of such crossings. These considerations make a new conclusion imperative - that although gaps of varying sizes have been systematically pierced throughout the course of the Vallum, not everywhere did this involve the placing of crossings in the ditch. Just as the Vallum was treated differently when first constructed, so at this later date the systematic obliteration of the earthwork did not follow a rigidly uniform plan, though the general effect was uniform.

The second belief, that the Vallum ditch was in the first instance of the standard section throughout its course, originated in Mr. Simpson's work of 1922. It is based upon three observations, one of which is correct but the other two incorrect. Firstly, that the Vallum in places is small and with almost vertical sides, and in other sectors wider with gently sloping sides, is an indisputable fact. Secondly, that the marginal mound existed only where the ditch was of large dimensions is demonstrably incorrect. Thirdly, that the marginal mound is composed of clean material explicable as a recutting of the ditch, has also been proved wrong. Further, there is no evidence to show where the material from the

recutting was deposited. The conclusion seems inescapable that the Vallum ditch was never recut and that the difference in size and profile was a differentiation made when the Vallum was first dug.

This new point can be attested further. If the ditch varied in size originally (and the transition from one size to the other is so easy as to be barely noticeable) then the later history of the ditch should be reflected in structural changes common to both types of ditch. This is in fact the case. At Limestone Corner huge crossings exist in both the narrow and broad sections alike, and other evidence has already been cited. At a still later stage, when the ditch was cleaned out and put once more into use the marginal mound was erected intermittently along the south lip of the narrow and broad sectors alike. All the evidence leads to the conclusion that the Vallum was never recut.

There may still be a case for supposing that a recutting of the ditch took place at a very early stage, that is, before the crossings system was undertaken. This indeed is the only other possible alternative to the new explanation outlined above, but the difficulty of proving this argument is manifest. Moreover it seems apparent that the idea of a recutting of the ditch was put forward to explain the existence in places of a marginal mound and a large-sized ditch. Since this

explanation is now manifestly incorrect, no concrete evidence whatsoever exists for the process of recutting the Vallum ditch. Is it therefore still justifiable to suppose that such a process has in fact taken place? The further argument that the Vallum at its best preserved, that is, when cut through rock, was only narrow, may be countered by the point that through rock it was quite unnecessary to cut the wider section with gentler sides. Surely the size and angle of the ditch slope were determined by the nature of the subsoil. Through rock and in solid boulder clay the more vertical angle was considered practicable. But in sandy soil or gravel, such as that between the rocky areas on Teppermoor, it seems inconceivable that practical people like the Romans would attempt to dig a ditch to an angle of 60 degrees or more. (Cf. the difficulty the M.O.W. have in preserving the Vallum ditch sides at Benwell.) If so, their folly would almost immediately be apparent. The whole work of the Romans on the Wall illustrates an intimate knowledge and grasp of the geology of the area, as well as an extremely able and practical common-sense. It is then almost an insult to their genius to suppose them incapable of constructing a ditch to an angle consistent with the nature of the subsoil.

The structural sequence visualised in the light of these new conclusions is as follows:

Period I: the Vallum ditch cut for the whole length of the Wall, not to a rigid plan but subject to local conditions, the size, profile and treatment of the ditch varying within given limits, just as the treatment of the north and south mounds varied.

Period II: the piercing of both mounds with gaps of varying size at regular intervals throughout the course; the material thus obtained being disposed of in different ways, but the processes resulting in the definite obliteration of the Vallum as a boundary line.

Period III: the cleaning out of the ditch, where this was necessary, and the consequent establishment of the marginal mound in such areas: this process did not involve a complete removal of crossings. In the Teppermoor area the marginal mound was continued along the lip of the ditch at the crossings, thus negating any effect the latter may have had, whilst at Matfen Piers a similar effect was achieved by a mound being erected across the crossings on the south lip, whereas the rest of the ditch was not cleaned out. At High House mile-castle, embankments of yellow loam were erected on either side of the ditch to avoid the necessity of completely redigging it at this point, whilst at Stanley Plantation, milecastle 33, the north mound gap was closed, the mounds reinforced by stone and even the marginal mound revetted in turf on one side. The ditch containing crossings in the Carvoran diversion would

not need to be re-emphasised, since ample protection would be afforded by the reoccupied fort just behind the diversion. At Cockmount Hill, the presence of a considerable bog to the south of the Vallum would preclude the necessity of recommissioning the Vallum at that point.

This policy of recommissioning the Vallum seems to have been fairly general except in places where it was deemed unnecessary, and as is characteristic of the Vallum, the plan was susceptible to local variations on the same general theme. But since this policy no longer involves a recutting of the ditch, the interpretation of the policy necessarily needs modifying. The policy is by no means so drastic and thorough as a recutting would imply. It must have been undertaken when a return was made to the Hadrianic frontier. Whereas, a recutting of the ditch would imply a real need for the Vallum, the modifications described above suggest rather that the reoccupation of the Wall, forts and milecastles automatically involved the re-use of the great earthwork behind the Wall. The rather half-hearted attempts to redefine its mounds or its ditch suggest an interpretation as not a genuine and urgent need for a Vallum, but rather as a matter of form and as an additional but probably unnecessary safeguard. The gaps were left untouched as a continued enticement to the curious civilian, thief or raider, but wherever convenient access across the ditch existed, it was blocked.

ii. The Military Way.

The Military Way is of interest to a student of the Vallum, because it is the first lateral road feeding the Wall north of the Stanegate known to have existed. Though the Vallum may not be regarded as a means of lateral communication in the first instance it would in fact provide such communication along its berm. It seems to have been superseded in this purpose by the Military Way. The latter is usually said to obliterate the Vallum, though in fact it merely encroaches upon the north mound and berm, and that only in certain places.¹ Near Carrawburgh Farm, the road was found by Mr. Simpson to overlie filled-in gaps of the north mound,² showing that the Military Way was at least later in date than the crossings system. The road moreover seemed co-eval with the marginal mound, but since it at no point bears any ascertainable relationship to the marginal mound no argument could justifiably be based upon this suggestion.

At Down Hill, at Cawfields, at Gilsland and between Limestone Corner and the Coesike, the Military Way encroaches on the Vallum. At Cawfields Mr. Simpson cut a number of sections across the Military Way as it encroaches thus, and has kindly allowed the writer to use his sections,³ though yet unpublished, in this study. At milecastle 30 the Military Way is clearly visible curving up to the south gate of the

milecastle and back until it eventually climbs on to the precipitous north mound of the Vallum. A portion of it was cleared⁴ near milecastle 30, partly to display its features, but mainly to discover whether it overlay an earlier roadway to the milecastle issuing from the Vallum causeway a few yards to the south. It was found to be laid upon solid basalt, and to be composed of whin cobbles surfaced by baked shale and edged with large whin boulders. A complete section⁵ across the Vallum west of the milecastle uncovered the Military Way after it had climbed on to the north mound. The appearance of it at this point was quite unlike the earlier section. It was very narrow, with no kind of kerbing at all, and no convincing road surface. It seemed clear, however, that solid dark brown soil of unknown provenance had been added to the southern edge of the north mound, presumably to provide a wider platform for the Military Way.

When the Military Way was constructed it seems fairly clear that the Vallum would lose any importance it may have had in providing a means of lateral communication and also the milecastle causeways in providing across the ditch from the south berm. Clear evidence for the disuse⁶ of milecastle causeways at High House and Stanley Plantation, which seems assignable to the marginal mound period, may then be drawn into line with the construction of the Military Way. The Vallum

was still at that period used as a boundary line if not as a patrolled obstacle. Since the Vallum seems to have fallen into disuse by Severan times⁷, the construction of the Military Way must have been undertaken before the end of the 2nd century and not in Severan times, although the earliest milestone found associated with it is dated to A.D. 213⁸.

iii. The Marcan Occupation of the Wall.

Little attempt has hitherto been made to place the structural changes of the Vallum into their historical context. It is easiest to assign the crossings system to the Antonine advance into Scotland dateable to circa A.D. 140¹. Between that date and Severan times when the Vallum seems to have fallen into general disuse,² one structural period, that of the marginal mound, needs to be fitted in. Fortunately there is definite evidence for the reoccupation of certain Wall forts under Calpurnius Agricola, governor in the reign of Marcus Aurelius from approximately A.D. 163-166, and it seems logical to assign the recommissioning of the Vallum to the same period. It is nevertheless necessary to summarise the evidence for a general reoccupation of the Wall in that date. It falls into three groups, epigraphic, structural and ceramic. The general conclusions concerning the latter are provided by J. P. Gillam to whom knowledge of this Wall reoccupation is largely due.

A. Epigraphic evidence.

The Marcan reoccupation of the Wall as a frontier seems to have represented an answer to the military problem in northern Britain which had recently become acute. In the A.D. 150's the literary evidence of Pausanias³ taken in conjunction with structural and epigraphic evidence shows the

Brigantes to be in partial rebellion against Rome, destroying the fort of Birrens and making repairs necessary at Brough-on-Noe in Derbyshire. The reparation work of Julius Verus, governor from circa A.D. 155-8, is attested at Birrens⁴ and Brough-on-Noe⁵, whilst an inscription from the Tyne⁶ shows that he brought over German reinforcements to deal with the problem. This activity forms a fitting prelude to the probable Calpurnian policy of generally reoccupying the Wall.

Two monumental inscriptions⁷ from Corbridge mention Calpurnius Agricola undertaking work with vexillations of legions XX Valeria Victrix and VI Victrix. Corbridge is a site which reflects conditions in Scotland rather than on the Wall, but in this case the evidence is significantly connected with the Wall zone. From Chesterholm, also on the Stanegate, comes a fragmentary inscription⁸, and from Carvoran three inscriptions⁹ bearing the name of Calpurnius Agricola. From forts actually in physical contact with the Wall,¹⁰ however, there are no inscriptions mentioning Calpurnius Agricola by name. Yet Great Chesters has produced a fragmentary inscription¹¹ dedicated to the joint Emperors Marcus and Verus and therefore dated to circa A.D. 166-9. Great Chesters can then be drawn into line with Corbridge, Chesterholm and Carvoran.

B. Structural Evidence

Epigraphic evidence alone would not permit a definite statement concerning a reoccupation of the Wall frontier in the A.D. 160's. Structural evidence confirms the epigraphic at Corbridge and Chesterholm. Moreover, excavation at a number of milecastles has shown that before the Severan modification involving a reduction of the width of gateways "the original milecastle gateways had in every case been supplied with new pivot-blocks in which to hang their doors and that these are not associated with the rebuilding of the milecastles after disaster."¹² The inference is that during the second century milecastles were at one stage dismantled, only later to be put into commission again, the former operation falling into place as part of the scheme of abandonment in A.D. 140. These are two possible dates for the rehabilitation of the milecastles known as Wall Period IB - in the A.D. 160's under Calpurnius Agricola or in circa A.D. 184 under Ulpus Marcellus. Epigraphic evidence favours the earlier date, and when ceramic evidence weighs the scales still further in favour of Calpurnius Agricola, this date becomes a strong probability.

C. Ceramic Evidence¹³

The closely dated site of Corbridge provides the key to the pottery evidence. The second Antonine fort here,

established by Calpurnius Agricola, has produced quantities of pottery which can therefore be considered typical of the period. This pottery corresponds remarkably with that of period IB from the milecastles. Further, a consideration of the distribution of the wares of certain potters, who clearly flourished during this period, has valuable light to throw on the distribution of Calpurnian activity in the north. Mr. Gillam lists examples of the products of the mortarium maker ANAVS thus: Brough by Bainbridge, Benwell, Binchester, Birdoswald, Carlisle, Chesters, Corbridge, Housesteads, Newstead, Risingham and South Shields. The distribution of the wares of the central Gaulish potter ADVOCISVS, dateable to this period proves remarkably like that of Marcan inscriptions: Benwell, Carlisle, Corbridge, Ilkley, Lancaster, Manchester, Maryport, Newstead and Templeborough.

Summary

Mr. Gillam has shown that positive epigraphic structural and ceramic evidence combine to suggest strongly that Calpurnius Agricola carried out a vigorous policy of reoccupation of certain Pennine and Wall forts and even the milecastles themselves. This taken with the lack of similar evidence of occupation in Scotland and on the Antonine Wall in particular seems to allow the deduction that the Antonine Wall was temporarily abandoned and Hadrian's Wall rehabilitated.

That the milecastles were again put into working order in this period is of profound significance. Hadrian's Wall had been reoccupied as a continuous frontier. The recommissioning of the continuous barrier to the south - the Vallum - must then be assigned to the same period and policy.

C. DISUSE OF THE VALLUM AT FORTSi. BIRDOSWALD FORT

Appendix VI discusses both pottery and structural evidence which prove that the Vallum ditch at Birdoswald was filled in very soon after its original construction, the monumental gateway over the original causeway dismantled and covered in during the process.

The reason for this rapid modification of what must have been the usual plan seems fairly obvious. It has already been emphasised that the Vallum ditch was squeezed in with great difficulty in this area. To have a ditch so close to the southern rampart must have been a considerable nuisance to the garrison. If one of the purposes of the Vallum be taken into account, i.e. the marking off of the military from the civil zone, and the prevention of any illegal access from the south, it is strikingly apparent that the Birdoswald escarpment would prohibit such illegal traffic much more effectively than the Vallum. Here the ditch and causeway were redundant, ineffectual and inconvenient, and were consequently demolished.

After the Vallum had been filled in, buildings of wood were constructed over it. At Benwell² firstly a wattle-and-daub building was erected, only to be superseded by buildings of stone. The exact date of the construction of the wooden buildings at Birdoswald is unknown. At least they are later than the

demolition of the Vallum, but earlier than the digging of the outer unfinished ditch. At the time of excavation, this outer ditch was thought to be earlier than the Stone Wall. This is most unlikely, since the Stone Wall built to a Narrow gauge in this sector must have followed shortly after the construction of the Vallum. Thus, not enough time is allowable for the filling-in of the Vallum, and the construction and use of the wooden buildings. Thus they can hardly be sheds used during the erection of the Narrow Wall. There is nothing to prove that the buildings or the outer ditch are Hadrianic. The buildings may synchronise with building I at Benwell which is dated to c. A.D. 200 and not before. But nothing definite may yet be stated concerning the date of the wooden huts at Birdoswald, nor indeed of their purpose. The date of the unfinished ditch is equally uncertain.

At Birdoswald, the disuse of the Vallum was unusually early because local geographical considerations made its existence quite useless.

a)

The Vallum causeway discovered at Benwell in 1932 was examined in detail in 1933 by Messrs. Eric Birley, Parker Brewis and John Charlton¹. During this examination incomplete remains of four irregular buildings, situated over the filled-in Vallum ditch on both sides of the causeway², were discovered. It was left to Mr. W. L. George in 1938 to examine these buildings and the significance of their situation when the causeway was placed under the custody of H. M. Office of Works. A report of the 1933 excavations was published but the publication of the pottery was deferred. Mr. George added considerably to the amount of unpublished pottery in 1938 (in particular from building A and from the Vallum filling beneath it) as well as to the complications of the site. The onerous duty of preparing not only the pottery but also the excavation report for publication was postponed until after the 1939-45 war. In 1946 the figured samian was published by Mr. Birley³, and the coarse pottery entrusted to Mr. J. P. Gillam for later publication in conjunction with an account of the stratification of the discoveries of 1938. Since the coarse pottery was likely to be of considerable value and interest to a student of the Vallum and its history, Mr. Gillam put it at the disposal of the writer. Drawings and a detailed description of the greater part of the pottery are appended below. The writer

has confined her study to the pottery discovered in and immediately above the Vallum filling, and she is not concerned at this stage with the later history of the superimposed, individual buildings. The significance of the context and date of the deposit may now be discussed.

A conflation of the notes on the stratification of the area to the east of the Vallum causeway as interpreted in 1933 and again in 1938 makes possible the elucidation of the following structural sequence.

Firstly, the Vallum ditch was filled with blue clay, in the immediate vicinity of the causeway, while in 1937 Professor Richmond reported⁴ that further west the ditch was filled "with blocks of clay and turf". East of the causeway, on the northern side of the ditch, the blue clay filling was thinly covered by a "definit~~ion~~^e layer of charcoal"⁵ and indications of burning, a feature mentioned both in 1933 and in 1938. But the first definite level above the ditch filling on the east of the causeway was a roughly flagged floor, covered by an occupation layer containing much burnt material and broken pottery fragments. This occupation layer was found in 1933 to extend from at least half way across the Vallum ditch over the north lip of the Vallum, but no attempt was made to trace its extent in other directions. Building A

of the 1933 report is the northern section of this early construction over the Vallum filling⁶. No signs of the walls of this early building remained except the flagged footings of the north-west corner, which suggested little more than "the sleeper wall of a wattle and daub erection."⁷ These flagged footings were contemporary with the second main road-level⁸. The building had subsided considerably with the filling of the ditch, suggesting that it had been constructed little later than the ditch had been filled. The extent and measurements of this first building or occupation over the Vallum ditch-filling are so vague and confused that at this stage it would be impossible to draw a plan of it with any degree of accuracy. A dirty burnt level overlay the whole building. It ought to be emphasised that no real attempt was made to discover whether a similar building had existed immediately above the ditch-filling on the west side of the causeway, though the casual mention of a "quantity of pottery" and "blue-black ash" beneath stone building C, belonging to a later date, suggests that an intermediate occupation of an indeterminate kind may have existed.

The succeeding structural changes are clearer. After the southern part of the first building over the filled-in ditch had subsided with the filling, building B⁹ was erected, overlapping the earlier building. In 1933 it was suggested

that a considerable period must have elapsed between the subsidence of the first building and the erection of the second, since the latter had not subsided in the least. B's contemporary on the north lip of the ditch was not discovered until 1938 by Mr. George. It too overlay the first occupation over the filled-in ditch, and its consequent history proved to be rich in modifications and pottery, the significance of which has still to be worked out. On the west side of the causeway, two buildings labelled C and D in 1933 had existed. It is assumed that they are both roughly contemporary with building B, but only a study of the pottery associated with them can provide a definite confirmation of this assumption.

Three main stages in the obliteration of the Vallum south of Benwell fort may be detected: firstly, the filling of the ditch itself with blue clay; secondly, an occupation over at least the eastern side of the causeway contemporary or little later than the process of filling the ditch; thirdly, a period of building in stone at some undetermined later date, involving the construction of buildings on both sides of the causeway. Clearly, the pottery from the blue clay filling and the first occupation layer is likely to be of great value in determining the approximate date of the undertaking of such processes. Seven boxes of pottery, distinguished

by Mr. George in 1938, are here considered.¹⁰ The labels inscribed on each by him refer to minor details in notes made during excavation and are therefore omitted here to avoid confusion. Instead, though each group is kept separate, an assignation of the general level of each is substituted. Practically all the pottery here considered was discovered below the stone building A found in 1938. Most of the pottery from B, C and D seems to have come from the stone buildings themselves rather than from below them. Thus it has little to add to the evidence of boxes 1 to 7 here discussed, and must be reserved for examination and report at some future date. One box, however, from below the first occupation after the filling beneath building C has been examined. It is composed of the same classes and types of pottery as those from below building A, with the same general late second/early third century date, with a few earlier second century examples. It would then be redundant to draw and discuss them separately.

Boxes 1, 2 and 3 are all from the same general level, and form part of the first occupation over the Vallum filling before the stone buildings were erected. Boxes 4, 5 and 6 are slightly differentiated from nos. 1, 2 and 3, and represent pottery deposited above the ditch-filling but below the occupation layer, and not part of the latter. Box 7 is a composite group of mortaria extracted by Mr. Birley from

boxes specifically labelled as from the blue-clay filling of the ditch or from the top of the filling. None seem to come from the first building itself. But in every case the mortarium fragments were associated with cooking pots and bowls all assignable to the late second/early third century as indeed are all the groups of pottery described below; for example, one fragment of a mortarium stamped by ANAVS came originally from Box 4. The mortaria then must not be assumed to be a homogeneous group dateable to circa A.D. 160, but rather as individual, relatively early fragments associated with their respective groups of pottery, each group assignable to the turn of the century and no earlier. It is unfortunate that the pottery from the top of the ditch filling associated with the mortaria cannot here be discussed in detail, though the general conclusions are clear.

A study of boxes 1 to 6 reveals that in every case comparable material is included. For instance, box 1 contains two fragments which are demonstrably Flavian and two flagon necks which are Hadrianic-Antonine. The remaining majority of fragments are, however, typical of the late second/early third centuries in both shape and fabric. The presence of Hadrianic fragments is explicable since Benwell fort was first occupied under Hadrian¹¹, and survivals in use or strays as rubbish into a later period might be expected. But why are

Flavian fragments present? There are a small number of early fragments from other boxes about which one might ask the same question. No Flavian occupation of Benwell is known or likely. It seems easiest to suppose that such vessels survived in use until Hadrianic times and then were thrown as rubbish into the Vallum ditch along with other rubbish, at the end of the second century. Only five fragments altogether are suggestive of a pre-Hadrianic date; a very small proportion suggest a date as early as Hadrian; practically all the rest are typical of the late second/early third centuries. In every box are comparable fragments. For this reason, all seem to be a homogeneous deposit.

Evidence of the Figured Samian^{12.}

A discussion of the pottery from the Vallum causeway would be incomplete if it omitted mention of the views put forward by Mr. Birley from a study of the figured Samian associated with coarse pottery, largely from the top of the Vallum filling and the first building over the east side of the causeway, though a considerable amount was discovered below building C. His conclusions in 1946 may be summarised thus:

1. Circa 2% of the total finds are South Gaulish.
2. Circa 25% (i.e. 28 out of the total 110 pieces) are Hadrianic, i.e. early Central Gaulish.
3. The remaining 73% must be assigned to Antoninus Pius or

later.

4. Later Lezoux ware formed 50% of the group and can be paralleled from the Antonine Wall. Five late Lezoux and one Rheinzabern fragments "represent the latest material distinguishable among the filling of the Vallum ditch and so provide evidence for the period after which it was eliminated at this site it may be noted that the figured Samian suggests that the filling took place nearer A.D. 160 than 140."

5. All but two fragments of the total East Gaulish ware from the deposit were from above the filling of the Vallum ditch. Mr. Birley pointed out that the dating of East Gaulish ware was still "in need of reasoned demonstration."

Owing to recent discoveries at Corbridge Mr. Birley has since 1946 modified his opinions concerning Antonine Lezoux potters. In 1946 he placed them nearer A.D. 160 than 140. Now he is convinced that they belong rather to circa A.D. 180 plus. He would place the two complete bowls of DIVIXTUS and IANUS found in the first occupation layer over the filling to that date.

A few interesting parallels may be drawn between Mr. Birley's conclusions from the figured Samian and the present writer's concerning the coarse pottery.

1. Taking the deposit as a whole, in both cases a very small proportion of pre-Hadrianic material is present (relatively

more amongst the Samian). By far the greatest proportion is assignable to Antonine times or later.

2. In both cases a small proportion of Hadrianic material (a few still earlier fragments amongst the coarse ware) is distinguishable both in the occupation level overlying the ditch-filling and between the filling and occupation layer. Mr. Birley is in all probability correct when he suggests that this fact "shows that some of the rubbish which escaped tipping into the ditch (see conclusions) of the Vallum must have been used to level up the floors of the buildings erected over it."

3. The final date circa 180 plus given to the latest Lezoux pieces from the occupation layer agrees admirably with the late 2nd/early 3rd century date of the bulk of the coarse pottery. It seems certain too that the new modified dating of this Samian pottery together with the associated coarse pottery will affect not only the relative date of the Rheinzabern wares but also Mr. Birley's cautious statement concerning the filling of the ditch being nearer to A.D. 160 than 140.

General Conclusions.

Both Samian and coarse pottery combine to produce the following conclusions.

Firstly, the Vallum ditch was filled up in a single operation, over such silt as had accumulated earlier.

Mr. Birley informed us that:

"The soil conditions suggested that the filling occurred at one time by human agency rather than by gradual accumulation, and the pottery (i.e. in the filling) will thus represent the dumping in the ditch of material cleared up from elsewhere on the site."

The Samian, embracing pottery from Hadrianic to late Antonine times is clearly rubbish deposited at one particular time.

Only Box 7 of the coarse pottery reproduced and described here came from such a ditch filling. The coarse pottery associated with the mortaria makes a date c. A.D. 160 for the filling untenable and one c. A.D. 200 essential.

Secondly, precisely the same kind of material appears above the filling and in the first occupation layer. It seems a reasonable suggestion that the pottery not specifically in the first occupation layer represents a levelling up of the ditch-filling for the erection of the earliest buildings on the site. It is therefore not surprising that early second century fragments appear in this, as in the ditch-filling, together with recently broken fragments of pottery in use at the time of the establishment of the buildings. The occupation layer itself contains typically late second/early third century pottery with an occasional earlier stray. It is clear from the study of the pottery that the ~~the~~ filling of the ditch, the levelling of the site, and the erection of the first building were all part of one

operation, dated to the very end of the 2nd century or to the early years of the third.

In 1933 it was thought that building A (that is, the first building over the Vallum ditch) was contemporary with road level II, assignable most probably to Severan times. The discovery of intermediate road levels in 1938, making a total of six different surfacings, made an equation of road II with the new road III essential. No further clues as to the dating of the roadways appeared, but the pottery evidence suggests that the 1933 excavators were right in assuming the road to be Severan. Road II must belong to the Marcan occupation which is known to have occurred at Benwell.

It is clear from ceramic evidence that the Vallum ditch was not filled in c. A.D. 160, nor even in A.D. 180, but only in c. A.D. 200 when, after the A.D. 197 destruction, it is hardly surprising that the site was relieved of some of its rubbish which was deposited in the Vallum ditch during its filling with blue-clay, and over the ditch to form a platform for the erection of at least one building over the east side of the causeway.

b) BUILDINGS OVER THE VALLUM AT BENWELL

The evidence for the date of the filling-in of the Vallum has been discussed, but so far the nature of the superimposed buildings (except I) have received only a casual reference. The reproduced plan¹³ shows the four buildings proved to exist in 1933. Each will be dealt with in turn.

Building A. Excavations in 1938 by Mr. George proved that building I extending across the Vallum ditch on the east side of the causeway, the wattle-and-daub erection of the 1933 report, had been superseded by a more substantial stone building A slightly further north.¹⁴ It seems fairly clear that this stone building is contemporaneous with at least B, since in either case, the occupation layer beneath them and common to both had had time to subside considerably. A is a long rectangular building running eastwards along the north side of the Vallum. At its north-west corner the masonry was excellent, and that of its walls in general was good. The flooring of the building had been modified no less than 4 times, but until the pottery associated with such "levels" can be studied in detail, it is fruitless to give a minute account of the details of each level. The pottery seems to belong uniformly to the third century or later which is what might be expected. In practically every case, rough flagging seems to have formed the flooring, and either a hearth or ovens existed. The north wall of the building proved to be 35 feet 5 inches long. A threshold in excellent condition

proved the entrance to have been on the North-east. A south wall had existed but little remained. As far as it is possible to judge, two main periods seem to be exhibited in the building, since two successive thresholds had existed. The north-west corner overlay level III road which was contemporary with building I and assignable to early Severan times. Building A was erected after building I had subsided considerably. It is of third century date, but no closer approximation may yet be reached.

Building B. This was first discovered in 1933:

"B was built of large somewhat irregular blocks of stone, only roughly coursed and rarely dressed; its foundation was of smaller stones, arranged in approximately herring bone fashion; while the depth of the foundations showed that subsidence was feared, none had taken place, so that we may presume that a considerable period had elapsed before B was erected."¹⁵

In 1938 Mr. George found the north wall to be as described in 1933. The footings of both north and east walls were 3 feet deep. Two levels were found sandwiching a considerable amount of pottery. The uppermost was composed of rough haphazard flags.

Building C. The 1933 report states:

"On the West side of the crossing there had been two buildings. C, opposite the southern half, at its north-east angle almost touched the south-west corner of the gateway. The east wall of this building was parallel to the side of the causeway, the highest course of which was lower than the footings of the building; unfortunately it was impossible to establish a connection between the building and one or other of the later road-levels. C was roughly built, of large poorly-dressed stones, and thick flags set in clay; its floor was of large heavy flags."¹⁶

1938 added much to the picture. Not only was the north wall

re-excavated but remains of a step arrangement came to light on the south side. Both east and west walls were uncovered. An entrance had existed on the south. Two levels were discovered, the uppermost consisting of worn but good flagging mainly, and containing a large hearth and some fragments of querns. A north-south passage way had existed. The second level, covered with typically late 2nd/early 3rd century pottery, bore little resemblance to a 'level' in the form of a floor, and exhibited merely masons' chippings and blue-black ash.

Building D. In 1933 this was partially excavated.

"To the north of C was the fragmentary wall of another building D, coming to an end 15 inches from the west face of the causeway, and separated from the north wall of C by a passage 3 feet wide. Of this wall, all that survived were three courses of flags, 3 inches thick, and set as "thoroughs"; they were laid in heavy clay."17

To this one fragmentary wall renewed excavations added the existence of two main levels - the uppermost of strips of flagging, the lower of thick clay. The latter floor showed signs of intensive heat and a hearth existed in the centre. The northern extent of the building was not discovered, but Mr. George thought a thick layer of heavy clay running east/west might be interpreted as the north wall of the building.

Drain. In 1933 a drain was discovered,

"partly over the northern edge of the west side of the causeway, square in section, formed of flags some 3 inches thick; its internal dimensions were 1 foot wide by 10 inches high, and its bottom was from 3 to 6 inches above the original roadway; it had formed one side of the second road-level. On approaching the gateway it had

partly collapsed through the subsidence of the ditch-filling, and it is not clear in what direction it went beyond the point to which it was traced; it is conceivable that the water which it carried would be diverted westwards along the alley between the two buildings on this side; at least there was no apparent way provided for it to continue southwards."

In 1938 Mr. George re-uncovered the drain but could find no sign of the suggested westward course.

Building F. A fifth structure was added to the series in 1938, the precise location of which is not now known. The masonry suggested that it had formed the base for a timber structure.

Later history of the causeway

It must be emphasised that the buildings described above overlay the Vallum at both the north and south sides of the ditch. Clearly the ditch had been systematically obliterated. But the monumental gateway had not been demolished as at Birdoswald - a fact undoubtedly explicable by the situation of the fort and causeway. In 1933 it was clear that two fresh surfacings of the roadway across the causeway had been laid. In 1938 Mr. George proved six surfaces to have existed altogether, the first, third and fifth corresponding to the three of 1933. The raising of the road-level involved other changes which must be mentioned:-

"When fresh surfaces were laid, the thickness of metalling was considerable. The pivot-stone of the original level remained 'in situ' with a groove of the normal type for inserting or removing the gate; at the second level 8 inches higher there was no pivot-stone in position, apparently because at the second making-up that stone was raised and reused; the third level was 10 inches higher again." 18

Both pivot-stone and gatestop were provided at the highest level. The difficulties of interpretation experienced in 1933 are not now applicable. The causeway across the Vallum ditch would naturally continue to form the main means of access to and from the south. Nor is it surprising that buildings should be constructed on either side of it. The buildings in the immediate area of the causeway, which is quite close to the fort may have belonged to the military rather than to the specifically civil settlers. That a gateway should continue to bar access to the north, presumably at night, is reasonable to suppose if such buildings over the causeway area belonged to the soldiery, perhaps as workshops of some kind or other. The extent of the built-up area round the fort is not known. But in 1937^R excavations undertaken to locate the westward arm of the Vallum diversion in the grounds of Pendower House, proved that the Vallum ditch at this point had been systematically filled in Roman times with blocks of clay and turf. Buildings had been erected over its course, one immediately north of the ditch, and its south wall was collapsing over the lip of the ditch. The conditions there must undoubtedly be drawn into line with those immediately south of the fort. The obliteration of the Vallum ditch dated to c. A.D. 200, and the superimposition of buildings, in part contemporaneously but largely later, extended for quite a considerable area round Benwell fort.

iii Housesteads Fort

Excavations in 1931¹ proved that the Vallum ditch had been systematically filled in from the Knag Burn to south of the fort, with clay, whinstone and freestone. Immediately south of the fort, one of the terraces clearly visible on the ground was found to overlie the Vallum ditch. In 1933 further valuable information came to light:-

"After the formation of the causeway, but before the laying-out of the early fourth century road, this part of the site had experienced a drastic modification of levels, apparently in connection with the formation of the terrace. In consequence, the greater part of the Vallum ditch had been bodily removed, and little more of it remained than the heel, cut into the limestone; for in contrast to the situation some yards to the east, where the last section had been taken, to maintain the level of the terrace it had been necessary to shave off part of the hillside instead of forming an embankment along it; and in addition to the Vallum ditch, the greater part of the crossing itself had been removed, together with whatever roadway there may have been laid on it"²

The obliteration of the Vallum at Housesteads cannot as at Birdoswald and Benwell be closely dated. The terraces are likely to have been formed when the civil settlement grew up. There is no evidence to suggest that the settlement which developed here extensively in the third century, existed earlier than the third century. It seems most probable that at Housesteads just as at Benwell, it was not before the Severan age that the Vallum was demolished and superseded by terraces constructed to accommodate houses.

iv Great Chesters Fort

No buildings were erected over the filled-in Vallum ditch in the immediate area of the causeway, nor can the filling be dated, though it is highly probable that, on analogy with Birdoswald, Benwell and Housesteads, it was a Roman obliteration of the ditch. An explanation of the lack of buildings has already been offered. The dearth of road-metalling may be explained by the fact that the Military Way rather than the Vallum causeway would provide the main means of communication.

v General Conclusions

That the Vallum has been filled up or obliterated in some way, is demonstrated at four Wall forts¹. At Chesters air photographs² suggest strongly that it was obliterated by an extensive civil settlement. At Halton³, the fourth century extension would appear to cover the presumed line of the Vallum. At Castlesteads⁴ Haverfield showed that the Vallum had been systematically filled at some time, but whether Roman or not, he was unprepared to say. At all events it is clear that the filling-in, signifying disuse of the Vallum at forts is quite a general occurrence. Thus it becomes easy to explain why early antiquaries could never distinguish the course of the Vallum at forts, and indeed why it is impossible to detect it today without excavation.

Birdoswald is a unique example. But the interpretation of the pottery evidence from Benwell makes it certain that the filling-in of the Vallum could not have occurred before c.A.D. 200. It seems arguable from evidence from Housesteads too that the Vallum had been disused by the time of Severus. Severus is noted, amongst other things, for a relaxation of the regulation concerning the non-marriage of soldiers. It is not surprising that extensive civil settlements developing outside forts would result, to accommodate not only traders but wives and families as well. Naturally too, the Vallum which had prevented all illegal access from the south and indeed from the

fort southwards, would no longer be needed, and was thus filled in, to allow partly for the erection of settlement buildings. At Benwell, so far unique in this matter, some semblance of a boundary was retained by the continued existence of the gateway across the causeway, but doubtless its close proximity to the fort would provide ample reason for its retinence in use.

D. i Disuse of the Vallum at milecastles in the Turf Wall
Sector

High House T.W. milecastle 50.

Excavations in 1935¹ and 1936² established the following sequence:³-

1. An original causeway across the ditch of the Vallum which diverged to avoid the milecastle; the south mound of the Vallum originally continuous though furnished with two cross-kerbs directly opposite the causeway.
2. The greater part of the original causeway removed, and an area extending at least to the limits of the diversion, filled up with cut blocks of peat, exactly as at Birdoswald fort; the filling covered throughout its area with rough cobbling, though a substantial roadway 12 feet wide, of river cobbles levelled with gravel, laid across the centre and cutting through the severely lowered though not completely removed south mound; the entire operation associated with the depression of the south berm and the area between the ditch and the Turf Wall milecastle.

The modification was said to have occurred no earlier than the demolition of the milecastle, since the depressing of the area involved the destruction of the milecastle's outermost post-holes as well as the removal of the cover-slabs, side-walls and outfall of the drain. The effect of modification I was to demolish an original causeway substituting a

wider one, carrying a made road, which cross^{ed} the south mound hitherto forming an unbroken barrier.

3. Modification II "represents an attempt to define once more the obliterated ditch of the Vallum diversion".

Embankments of yellow loam apparently revetted in stone were raised on either side of the ditch in such a way as to conceal the original angular diversion; they continued for approx. 11 yards beyond the outer angles of the diversion gradually tapering off where the ditch-filling ceased. The composition and character of the embankments suggested comparison to the marginal mound. This "fairly rich subsoil loam" suggested that the embankments were formed from material derived from a cleaning out and a partial recutting of the Vallum ditch. The result was a ditch-like obstacle created simply without the necessity of digging out the extensively filled ditch. It was noted that time "for a

rich growth of grass to become established on the road surface of modification I, forming below itself 2 or 3 inches of humus" before the yellow loam of the embankments had been placed on top, had elapsed.

"While it is impossible to attach exact time values to such evidence, no one will deny that the very presence of such material implies a considerable interval of time between modifications I and II."

Wallbowers Turf Wall milecastle 51

Excavations in 1936 established the following sequence:⁴

1. Presumed original causeway across the Vallum ditch, an

original gap through the north mound, while the south mound was originally continuous with one cross-kerb only approximately opposite the western causeway edge; an original culvert through the south mound; light metalling along the south berm and across the causeway to the milecastle.

2. The whole of the original causeway removed by a most unusually shaped excavation, quite unlike the ditch of the Vallum; it was 15 feet 6 inches wide at the top and 6 feet deep; the sides were vertical for a depth of approximately 20 inches and then sloped at an angle of about 40 degrees towards a flat bottom about 4 feet 6 inches wide; this situation extended east and west-wards and gradually merged with the original slopes of the Vallum ditch; this unusual ditch creation was immediately filled firstly with mud-blocks and then with turfwork: a paved roadway covered the turfwork and extended up to the milecastle and over the south mound which, as at High House, had been drastically lowered, the culvert becoming obsolete in the process: the whole area was depressed; the height of the turfwork gradually reduced to east and west "so as to form the gently-sloping sides of a causeway about 140 feet in total breadth though the effective top of the structure was probably not more than 17 feet wide, the width of the gap, or $11\frac{1}{2}$ feet that of the roadway."

3. The flagged roadway of modification I had been resurfaced at a time when the turf-fill of the ditch had shrunk considerably,

reducing the height of the causeway by as much as 4 feet. The depression thus formed had been filled by sandy soil, and a new surface of coarse stones superimposed. The lack of this modification at High House was ascribed to the fact that the turf-work had not shrunk. No attempt was made to explain the lack of the second modification discovered at High House, at Wallbowers.

Conclusions. Modification I at High House and Wallbowers alike had the effect of substituting a wider more substantial causeway for a smaller one, at the same time as providing access through the south mound of the Vallum to the south. The only clue given to the date of this modification was that it did not appear to occur before the demolition of the Turf Wall milecastle. The filling at High House was noticeably like that at Birdoswald fort, and there the Vallum had been filled in soon after its original construction.⁵ Is it carrying the analogy too far to suppose that the filling-in of newer, wider causeways occurred at approximately the same time? A possible interpretation of such new causeways together with the breaching of the south mound of the Vallum is that they were constructed to facilitate the replacement of the Turf Wall and its structures by the Narrow Stone Wall and its stone milecastles. In the eastern sector the Narrow Wall seems to have been constructed earlier than the Vallum,⁶ though it is likely that the decision to construct both occurred at the same time. Clearly the Vallum

reached the Turf Wall sector before the Narrow Wall since Turf Wall milecastle 50 must have been in working order when the Vallum came along and diverged round it. That the replacement of the Turf Wall by stone should follow closely the completion of the Narrow Wall in the eastern sector is reasonable to suppose. An even more reasonable supposition is that the Narrow stone replacement followed shortly on the heels of the Vallum in the west. An unusual feature, inexplicable in 1936 might, in this light, be interpreted. The cross-kerbs at High House and the cross-kerb at Wallbowers are precisely where the later gaps in the south mound were pierced. Such cross-kerbs were "not closely recurrent". Did the Vallum constructors place them deliberately thus, knowing that the Narrow Wall would soon arrive and gaps would be needed through the south mound to facilitate its construction? This is strongly suggested by the evidence.

Such an interpretation of the wide secondary causeways may be correct. But one indisputable fact seems to contradict any such explanation. Surface observation throughout the course of the Vallum and excavation on it south of two milecastles in Northumberland show that milecastle causeways in both sectors are of the same general type, i.e. boat-shaped, and high in the centre and tapering very gradually on both sides ~~of~~ into the ditch. There was no Turf Wall in Northumberland to be replaced by stone. It is evident then that the substitution of a wider secondary causeway

in place of a narrow original one is common to both the Stone Wall and Turf Wall sectors and therefore some other interpretation must be sought.

One further point, interesting but unaccountable, ought to be stressed. Where did the roadways issuing through the south mound run? The river Irthing is only a short distance to the south, yet there is apparently nowhere else for such roadways to run. May they be connected with Nether Denton on the Stanegate?

Modification II at High House was drawn into line with the marginal mound which at the time was interpreted as representing the recutting and recleaning of the Vallum ditch. This problem has already been considered. Whatever the date of this modification, whether it belongs to the marginal mound period or not, it clearly represents a period when the Vallum was still in commission. Since the evidence from any Wall structure, whether fort or milecastle, ought to be similar, the modification is likely to have occurred some time in the second century, because the Vallum was disused from at least Severan times onwards at Benwell. Modification II at Wallbowers, though quite different in character must be assigned to the same period. The reason for the difference between the two modifications is quite obvious. At Wallbowers the stone milecastle overlies its turf prototype. Thus any roadway approaching the stone milecastle from the south, or even the Military Way approaching closely and providing an offshoot to the stone milecastle, would naturally continue to

use the already existent roadway and causeway. Thus no embankments have been raised since the causeway at least was still in use whether the Vallum itself was or not. At High House, however, the stone milecastle lies completely to the north of its earlier prototype. Though the modification I causeway may have served it during the second phase of its existence, whenever that was, when the Vallum was still in use the easiest means of access directly from the east from Birdoswald fort was likely to become more popular than a route directly southwards through the demolished turf milecastle, over the Vallum causeway and then either on to the south berm or through the south mound - a devious route to say the least. Certainly when the Military Way was constructed the causeway of the Vallum would be quite useless as a means of communication. Since no other earlier similar structure on a similar line to the Military Way is known, modification II at High House is likely to have taken place at the moment when the Military Way had been established, yet the Vallum as a boundary line was still in use. Two important inferences result: (a) that the Military Way is pre-Severan, (b) that the purpose of the Vallum was to serve as a boundary line in the first instance, though its suitability for other purposes may well have been exploited.

D. ii Disuse at milecastles in the Stone Wall sectora. Limestone Corner milecastle 30

The problem which the existing causeway presents has already been discussed but its solution was left pending the forthcoming excavations at milecastle 23. Such excavations proved the existence of a secondary causeway closely resembling those at High House, Wallbowers, and indeed Limestone Corner. Before the date of such causeways is discussed, the character of the modification at milecastle 23 must be considered.

D ii.b. Stanley Plantation, milecastle 23.PERIOD II

Note has already been made of the fact that the structural sequence shown by excavation on the Vallum causeway south of milecastle 23 was remarkably similar to that at High House and Wallbowers.

Modification I at Stanley Plantation involved the demolition of the original causeway and the substitution of the larger existing one. The nature of the secondary crossing was exhibited by a trench from the north berm to the south mound, roughly over the centre of the causeway, and by a second trench cutting the centre trench at right angles to determine the width of the causeway.² The causeway depths were not penetrated. It was composed of light-grey silty material mixed with large yellow sandstones.³ Where this material came from is a matter for conjecture since it is clearly not mound material thrown back into the ditch.

The northern ditch slope, cut in yellowish boulder clay, could easily be distinguished. The north berm and lip were considerably higher than the southern. It became apparent that the difference in height between the north and south lips was accounted for by the fact that the north berm and lip had not been cut away or depressed when the existing causeway had been formed, while the south berm had been depressed

considerably⁴. Evidence of the depression of the south berm and lip was remarkably clear. The original turf line, mentioned in connection with the southern stone revetment stopped suddenly on the south berm 7 feet north of the revetment. It was plain that north of this point the surface of the berm had been removed, involving the complete disappearance of the old turf line. The depression also accounted for another puzzling feature. The southern lip of the ditch, cut largely through rock, was discovered about 10 feet north of the line of the ditch lip as exemplified on either side of the causeway, a fact which had suggested a projecting stump of original causeway still in situ. The lip of the rock projection⁵ was traced almost to the limits of the cross-trench, i.e. for a distance of 26 feet, clearly a little too broad to represent the stump of an original causeway. The drawn section readily provides ~~an~~some explanation. The south lip of the ditch has been so depressed that the rock cutting in question would originally have been some 3 feet down the ditch slope, and not the lip itself. Thus it is, understandably, considerably further north than the original line of the southern lip of the ditch.⁶

The stump of boulder clay, clearly visible in the photographs projecting slightly in front of the southern

rock-cut slope of the ditch, was partially cut away, and was found to overlay dark material explicable as ditch silt. Beneath this the rock continued in line with that on either side. Yet the clay is quite different from the normal causeway filling and similar to natural subsoil. It may be explained as the clay from the south berm shovelled just over the ditch lip when the berm was depressed.

The surface of the secondary causeway does not appear to have received any special treatment even in the centre. No real road-metalling existed over it, but merely a fairly compact layer of small, irregular, yellow sandstone cobbles.⁷ This metalling, if such a description is permissible, ceased abruptly where the northern ditch lip was reached, and on the south at the approximate position of the original ditch lip. No metalling existed on either berm. The surface of the causeway only was cobbled, and this point betrayed the secondary character of the causeway before excavation took place.

Whether modification I affected the north mound is not only uncertain but unascertainable, in view of the poor preservation of the mound. The original gap may, however, have been inconveniently narrow to serve the existing wide causeway. Nor must it be forgotten that the north mound gap was not situated opposite the centre of the existing

causeway. It is reasonable then to suppose that the north mound was partially obliterated, or its gap widened, when the secondary causeway was constructed. This may account for the necessity of the later rebuilding of the north mound, and the reinforcement of it by masonry revetment.

Modification I at both High House and Wallbowers included the breaching of the continuous south mound. That the south mound at milecastle 23 shows no real indication of having been similarly breached has already been stressed. At all events no roadway has passed over the mound. The slight depression which is visible on the surface could hardly serve any purpose connected with the existing milecastle causeway. The suggestion has been made that it is rather connected with the crossings system. It is of interest and possibly of significance that the depression is almost directly opposite the north mound gap. The inference is that the south mound was depressed before the present secondary causeway was established. Moreover, if the breaching of the south mound during modification I at milecastles involved the aim of obliterating the Vallum as a frontier, then the fact that a small depression existed already at Stanley Plantation may have saved the mound from complete removal opposite the causeway. It may, of course,

be that the depression is contemporaneous with the secondary causeway, and the former may be thought to constitute sufficient evidence that the Vallum here was no longer of use as a frontier. This question is of great interest in any attempt to put the structural changes at milecastles into their historical context.

PERIOD III

Modification II at High House "represents an attempt to define once more the obliterated ditch of the Vallum diversion." Embankments, of yellow loam revetted in stone, were raised on either side of the ditch. A similar modification did not take place at Wallbowers, for local reasons already discussed. At Stanley Plantation, however, a modification was undertaken, involving the establishment of a continuous north mound which, in the nature of things, precluded the use of the secondary causeway. The process is evidently similar to, but not identical with modification II at High House. A new north mound was virtually established revetted on either side by an edging of rough ashlar⁸. At two points, on the southern edge of the north mound, there were breaks in the continuity of the revetment, but at the larger of these a section was cut across the mound, and it showed that the southern portion of the mound had been almost entirely removed (presumably by ploughing) and the masonry

edging with it. Yet on the north, the section uncovered an exceptionally fine stone coring and revetment, marking the northern limit of the mound. The mound was exactly 20 feet wide. It was clearly intended to be continuous and reinforced by stone for at least the width of the existing milecastle causeway.

Other trenches, designed to uncover both the northern and southern revetments of the north mound, have already been discussed in connection with the secondary character of the masonry. It was clear that this secondary policy of reinforcing the north mound was not purely localised at the causeway proper, but affected the north mound, either generally or spasmodically, in this sector. It signifies also an abundance of good building-stone such as could not be obtained so easily in the central or far western sectors of the Wall.

Whether the stone revetment of the northern edge of the south mound may be attributed to the same policy of reinforcing the mounds generally, is so far uncertain since proof of an earlier revetment of it is lacking.⁹ Despite this element of doubt, a new feature concerning the later history of the Vallum has been brought to light, demanding further attention. It has become a commonplace that the Vallum, after being systematically obliterated, was brought

back into use. The precise character of the Vallum in its second period of history is far from clear. At High House an attempt was made to redefine the ditch south of the milecastle. At Stanley Plantation a different modification was undertaken producing the same effect, the restoration of the Vallum as a continuous visual obstacle. This surely must be the import of modification II at milecastle 23. Not only in the Stanley Plantation area but throughout the length of the Vallum further investigations are required, before we can fully comprehend the ramifications and the implications of this general policy of rehabilitation.

iii The Secondary Milecastle Causeways

It seems a reasonable assumption to make, based on the evidence of excavation at two causeways each in Northumberland and Cumberland, and surface observations along the line of the Vallum, that milecastles all along the Wall have been provided with secondary Vallum causeways of a similar type. It seems clear that such causeways must have been constructed as part of a consistent policy which affected both the Stone and Turf Wall sectors alike, at one point of time. The difficulty is to place such a policy in its true historical context.

At High House the secondary causeway did not appear to antedate the demolition of the Turf Wall milecastle. It has already been shown that modification II at High House is likely to have been contemporaneous with the construction of the Military Way and thus modification I involving the construction of the wide secondary causeway must represent a still earlier period. Moreover, modification II did not quickly follow modification I. At Limestone Corner a similar tale may be extracted. The Military Way here is distinguishable completely north of the Vallum causeway, and therefore if the causeway was to be of any use at all, it must antedate the Military Way. At Stanley Plantation a sequence similar to that at High House was ascertainable, modification II surely assignable to the Military Way period, and modification I closely resembling that at High House. On a number of grounds

the Military Way may be demonstrated to be Marcan. The secondary causeways must then be of a pre-A.D. 160 date. Milecastles were unoccupied from circa A.D. 140-160. Thus the construction of such causeways may be narrowed down to the years between the demolition of Turf Wall milecastle 50 and the Antonine advance into Scotland. To press the point still further, the only apparently suitable context for them would be the Antonine advance into Scotland.²

This date becomes even more probable when one considers what else was happening at that time. No other suitable explanation or date can be found for the systematic "slighting" or obliteration of the Vallum, entailing the gapping of the mounds and the deposition of such material in the Vallum ditch to form "crossings". Such crossings are very like secondary milecastle causeways though not normally so large or substantial. To assign both sets of structures to the same policy and therefore date, would be not only quite justifiable but also necessary.

Because of the almost complete dearth of stratified finds in the Vallum ditch, except in the neighbourhood of forts, and because of the impossibility of gaining absolute dating from botanical analyses, it seems improbable that a closer or surer date of the Vallum crossings and secondary milecastle causeways will ever be reached. It is only by placing the structural changes of the Vallum into an already ascertained

framework of history that any approach to clarity or any explanation of its modifications may be achieved.

PART VI.

CONCLUSIONS.

CONCLUSIONS

The foregoing consideration of the Vallum and its problems has covered much new ground. The discovery of an original causeway across the Vallum ditch south of Great Chesters fort has enabled the terminus post quem of the Vallum's construction to be securely dated, that is to no earlier than A.D. 128. Excavations at Carvoran proved that the fort had been deliberately cut off from the Wall zone and from communication with it by the Vallum, whilst adding useful confirmation to the date A.D. 136 as the terminus ante quem of the construction of the Vallum. Here too the first probable secondary fort causeway has been discovered. The original arrangement of the Vallum as shown at Turf Wall milecastles 50 and 51 had been confirmed by excavation at milecastle 23, thus disposing of any suggestion that the replacement of a turf wall by stone was reflected by alterations in the Vallum. Recent research has disproved the existence of the stone revetment of the Vallum mounds at High House, only to discover the same at Stanley Plantation. Investigation into the Vallum crossings of rivers has proved rather sterile and no definite conclusions can be drawn. Investigations to elucidate the purpose of the Vallum have confirmed the existence of a track on the south berm, but have proved the only evidence for "heavy-road bottoming" on the south

berm to be wrong. Clearly the south berm was often unmetalled and cannot be assumed to have been a substantial roadway. The Vallum is likely therefore to have been a boundary dividing the military zone from the civil and preventing illegal access from the south, its south berm being patrolled by sentries and used for the transmission of stores. That a branch road left the Vallum at Down Hill for the direction of Corbridge has become a probability.

Research since 1949 has proved particularly valuable, however, in connection with the structure and later history of the Vallum. Three periods may be distinguished. Firstly, the original Vallum, not cut to a standard plan as has hitherto been supposed, but subject to local conditions, the size, profile and treatment of the ditch varying within given limits, just as the treatment of the north and south mounds varied. Secondly, the piercing of both mounds with gaps, the material being disposed of in different ways, resulting in the obliteration of the Vallum as a boundary in circa A.D. 140. Thirdly, the cleaning out of the ditch in most areas and the consequent establishment of the marginal mound, a process not involving the removal of all crossings, nor connected with a recutting of the Vallum ditch. No recutting of the ditch was ever undertaken. The third period may be dated to circa A.D. 160. A study of the structural sequence of the Vallum at milecastles tells the same story as the

course of the earthwork in general. Here the wide secondary causeways, of unknown provenance, may be drawn into line with the crossings system, whilst the marginal mound period is represented in different ways with the general effect of restoring the Vallum as a continuous visual obstacle. Finally, by the ^{late end} of the second century the Vallum had fallen into general disuse, the pottery from the Vallum filling at Benwell proving the earliest buildings erected over the ditch to belong to the turn of the century and no earlier.

Much has been learned but more remains to be done. Firstly, the search for original fort causeways must be continued, in particular at Halton and Chesters. Excavation at the latter is particularly desirable for the problem posed by Haverfield in 1903 and reiterated by Mr. Stevens in 1947, is waiting to be solved. Investigation of the civil settlement, which presumably obliterates a Vallum diversion, would provide invaluable evidence for the disuse of the Vallum, as at Benwell.

Secondly, much remains to be learnt concerning the relationship of the Vallum to secondary forts. Once obliterated to take the fort of Carrawburgh, was the Vallum never restored to protect the latter from interference from the south? Could Haverfield have been right when he thought the Vallum diverged round the fort? It would also be of great value if the Vallum could be

traced to Drumburgh fort. Further, before the existence of a secondary fort causeway at Carvoran can be stated with any degree of certainty, an attempt ought to be made to trace the metalling found over the supposed causeway to the north gateway of the fort.

Thirdly, it is desirable to discover more concerning the original, secondary and tertiary arrangements at milecastles. The causeways of milecastle 25, Cadlawhill, or 42, Cawfields, might be selected for such excavations.

Fourthly, further excavation is imperative at Great Chesters to solve the ditch problem. Do the two eastern ditches correspond with the outer pair on the west, and, if so, what area do they enclose? Was an original fort of the Housesteads type planned here and marked by the digging of its ditches? Or are there six ditches on the west?

Fifthly, the purpose of the Vallum has become much clearer, but continued research on its berms with a view to discovering metalling is still desirable. Further work is needed on the branch road question, both from forts through the Vallum to the Stanegate, and from the obvious bends at Down Hill and Bradley to Stanegate forts.

Sixthly, further research into the problem of the behaviour of the Vallum at rivers is no doubt desirable but seems unlikely to be productive of results.

Seventhly, more work is needed to discover the nature of the north and south mounds and their original revetment. Light may thus be thrown on the new point which has emerged at milecastle 23, where an attempt was made to restore the Vallum mounds after the formal obliteration of the crossings system.

Eighthly, further surface investigations ought to be made into the existence of "approaches" to the gaps in the mounds, and thereby into the question of the disposal of the material from the gaps of the crossings system.

Finally, more sections across the Vallum are imperative in order that the profile of the ditch and composition of all mounds may be ascertained. Where crossings exist in the recent type of ditch and where a marginal mound borders an obviously narrow ditch are points of particular value for the confirmation of the thesis here expounded concerning the marginal mound.

In three years of active research no-one could hope to solve the manifold problems of a subject which has teased the minds of archaeologists for centuries. A number of new facts have emerged, however, concerning most aspects of the Vallum, but as soon as one problem is solved, two seem to spring up in its place. These years of research have threefold value: firstly, for the new facts and theories which have emerged; secondly, for the inference that the subject of the Vallum, far

from being exhausted, rewards any attention paid to it; thirdly, and perhaps most important of all, for indicating the lines on which future research should proceed.

Thus this "inscrutable" earthwork, sphinx-like, preserves some of its secrets still. Until they are solved these 76 miles of undulating earthwork, picturesque in their varied rustic charm, will continue to attract, impress, exasperate, bewilder. In the words of William Hutton:

"I climbed over a stone wall to examine the wonder; measured the whole in every direction; surveyed them with surprise, with delight, was fascinated, and unable to proceed; forgot I was upon a wild common, a stranger, and the evening approaching.....lost in astonishment, I was not able to move at all."