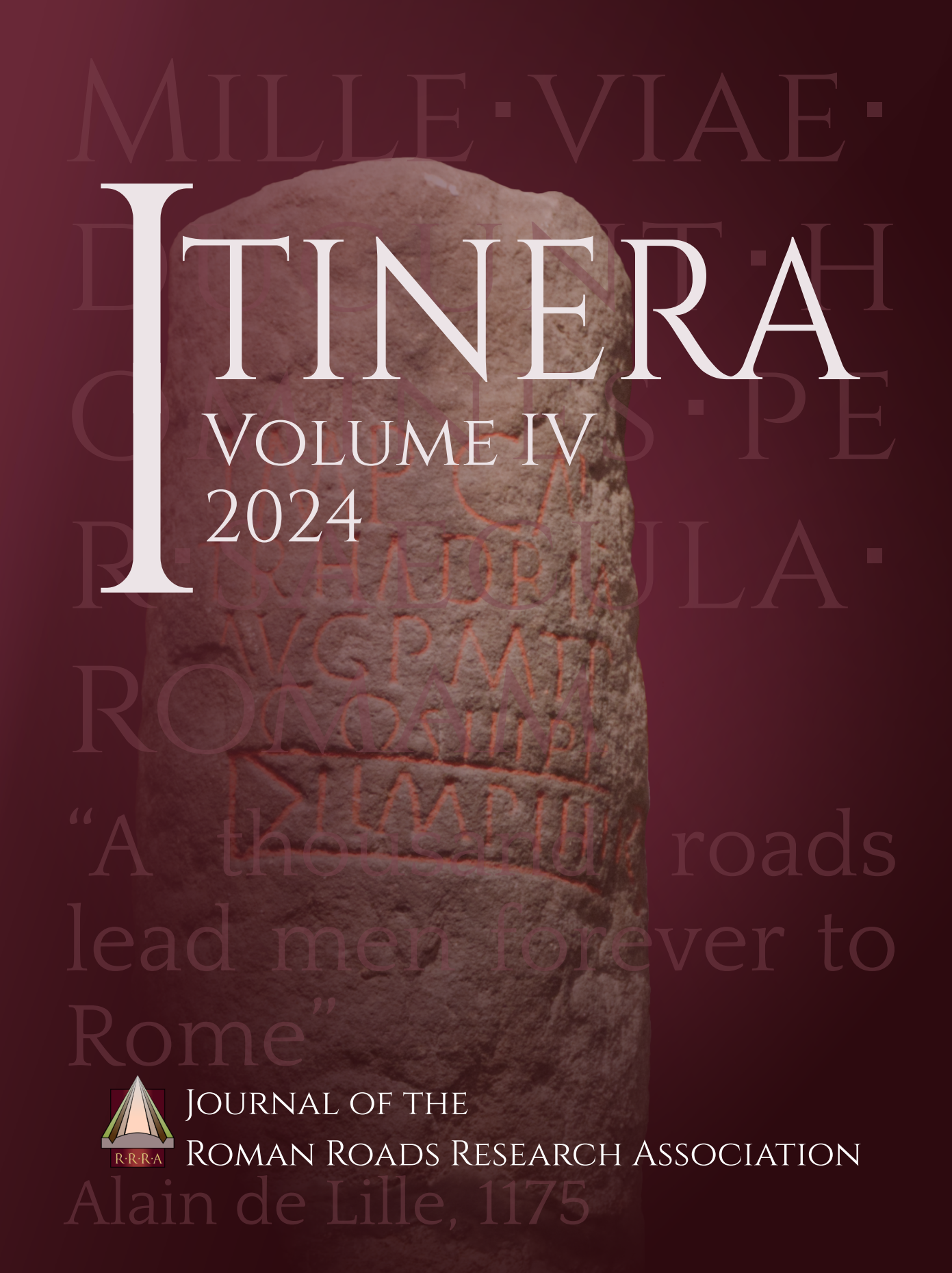


ITINERA

Volume IV
2024

"A thousand roads lead men forever to Rome"

Alain de Lille, 1175

Journal of the
Roman Roads Research Association

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About the Association

by Mike Haken



The late Hugh Toller and I founded the Roman Roads Research Association to provide a focal point for what we thought was a fairly small group of individuals with an interest in the study of Roman roads and connectivity throughout the former Roman province of Britannia. I'm not sure that Hugh, who sadly died in 2016, could have imagined that at the end of April 2024 we would have an international membership totalling 556, a figure that continues to grow. We are a very broad church, ranging from those with just a general interest in the Roman period, through to professional archaeologists from both commercial and academic sectors, not forgetting those those like myself who have had a lifelong passion for the subject (some might say obsession!). The Association welcomes all new members, whatever their background.

The continuing growth in membership may well have been fuelled, at least in part, by some of the things we have achieved. For example, we have just concluded the fourth season of our online lecture series, which we launched in 2021 during the pandemic. As part of our key policy of ensuring that our work is always made as accessible as possible, our talks are open to everyone, are always free of charge, and regularly attract audiences of 200 people or more from across the world. Another excellent programme for our fifth season is being prepared by our Secretary, Dave Armstrong, and details will be released soon. You can catch up with previous seasons on our YouTube channel.

Since 2018, we have conducted over 200 Ha of geophysical survey with our own gradiometer cart, accurately identifying the course of many roads and examining Roman period sites along them. Our most recent survey, assisted by a group of local volunteers from Southwell (SCAG), was near East Stoke (*Ad Pontem*) in Nottinghamshire. This confirmed the location of the junction of RR59(x) from Ancaster with the Fosse Way, making the existence of RR59(x) now beyond dispute. We always welcome suggestions for other potential survey sites, no matter where in the country they might be.

Above all, however, our greatest achievement is *Itinera*, the only journal in the world dedicated to the study of Roman roads and transportation infrastructure. Published entirely in house by our large team of volunteers, we are proud that our standards are as high as most academic publishing houses. Indeed, As Rob Entwistle points out in the following Editorial, it is a measure of our growing credibility that *Britannia*, a journal of the Roman Society, guides authors of reports on Roman roads that would have previously been published in *Britannia* towards *Itinera* instead.

Looking forwards, the wealth of new research and discoveries that have been reported by *Itinera* have, if nothing else, highlighted the urgent need for an accurate map that reflects the true state of knowledge of the Roman road network in Britain, and the sites it served, since the national maps that do exist are either decades out of date or simply inaccurate and misleading. To rectify this situation we will soon be recruiting volunteers to assist with a nationwide project which aims to accurately redraw the map. In line with our Open Access policy, the results will all be made freely available.

Finally, I am sure that our enthusiastic membership will enable us to continue to expand and develop our activities, ensuring that the next decade is even more productive than our first decade has been.

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Editorial

Robert Entwistle



The late Hugh Toller, co-founder of the RRRA with Mike Haken, was sadly lost to Roman road research when the Association was only a year old. Earlier I had become aware of his work through his part in identifying the long-sought line of the Lune valley Roman road out of Lancaster, my native town. Identifying it through Lidar and on foot, he followed its route up and over Lancaster Ridge towards Caton and the southern flank of the Lune valley.

It is therefore a pleasure to see David Ratledge's contribution to this volume of *Itinera*, a memorial to Hugh's work in the Exeter region, developed in the light of further studies. It is appropriate that this same volume contains a significant paper by Mike Haken identifying *viae vicinales* in the north-east Midlands which perhaps should no longer be regarded as somehow 'lesser' or 'minor'.

Itinera has a record of examining different aspects of Roman road studies, not necessarily restricted to our corner of the Roman empire. The 2024 volume sees a new contribution from the Spanish archaeologist and presenter, Isaac Moreno Gallo: the first publication in English of his work analysing road construction methods and transport development. His trenchant views provide a counterbalance to other accounts, reminding us that the evidence of the trowel is always subject to interpretation.

A new departure for this volume is the incorporation of a 'Focus' section with multiple papers exploring a single theme. The subject is the Devil's Causeway – a road which branches off Dere Street just north of Hadrian's Wall to head (via Learchild fort) determinedly towards modern-day Berwick and the mouth of the Tweed – where no Roman site is known. This theme originated in a 2023 conference held in Berwick-upon-Tweed and coordinated by Dr Lindsay Allason-Jones and the Border Archaeology Society with support from the RRRA, exploring the riddle of the road. Expert presentations have been developed into these papers. We would be happy to repeat, in future volumes, similar suites of papers focused upon a single theme or aspect: suggestions for themes and contributors would be welcomed by the Editor.

As always, this volume treats different geographical parts of Britannia, ranging from the south-west (Exeter) to the north-east (Berwick). Paul Booth explores aspects of the Roman road network in the Oxford area, Mike Holmes considers issues around the River Glynde in East Sussex, and Nigel Rothwell examines the possibilities for a Thames crossing linking St Albans and Silchester.

In a full volume, however, we regret the lack of papers on Wales and Scotland, even though these countries are represented in our annual round-up across Britain. Potential contributors suggesting interesting papers on these areas of would find us warmly receptive. *Itinera* continues to welcome every submission from contributors established or new, and if necessary, will endeavour to advise authors where further work is needed for key improvements. A short proposal to the Editor of what is intended, before making a full submission, is often helpful.

Editorial

We take pride in a professional standard of production maintained entirely through the work of volunteers: our editorial board (Mike Haken, Dave Armstrong, Mike Bishop and Paul Booth, all of whom contribute endless hours to the production of each volume); our academic advisor (Pete Wilson); our index compiler (Chester Forster); and postmaster (Chris Webb). Without the dedicated work of the whole team Roman studies would be the poorer.

We are greatly heartened by the respected position that *Itinera* has achieved in the short period of its existence. The long-established journal, Britannia, acknowledges this in specifying that submissions on Roman roads for their annual update section should be limited to brief summaries of the main points of interest if accounts are also published in *Itinera*, with our journal cited for those fuller reports.

An important part of our role, alongside publicising research, is (through the RRRA) the regulation and classification of new discoveries, as Margary's original system of nomenclature strains to adapt to an expanding known road network. This volume therefore contains a list of newly attributed numbers and a proposal from Mike Haken on the classification of non-standard Roman roads.

This year we have taken the decision to slightly reduce the font size to bring *Itinera* more into line with other similar journals and to control printing costs. Even so, readers will find that 2024 marks a bumper issue: the largest volume we have yet produced.

We trust that RRRA members and all readers will enjoy and profit from this 2024 volume of *Itinera*.

Robert Entwistle

(Hon Editor, *Itinera)*

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A Focus on: The North End of the Devil's Causeway

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Questions as to the exact route of the Devil's Causeway at its northern end have been asked for many years. There are also several subsidiary questions to be answered: where is the most northerly confirmed sighting of the road? Does it cross the Tweed between Tweedmouth and Berwick-upon-Tweed and, if so, how? If the road heads purposefully to Tweedmouth, why was this its destination and is there a fort waiting to be discovered there?

In an attempt to answer these questions, the Border Archaeological Society invited members of the Roman Roads Research Association and the Northern Roman Frontiers Seminar to join them for a day conference in Berwick-upon-Tweed in October 2022. Sadly, this event had to be postponed due to 'works on the line' effectively making train journeys to Berwick from Newcastle and Edinburgh impossible on our chosen day. A second attempt was made in May 2023 and this time, despite a rail strike, a very successful conference was held, with lectures followed by a walk along the banks of the Tweed to allow people to familiarise themselves with the terrain.

Much that was new was discussed and it was suggested that the papers should be published so those who could not attend might discover what was discussed and those who did attend could digest the contents at their leisure. The members of the Border Archaeological Society are very grateful to the Roman Roads Research Association for allowing these contributions to be inserted into *Itinera IV*. Sadly, not all the speakers were able to prepare their papers for publication, but it is hoped that the following will provide much food for thought and move on the debate about the purpose of the Devil's Causeway.

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The Devil's Causeway: a Tidal Issue

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Abstract

The following is a discussion as to whether the Devil's Causeway crossed the River Tweed at Berwick-upon-Tweed or was aiming for a port or fort on the south bank at Spittal or Tweedmouth. If there was an installation at the mouth of the Tweed, questions are then asked as to whether servicing such a facility was feasible, how difficult it would have been to sail regularly between the River Tyne and the Antonine Wall in the Roman period, and how long such a journey might take. Was the Tweed the only harbour along the route, or should we be looking for other harbours along the Northumberland coast?

Introduction

There are several puzzles regarding the north end of the Devil's Causeway, the first being where it might be. Locally, Sir Walter Aitchison is believed to have seen traces of the road at Springhill (Tweedmouth) in 1946, but the evidence is not as convincing as usually thought – see below (St. Joseph 1951). More recent work has confirmed the route of the road as far as Berrington (Blyth, this volume), but after that it is elusive although it is presumed it is heading towards the River Tweed. If it reaches the river, does it cross over to continue on its way north or was its target the south bank in order to service a fort or a coastal supply route? To dispose of the fort theory first: Frere admitted that 'no fort is yet known in Berwick', but he postulated, following Margary (1955, II, 209), that 'the place is clearly the destination of the road' i.e. the Devil's Causeway (2001, 291-2). He was sure enough about this to claim the postulated fort could be '*confidently identified with*' the *Oleiclavis* of the Ravenna Cosmography (2001, 292). Sadly, no Roman artefacts to support this theory have been found at Berwick in a convincing Roman context and it is hard to see where the fort would be, what purpose it could have served and how easy would it have been to access if the following arguments are taken into consideration.

Crossing the Tweed

If the road did continue northwards, there would be three ways to cross the Tweed estuary in the Roman period: by ferry, by ford or by bridge, but none of these options would have been easy at the

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time. Whilst there have been ferries across the Tweed since the medieval period, they have been largely seasonal ventures, such as those which ran for the tourists who flocked to Spittal in the 19th century. Ferrying a unit of soldiers across the river at any time of year would have been time-consuming, while moving horses or stock in this way would have been challenging, although by no means impossible if a pontoon-style rivercraft was used or the animals were encouraged to swim across shallow-water stretches upstream. It should be remembered, however, that the Tweed is tidal up to the Union Chain Bridge at Horncliffe, with an average daily variation between low and high tide which can be as much as four metres, considerably more when the Tweed is in flood due to adverse weather conditions nearer its source (*Berwick upon Tweed Tide Tables* 2023). Operating a rowing and/or poling ferry across the river within a mile of its mouth would have been subject to significant constraints of tide and weather.

This tidal element of the River Tweed would also have limited the use of fords. Two fords are mentioned as early as 1541 in the survey by Bowes and Ellerker, one at Tweedmouth church and one at Berwick Streams (Hodgson 1828, 194-202), but the position of the fords across the Tweed has changed many times over the years, usually after the flash floods the river is noted for. The flow and depth of water in any river increases as it rounds bends, so fords tend to be situated on the straighter stretches, of which there are few in the lower reaches of the Tweed. For a ford to be usable, there also needs to be convenient access from both banks; due to the local geology, the Tweed has cut deeply into its bed, creating river cliffs which result in difficulty of access to the water in many places; at Berwick itself, the natural slope of the banks before medieval waterfront development would have been very steep, steep enough to make the passage in winter of pack animals and waggons a hazardous undertaking.

Although ferries and fords could have offered potential ways of crossing the river at Berwick for an army on the march, an advance was not simply a matter of moving troops and horses but involved complicated logistics. The Roman army did not travel light; in his description of the progress of Varus in AD 9, Cassius Dio mentions his army as having with them '*as many waggons and beasts of burden as in time of peace*' as well as '*not a few wives and children*' and '*a large retinue of servants*' (*Roman History* LVI.20.2-5). Moving such a horde across a river as complex as the Tweed would have taken a very long time but, once across, even a small unit would have needed supplies, even if only at irregular intervals, if it was to have a permanent or even semi-permanent presence (for evidence of the nature of such supplies, see Bowman and Thomas 1994). In the case of the River Tweed, a method of crossing which was not dependant on tides or seasons would have been required.

The building of the ramparts and walls considered militarily essential, firstly by Edward I and then by Elizabeth I, impacted on the banks of the River Tweed, with later industry further altering the course and width of the river. (Fig.1) As a consequence, the river today is much narrower and thus much deeper than in the Roman period - the 17th century bridge, which is still used today, is 355 metres long while the Royal Tweed Bridge, which was completed in 1928 and stands much higher above the river, is 430 metres long; in the Roman period a bridge in a similar position would have needed to be nearly 500 metres in length if it was to be well bedded into both its north and south banks. The technical difficulties of building a bridge of such a size should not be underestimated; later attempts at bridging the Tweed at Berwick with a wooden bridge were regularly thwarted by flash floods (see Bankier, this volume), and it was not until 1624 that a stone bridge was successfully completed. Roman stone bridges of any substantial length required abutments and piers (Bidwell and Holbrook 1989), no evidence for which have been found within the Tweed estuary. Unless it was built with a



Fig. 1. Berwick Quayside taken from the 17th century bridge showing the Elizabethan walls to the left, and the build-up of the Quayside as well as the width of the river at this point. Carr Rock is in the far background. Image: Lindsay Allason-Jones

deck that was high over the water, a bridge would also have seriously hindered river-borne traffic, limiting the number of hours in the tidal cycle when vessels could pass through without either grounding at low water or offering insufficient headroom to shoot it at high water. Likewise, it would have prevented seagoing craft from proceeding further upstream. This is not to suggest that the Romans did not have the technical capabilities to build very long bridges (as, for example, the Trajanic bridge across the Danube in Serbia) or high bridges with tall piers (as was built across the Tiber at Rome), but such monumental structures would leave noticeable traces which would have either been found or recorded by antiquarians and there is no evidence for either.

If the Romans did cross the River Tweed at Berwick, where were they going and what would the suggested fort have been guarding? Earlier scholars were convinced that the Devil's Causeway continued on to Newstead, with a postulated Roman fort or 'naval station' at St. Abbs (see Ainslie's 1789 map of Scotland; Sinclair 1834-45; and Stuart 1845), although William Roy found no traces of a continuation of the road through Berwickshire (1793) and no modern scholar has been able to substantiate these claims. The cliff top site at the Needles Eye, excavated by Pre-Construct Archaeology in 2005, is the only site of any size and suitable date immediately to the north of Berwick (NT 9880 5540: Proctor 2012). This site consists of a series of enclosures and was for most of its history a non-defended settlement with a subsistence economy based on mixed pastoral and small-scale

arable farming with an element of salt production. Salt was, of course, always important, but the *briquetage* evidence suggests that this production was probably seasonal and had mostly been abandoned by the early 1st century AD; as a consequence, it is unlikely that this was industry on a scale to have warranted the effort of building a bridge over the Tweed near its estuary or a fort for the protection of that bridge. Other than the *briquetage*, the Roman period finds from The Needles Eye constituted what has traditionally been seen as a typical Romano-British settlement assemblage in Northumberland (Allason-Jones 2009): a couple of pieces of glass bangle and one piece of 1st century samian (S. Gaulish Dragendorff 18 platter: AD 40-100).

Regular traffic heading north of the Tweed more probably kept to the flatter, more sheltered land to the west, keeping well away from the coast in order to avoid crossing many deep-sided ravines; the distribution of Roman sites in the Borders indicates that the nearest forts to the north are all sited well inland and mostly along Dere Street. It is also noticeable that the temporary camps which are known, at Norham, East Learmouth (south-east of Wark) and Carham, are all well to the west of Berwick and all on the south bank. Aerial photography suggests there may also be a marching camp behind Dove's warehouse at Tweedmouth, but this is yet to be confirmed.

The purpose of the Devil's Causeway

A circular argument has developed over the years that the existence of the road indicates that there must have been a port of some kind at the mouth of the Tweed or just inside the estuary, either at Spittal or Tweedmouth whilst, at the same time, a port could explain why the road is aiming for the coast. Wherever it was heading, building the road would have been a major engineering feat, requiring the crossing of several rivers between Halton Chesters and the banks of the Tweed, and it is unlikely that the Roman army would have gone to so much trouble for only limited benefit. It is also curious that, so far, there is only one definite fort along the route of the road: the apparently short-lived Low Learchild (St Joseph 1951, 56; 1955, 85; *Journ. Roman. Stud.* 1957, 206; Birley 1961, 244-5; see also Armstrong, this volume) with a possible, but so far unproved, site at Wooperton (Gates and Hewitt 2007). Most of the other sites which have been suggested as possible fortlets over the years have invariably proved to be temporary camps - probably associated with the Agricolan advance (Gates and Hewitt 2007) - or rectangular settlement sites (eg Hartburn: Jobey 1973, who also discusses Brinkburn on the River Coquet, Hall Hill near Longframlington, Ferney Chesters to the south-west of Hartburn and Mitford). Sir Walter Aitchison in 1946 excavated a site he thought was a small fort or fortlet at Springhill reservoir at Tweedmouth but, despite the pottery including a now missing fragment of what was described as a late 3rd century mortarium, this is unlikely to have been a Roman military site (St. Joseph 1951, 56). Sadly, other than Hartburn few of these sites have been given a thorough excavation to prove the point one way or the other. One accepted fortlet has been surveyed at Longshaws (NZ 134 884), but this sits 3 km to the east of the known line of the Devil's Causeway and its relationship with the road is, therefore, open to debate (Welfare 2011). There has been a general presumption that other forts could have been ploughed out, but any fort that has been used for any length of time produces artefacts – see, for example, Elginhaugh, just south of Edinburgh, which was occupied for barely a decade (Allason-Jones 2007). No artefact scatter or, indeed, many single Roman artefacts have been found along the line of the Devil's Causeway except at river crossings (Allason-Jones 1996); Dere Street, on the other hand, has produced a regular scatter along its length (see Portable Antiquities Scheme database).

It has been argued that the Devil's Causeway was only used by cavalry and that is why there is only one definite fort. This seems rather unlikely - even if the road was primarily an early frontier (Hodgson 2017, 36, 72), any fort or fortlet along its length would have required provisioning, and that would have required carts and pack animals which move more slowly than cavalry horses. Harness pieces have been found at Berrington, however, which may suggest that some cavalry were using the road (see Blyth, this volume), although that might be stating the obvious.

A port on the north bank would, for reasons outlined above, have been usable only for goods from the area immediately north of the river. Whether the south bank site implied by the evidence was a port with permanent shoreside facilities or simply a temporary beach-based market, it might be postulated that it was intended to provide a place for the army to take on provisions from farms in North Northumberland. The problem with this suggestion is that the evidence, as it survives, still seems to indicate that most of what have been traditionally called 'Romano-British settlement sites' had been abandoned by the mid-2nd century AD throughout the county. There have, however, been recent suggestions which propose a well populated productive coastal plain with co-operative inhabitants continued beyond this date (Hodgson, McKelvey and Muncaster 2012), but if there were still farms, were these elusive farmers supplying garrisons to the north or to the south?

These questions may currently be unanswerable, but if the Devil's Causeway was intended to provide a supply route to or from the coast or included this in its remit, then there are also questions to be answered as to how easy it would have been for a merchant ship or military supply vessel of the period to ply these waters and thus use this suggested facility.

Coastal Traffic

The evidence is clear that the fort at South Shields was intended as a supply depot, particularly during the Severan advance into Scotland (Bidwell and Speak 1994), but how difficult would it be to sail a cargo from South Shields to Berwick in a Romano-Celtic vessel? We have more knowledge of Roman sea-going vessels in the Mediterranean than in Britain, but the remains of the 19 metre-long *Blackfriars I* found in the River Thames (Marsden 1994) and the 25 m *St. Peter Port I* from Guernsey (Rule and Monaghan 1993) would appear to represent the types of Romano-Celtic vessels that were crossing the English Channel on a regular basis and these would have been capable of sailing up the north-east coast (pers. comm. Prof. Boris Rankov; see also Ellmers 1996, 68-71). Calculations suggest that even the smaller *Blackfriars I* carried up to 60 tons of cargo, equivalent to 120 carts pulled by a single ox. This can be compared with Marcy's claims that 1000lbs was a cartload which a single ox could be expected to pull (Marcy 1849). The United States War Department's *Ordnance Manual* of 1862 considered 1500lbs per single ox cart load not unreasonable, although it is not clear how far it was expected the ox should struggle with such a weight. In the Roman period the *Cursus Publicus* had load limits which changed over time; according to the Codex of Theodosius in AD 368, an *angarias* (possibly a post-wagon) might carry a maximum of 1500lbs and a *raeda* (post-carriage) 1000lbs, but a post-horse was only allowed to carry 30lbs (*Cod. Theod*. 8.5.30). A later entry dated to AD 385 adds a limit of 600lbs for a *carrus* (cart) (*Cod. Theod.* 8.5.47), but the amounts allowed could vary, depending on the commodity being transported (*Cod. Theod.* 8.5.48). Whilst it is not always possible to be certain exactly how the Roman weights relate to modern weights, nor how fast the traffic using the *Cursus Publicus* would travel compared to ox carts carrying cargo, these equivalents do suggest a considerable

number of carts would be travelling up and down the Devil's Causeway during the sailing season, if the mouth of the Tweed played a major part in coastal traffic.

Further queries are: how long would passages take and how often would it be feasible to attempt them in a year? There are two matters that need to be taken into account to come to any conclusions: tidal influences and the nature of the presumed departure point, that is, the mouth of the River Tyne. Tidal influences, both in respect of range (height) and the character of the inshore tidal streams (currents) would have been much as today. As yet, however, there is no hard evidence regarding the hydrography of the Tyne's entrance in Roman times, although it will not have differed so significantly as, for example, the Caister-on-Sea (Norfolk) entrance and the Yare-Waveney (Norfolk) estuaries today (Ashwin and Davison 2005, 29). The Tyne's south bank may have featured an inlet near the Mill Dam (South Shields) and will have displayed extensive tidal flats at Jarrow, where the main river received the inflowing Don. As with all rivers along the north-east coast, the Tyne had an 'entrance bar', although a relatively navigable one, giving minimum and maximum depths of some two and six metres at low- and high-water of spring tide respectively. Rock reefs to the north and a 'hard sand' (shoal) to the south undoubtedly required seamanlike care upon arrival and strong onshore winds spelt danger, but once inside the entrance the natural harbour was safe and roomy. The exact location of the loading dock within this harbour at South Shields has yet to be found.

Historically, seafarers have been ambiguous about coastlines, welcoming the navigational advantages of 'sailing within sight of land', but wary of the physical hazards involved. The Romans, generally speaking, did not like to sail far from the shore and, if possible, avoided sailing at night (Casson 1994). Of course, our understanding of shipping in the Mediterranean, as recorded by the Roman authors, has influenced our ideas about sailing in the Roman world in general, but, as Boris Rankov has warned (pers. comm.), Mediterranean sailing habits may not be pertinent to the north-east coast of Britain, and, although relatively little is known about Iron Age sailing techniques or vessels in Britain, the documentary evidence for the nearby Atlantic Celts suggests that 'they were clearly seafarers of some competence, able to deal with the hazards of coasts, channels and archipelagos, and also take advantage of tidal flows' (McGrail 2001, 206-07).

The coast of north-east England and south-east Scotland can be dangerous sailing territory, with tidally limited river entrances, long stretches of cliff and/or reef and broad beaches with wide, impassable surf zones. In the 18th/19th centuries more sophisticated sailing craft than were available to the Romans came to grief with depressing regularity along the Northumberland coast – one gale which lasted for three days in April 1799 led to the loss of 14 sailing vessels between Blyth and Holy Island alone (Osler 2013, 14-15). It is, therefore, not improbable that Roman sailing ships, whether military or civilian, erred on the side of caution by avoiding the more frequent storms and short days of winter. Indeed, it is likely that Roman coastal traffic was confined largely to the summer months, utilising the longer daylight hours at 55°–56°N and the more clement conditions. Analysis based on modern weather data suggests that the opportunities for Roman (square-rigged) shipping's north-bound Tyne to Forth passages were best in springtime, whilst summer offered equality of chance for both north- and south-bound trips - although the former would gain the advantage of the coast's diurnal sea breezes. Sailings in early summer risked the region's notoriously dense sea fog, known locally as the 'haar' (Osler 2023, 6-8).

It seems likely that passage-making would be based on a simple strategy of day-sailing between successive anchorages or havens at which the ship could stop overnight, or maybe seek shelter in adverse conditions. Positing a conservative speed of 2–2.5 knots over a 'day' of 12 hours (in which the

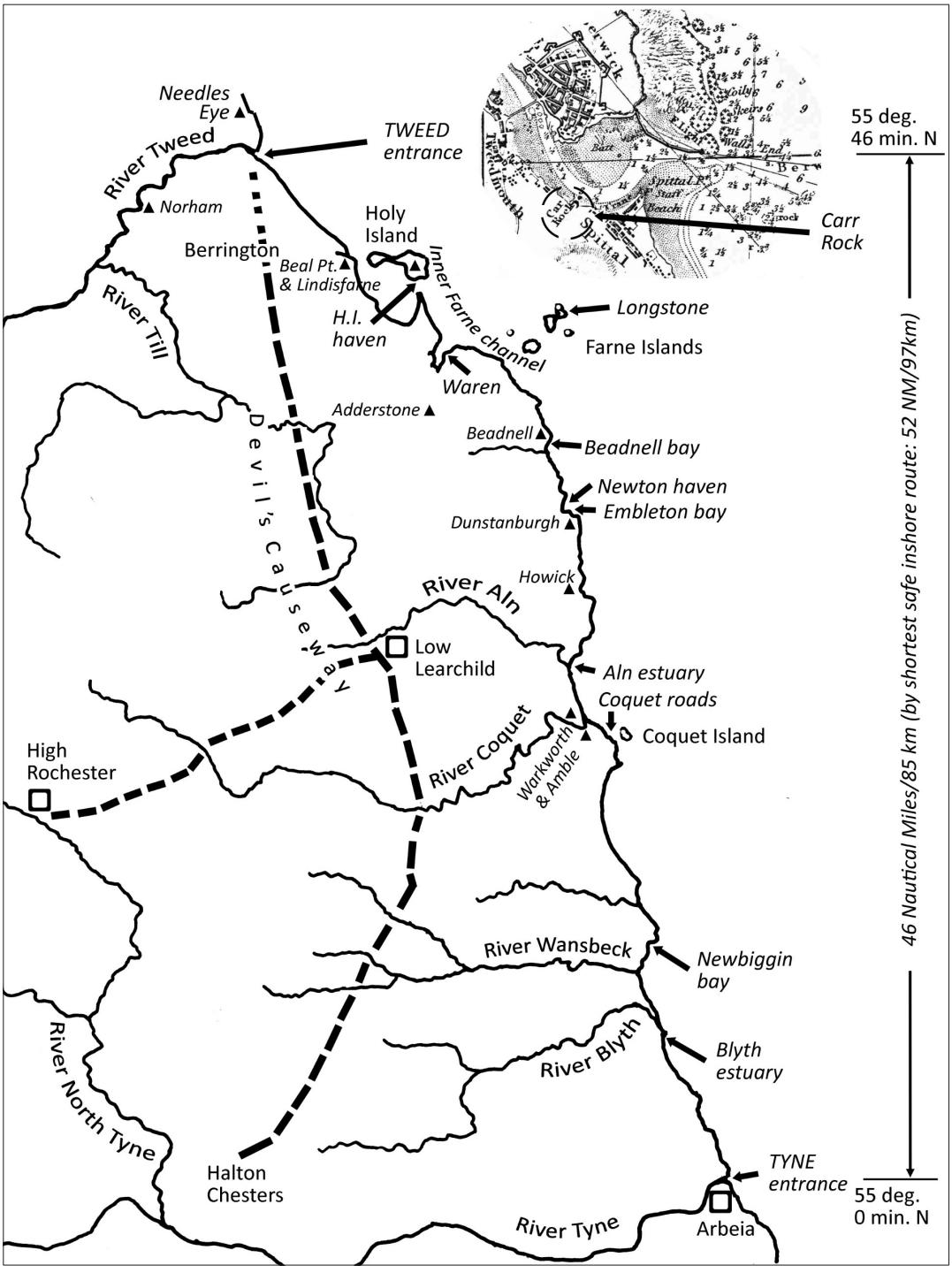


Fig. 2. The Devil's Causeway and the North East Coast, with locations referred to in the text (inset - Berwick harbour and approaches as of 1831).

tidal streams cancel out) then stopovers would be required approximately every 24-30 nautical miles or less. This would seem achievable on the Tyne to Tweed section of the route using, possibly, Blyth/Newbiggin, Coquet Roads/Aln estuary, Embleton Bay/Newton haven and Holy Island/Waren, as stopping points (Fig. 2). Experience, however, suggests this would have been much harder along the section from the Tweed (or Eyemouth) to Leith as this involves rounding St. Abb's Head into the Forth's open waters and traversing some 45 miles of cliff- and reef-lined coast before reaching the relative safety of Dunbar Roads. The few exposed anchorages in this section are tenable in offshore winds only (Osler 2023, 8-11). Fortunately, the route's final leg from Dunbar to Leith was less challenging.

When planning his trip, a putative 'Romano-Celtic' ship's master will have been aware of two unavoidable risks: passage through the Farne Islands and rounding St. Abb's Head. For the former he would, like most modern small boat sailors, probably have chosen the shorter inshore passage (Inner Farne Channel) rather than adding several miles distance and facing the elements and dangers further out around Longstone (Matt Moore pers. comm.). But whichever course was chosen, the master had to time his run through the Farnes' renowned 'tidal gate' precisely, ensuring clearance of the islands during the favourable six hours of tidal stream which, at fortnightly springs, could run at several knots. Elsewhere the tidal streams were modest, one knot or slightly more, but still quite sufficient to retard the ship's progress in light or unfavourable winds, requiring the master to anchor or even turn back (Osler 2023, 4-5). At St. Abb's Head these modest tidal streams prevailed, and the dangers of rounding the Head arose largely from the seas in the area having an unusual depth right up to the cliff face, making anchoring unfeasible. As a result, in order to get into the best position for rounding the Head into the Firth of Forth, a small sailing ship going north from the Tweed might need to anchor at least twice along the coast before attempting the manoeuvre (Matt Moore, pers. comm.).

What kind of passage times might have been achieved over the entire Tyne to Forth route? In attempting to answer that question it is useful to work from comparative data. During the 18th and 19th centuries the region's comparable small coasters regularly made the passage from Leith to South Shields in eight to ten days, whilst a full round trip – including loading and discharge – usually took about a month. Based on the factors outlined above, the minimum achievable trip between South Shields and the Antonine Wall might be estimated as at least ten days if conditions were favourable. However, it might easily have been twice that length (or more) if adverse weather or accident intervened. On average, a round trip of six to eight weeks can be envisaged, permitting two or three trips for each ship in a summer season; regrettably, there will also have been accidental losses. This has implications for the size of the fleet required, particularly in the Antonine and Severan periods.

A port on the Tweed

Returning to the Tweed and leaving aside the uncertainties of ship availability and seafaring competence, it is appropriate to consider the potential relationship of seaborne traffic to the presumed north end of the Devil's Causeway. Was there a deliberate convergence of land- and sea-roads? Historic evidence suggests that the Tweed estuary was never easy of access, owing to a strong cross current that might occur in the approaches, and the river's '*heavy freshes*' which, combined with onshore gales, frequently and '*materially change the positions of the sands [i.e. shoals] at the entrance*' (Baharie 1849, 37). Generally, there was a minimum clearance of about two metres over these,

although an expert 19th century hydrographer published the entrance depth as '*uncertain from shifting sands'* (Johnson, 1831); it probably differed little in Roman times. Nevertheless, once inside the Tweed's entrance, shipping found a relatively safe refuge and adequate mooring space, even a natural jetty:

> *'On the south side of the river is a large sand-stone rock called the Carr, projecting from the shore, round which is the deepest water and best anchorage in the river. Vessels generally moor there with a fast [rope] to a ring in the rock and an anchor in the stream'* (Baharie 1849, 36); (see Figs. 1 and 3).

Advantageously, there was also a shelving foreshore just upstream that was suitable for vessels needing to beach on the tide for purposes of loading and discharge, or repair. Significantly, or otherwise, the postulated stretch of the Devil's Causeway at Springhill, although open to doubt, aligns with this Carr Rock shore, making this point a strong candidate for the destination of the Devil's Causeway. Much further south it is also relevant to ask whether there are any side roads off the Devil's Causeway heading to the coast and other convenient ports or havens? So far there is little or no evidence for these, although the suggestion by MacLauchlan, in the mid-19th century, of a possible route along the valley of the River Aln between Alnmouth and Thrunton – ie the site of Low Learchild fort – may be worthy of re-examination (MacLauchlan 1864, 55, 57; Osler 2023, 14).



Fig. 3. The Carr Rock, on the south side of the river, was still used by merchant vessels in the 19th century. Photograph courtesy of the Crossman family and Berwick Archives.

Artefactual evidence for coastal activity

Do finds of Roman artefacts suggest the whereabouts of some of these other coastal candidates for Romano-Celtic shipping activity? There have been remarkably few finds of Roman date discovered along the coastal plain, even though many more Romano-British settlement sites are now being found than previously anticipated (Proctor 2009; Hodgson, McKelvey and Muncaster 2012). One unusual find is an altar fragment from Gloster Hill, near Amble (Fig. 4; *RIB* 1206), whose surviving inscription indicates it was dedicated '*To the goddesses of the Parade Ground ... the 1st Cohort....*'. This reference to a parade ground suggests the altar came from a full-sized fort, for which no evidence has ever been found in the area, suggesting that the artefact was probably brought to Amble by an intellectual cleric or landowner at a later period and is, therefore, of little help in identifying a Roman presence in the vicinity.



Fig. 4. Fragment of an altar from Gloster Hill, near Amble, dedicated to 'The Goddesses of the Parade-Ground'. RIB 1206. Courtesy of the Great North Museum and the Society of Antiquaries of Newcastle upon Tyne.

Coins are among the most common finds along the coast. As early as the mid-19th century, a coin hoard in a box with a bronze scale beam, bronze weights and an iron bridle was found at Adderstone (Archbold 1858; Tate 1863). In the early years of the 20th century, there was a donation to the Society of Antiquaries of Newcastle upon Tyne of five coins found at Norham (*PSAN* 2nd ser. 10 (1902), 168; for more recent coin finds from Norham, see PAS: NCL-99F5D8; NCL-C810DI; NCL-999E53). Other coin finds reported to the Portable Antiquities Scheme from the coastal plain include a sestertius of Trajan found near Amble (PAS: NCL-A69E11), other Roman coins from Beal Point (PAS: NCL-139DB2) and from Berwick itself (PAS: NCL-4EC612). At Warkworth a selection of coins of various dates was found with part of a distinctively Roman lock and a fragment of a key (coins: NCL-4751C4; NCL-8CE512; NCL-

8C9294; lock: NCL-7F9275; key: NCL-5265D4). It must, however, be noted that Roman coins have a habit of arriving on these shores in the luggage of tourists or people who have served in British military or the Merchant Navy in the intervening years; none of the coins listed above have been found in a recognizably Roman context.

At Dunstanburgh a settlement site was excavated in 1936 which, as well as Roman coins, also produced a bronze head-stud brooch, two button-and-loop fasteners, a fragment of a Roman helmet or shield binding, black burnished ware and samian ware, as well as the usual glass armlets (Bosanquet and Charlton 1936). That is an unusually rich assemblage for a settlement site in Northumberland, perhaps implying that its inhabitants had contact with a wider selection of Roman merchandise than most of their neighbours. The penannular brooch found by Tait in 1970 at Beadnell, was found in a re-used burial cist (Tait and Jobey 1971). More recently, a copper alloy phallic pendant has emerged at Howick (Fig. 5: PAS: NCL-D8AF10) and a copper alloy figurine of a naked male at Lindisfarne. Many of these loose finds could have arrived at their findspots in more recent times, but the amounts are beginning to add up to suggest more activity along the coastal plain than previously believed. Sadly, the findspots do not clump geographically in a way that might indicate sites in regular use by visiting vessels.



Fig 5. A copper alloy phallic pendant of Roman date found at Howick (Portable Antiquities Scheme: NCL-D8AF10).

Conclusion

The east coast of Northumberland has experienced much change over the centuries. Acres of land have been lost to coastal erosion, there has been considerable industrial activity and no river mouth in Britain is as it was in the Roman period, so a great deal may have been swept away or built over (Waddington 2010). The mouth of the Coquet changed dramatically in 1765, whilst the changes at the mouth of the Aln in the early 19th century, although less dramatic in timescale, were equally dramatic in effect (Osler 2022). At Berwick-upon-Tweed, the colossal Elizabethan walls complicate modern understanding of the original interaction of land and sea at the mouth of the Tweed.

Despite these hindrances to our knowledge, it is hoped that this paper has provided convincing arguments that the Devil's Causeway did not cross the River Tweed in order to access a Roman fort at Berwick-upon-Tweed or continue north into Berwickshire. The resulting presumption is that the road terminated in proximity to the safe anchorage of Carr Rock. Exactly why the road was aiming for this vicinity remains less clear; indeed, it is still open for discussion whether the road was heading for an existing port or if the building of the road made establishing a port economically or militarily feasible. If the target was a port, it is yet to be determined whether this was a supply depot with appropriately military shoreside facilities or simply a civilian beach market. Whichever it was, the complications of coastal traffic at that period suggest that the facilities may only have been used seasonally. It is also possible that other ports or havens between South Shields and the Antonine Wall remain to be found, as are the side roads leading to them.

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Crossing the River at Berwick-upon-Tweed

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Abstract

Whenever roads of any length are built, eventually they will need to cross a river. The problems encountered in ensuring that a river crossing provided a safe and dry means of access between the banks in all weathers and seasons are common in all periods of history. The building of the 17th century 'Old Bridge' at Berwick-upon-Tweed offers a case study which has relevance for our understanding of how Roman engineers will have approached the problem of getting roads across rivers. It also indicates how building a suitable bridge was not the only challenge; maintaining that bridge in the face of flash floods, storm surges and other natural damage offered another, longer-term series of problems.

Introduction

Today at the mouth of the River Tweed, there are three iconic bridges which span the river and allow people to cross it easily: the 17th century 'Old Bridge', as it is known by locals, which still takes road traffic, the Royal Border Bridge, built between 1847 and 1850 to carry the railway and the Royal Tweed Bridge, which was constructed between 1925 and 1928 as part of the course of the old A1. What happened before these bridges were built, how the river was crossed and why it was particularly important to be able to cross it at this point where it enters the sea, are all questions which are relevant to the course of the Devil's Causeway.

The River Tweed is a strategic river which has been looked upon variously as an obstacle or an asset, depending on which nation it belonged to at a specific date in history. For some of its length, the Tweed is now the boundary between England and Scotland but the border deviates around Berwick, with the town and its bounds being on the north bank of the river yet still part of England. This has been the case since 1482; before that date Berwick changed hands many times, with the border often being well to the south. Whenever possible, the English armies preferred to have a base on the north bank as this meant they did not have to cross the river before confronting the Scots; for the Scots, holding Berwick provided access to a port as far south as possible on the east coast.

When considering how the river might have been crossed by civilians and armies in the past, there are three options available which show a progression from a temporary to a more permanent solution. Fording points are the first option and it is clear that the River Tweed has been crossed this way in the past, near Norham and also at Berwick itself, amongst other places (Hodgson 1828, 194-202;

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see also Allason-Jones and Osler, this volume). According to the local historian, Francis Cowe (pers. comm.), the fording point near Tweedmouth Parish Church on the south bank across to the Shoregate, mentioned by Bowes and Ellerker in 1541 and referred to by Hodgson in 1828, is no longer visible due to the construction of the Tweed Dock in the 1870s and the effect of that work on the river. This position makes perfect sense, as the original route north through the town of Berwick would have been via Hide Hill and Church Street before passing Wallace Green and then onwards to the north. However, fording the River Tweed would have only been possible at certain times as the river is tidal right up to the present Union Chain Bridge (see Allason-Jones and Osler, this volume). The course of the river will have altered several times over the centuries and the time of the year and changeable weather conditions would have made this an unreliable option.

A more dependable method would have been by boat. This would still have been dangerous, but there is evidence that this was the preferred method of crossing the Tweed, particularly before the construction of more permanent solutions. For example, in 1211, a huge "galley", possibly a raft, was used to transport King John across the Tweed when meeting William the Lion of Scotland, a situation brought about by the destruction of the bridge in the massive storm of 1210, which destroyed bridges across the country, including that at Perth (Sheldon 1849, 39; Graham-Campbell 1994, 4). A boat must still have been the best way to cross the river in the 14th and 15th centuries. Moving forward in time, a ferry still operated between Spittal and Berwick in the early 20th century, as can be seen in extant postcards of the Border Maid and the Susan in Berwick Archives.

Ultimately, the best way to guarantee crossing the river over a prolonged period was to build a bridge either of wood or, for a more permanent structure, of stone. As well as providing a more reliable crossing in all weathers and seasons, this would also allow a larger volume of people and goods to be carried over the river at any one time.

Building a Bridge

Since the early medieval period, there has been a series of bridges over the Tweed joining Berwick and Tweedmouth, each progressively more solid in their appearance and construction. The earliest documented bridge was in existence in the period 1153 to 1165. During this time Malcolm IV of Scotland issued a charter to the canons of Jedburgh Abbey in which he refers to a salmon fishery in the River Tweed at Berwick 'above the Bridge' (Cowe undated; see also Johnstone 1817, 121, who places this bridge '70 or 80 yards above where the present stone one stands', ie Berwick Old Bridge). This was probably a totally wooden structure as it was comprehensively swept away by floods in 1199 (Cowe 1980). After the destruction of the bridge in 1210, mentioned above, there is a reference to another bridge in 1216, which is recorded as having stone piers and a wooden deck, implying a more elaborate structure (https://www.scotlandsoldestbridges.co.uk/berwick-bridge.html). However, as was the fate of many bridges on the Tweed, this was also swept away by floods coupled with high tides and debris coming down the river (Johnstone 1817, 121). The next mention of a bridge appears in the *Lanercost Chronicles* and is dated 1296 (Maxwell 1913, 108; Scott 1888, 408). This refers to a tremendous flood breaking down the bridge, demolishing a tower on it (indicating it was fortified) and sweeping the people who were on the deck out to sea. This bridge was only about nine years old at the time of its destruction; according to the *Scalacronica* in the 14th century, it broke because the arches under which the water flowed were not strong enough or high enough to take the strain (Maxwell 1907, 9; Hearne 1774, I, 293). During the 14th and most of the 15th centuries there doesn't appear to have been

a permanent bridge which linked Berwick and Tweedmouth, although Chalmers (1807-24) records that in 1376 Edward III ordered the local fisheries be taxed in order to raise funds for a new bridge, a project which failed due to the Bishop of Durham's refusal to allow the bridge to come onto his land; instead, the river was crossed by ferry or horseback at low tide, which must have been both inconvenient and challenging as well as impeding trade.

In 1482, Berwick was captured by the English, and, at the time, no-one would have been certain how long it would remain in their ownership; despite this uncertainty, Henry VII built a new bridge across the river to help ensure easier communication between the town and the rest of his Kingdom. This bridge existed by 1498 and was constructed of wood, but was based on at least one stone pillar, probably a legacy from an earlier bridge. The construction was mainly sets of wooden posts driven into the riverbed, with a railed deck laid flat on top of them. For defence there was a drawbridge and a strong stone tower on the bridge near the Tweedmouth shore (Scott 1888, 411).

In 1503, Margaret, the daughter of Henry VII, crossed this bridge at Berwick on her way to Edinburgh to marry James IV of Scotland (Scott 1888, 106). However, although it was a more permanent structure which was well used, ice floes and floods on the river constantly damaged it; for example, three piers had to be reconstructed between 1568 and 1574 as well as all the woodwork being replaced, which cost £4004 15s 9½ d (equivalent to about £950,000 in 2017 (National Archives Currency Calculator)). This bridge is the first that can be confidently located on contemporary maps, the earlier efforts having left few traces due to the strength of flood water in the intervening years. According to John Speed's map of Berwick, it reached the north bank of the river just slightly further upstream to Berwick Old Bridge, near the entrance to the New Road and Bankhill (Speed 1610). This will have been the bridge commented on in 1584, as being long and wooden by the German traveller Lupold von Wedel (von Bülow 1894, 223-70). It does not seem to have been well maintained: it was King James VI of Scotland's first encounter with an English Bridge when travelling south to be crowned King of England in 1603 and he seems to have been unimpressed, as he is reputed to have said '*Is there ne'er a man in Berwick whae can boo stanes to mak' a brig over the Tweed?*', although it should be noted that the earliest reference to this remark is by Sheldon: 1849, 39, and it may be apocryphal.

It was clear that there was a need and also a willingness to construct a more substantial permanent structure near the mouth of the River Tweed. As the kingdoms of England and Scotland were now united, there was more traffic going back and forth and it was not cost effective to continually repair wooden structures which were not likely to last and were unable to cope with the weather conditions. The final straw was in 1608 when James Burrell, the Surveyor of the Bridge wrote to Lord Salisbury, Secretary of State, on 15 February that he was very worried because the river was in spate and bringing down ice, which would damage the bridge. His fears were justified, with the consequence that:

> *'Yesternight, between 6 and 7 of the clock, the spate rose here and brought the ice so fast upon the bridge as ten pillars and eleven bays thereof, being in the strength of the river, were then thrust down and carried away.... The rest of the bridge is in many places so shaken as I expect no other but still the falls of some of them. All feasible means I used to have prevented this, but the ice was with the furious and fast current of the spate so forcibly cast against the bridge....'.* (Scott 1888, 411).

No one was hurt in this disaster, but the bridge was now beyond repair and it was clearly time to consider constructing a new one which might better withstand the local conditions. The main person behind this project was the Earl of Dunbar, who had great influence with King James I. He persuaded the king that a new bridge was essential and that it could be viewed as a symbol – a link between

England and Scotland on its major east coast road (Colvin *et al.* 1982, 771). Sadly, Dunbar was unable to see the project through to fruition because he died in early 1611. However, Sir William Bowyer, Captain of Berwick, continued his work (Colvin *et al.* 771). Initially, the plan was to have a stone bridge over the middle of the river and then wooden elements at both ends; however, two more timber arches of the original bridge collapsed and eventually it was agreed to build a wholly stone bridge at the estimated cost of £8,500 (equivalent to £1,139,812 in 2017). This money was to be provided indirectly by the Crown and as proof of the money spent, the town was required to keep weekly accounts of expenditure, including the amounts paid to each workman. These volumes still survive in the Berwick Archives (Ref: BA/G/2/13/258).



The Old Bridge at Berwick-upon-Tweed completed in 1634; the Royal Tweed Bridge, completed in 1928, can just be see in the background. Photograph: Siobhan Bankier.

Work started on the Bridge in June 1611 and was not without its trials and tribulations, as can be seen in the Bridge account books. Timber was transported from Chopwell, a Royal Forest near Gateshead, down the River Tyne and then by ship to Berwick and into the River Tweed. Even then the channel was narrow, and the ship ran aground, which meant her load had to be taken off by horseback. The various trades employed in building the bridge indicate the range of skills required in building such a structure: masons, carpenters, smiths, quarrymen, sawyers, shipwrights, lightermen, labourers and boys as well as a surveyor and clerk of works. All these tradesmen were individually listed with their rates of pay and the number of days or tides worked – some tasks could only be attempted when the

tides were right, which meant that on some days few hours could be worked leading to delays. As ever, the cost of the Bridge kept increasing and more money had to be granted. By May 1617 the original grant of £8000 had been spent and a further grant of £4000 was agreed in July 1618 (Scott 1888, 414). Work progressed and the bridge was taking shape, but there were still delays due to the seasonal problems of the river flooding and debates as to how various aspects of the work were to be carried out. By 1620, the Bishop of Durham had got involved and it was suggested that the work should be let out to contract instead of just paying all the workmen until it was finished (Colvin, *et al.* 1982, 774-775). This was agreed and real progress was being made when disaster struck in October 1621 with the arrival of another storm which washed away more of the older wooden bridge the remains of which when travelling downstream damaged the new bridge and undid the work which had been done in the previous year. More money had to be granted to continue work and by 1624, the bridge was passable but not completed. It was to take until 1634 to complete it all and by then it had cost nearly £15,000 (equal to £1,832,238 in 2017) and was well over budget, but the result was an impressive stone structure which has withstood the test of time (Fig. 1). This bridge was to remain the main pedestrian and vehicular access between Berwick and Tweedmouth and formed part of the Great North Road running between London and Edinburgh until 1928 when the Royal Tweed Bridge was opened.

Conclusion

Today the 'Old Bridge' is the lowest crossing point on the River Tweed and it is a testament to the strength of its construction that it is still used today by both pedestrians and cars. The history of this bridge, its predecessors and the earlier ferries and fords demonstrate that crossing points are usually placed strategically – in this case either to provide access to Berwick from the rest of England or to give the Scottish armies access to the Bishop of Durham's lands in Tweedmouth - and evolve from temporary to more permanent solutions as the need for them and their usefulness is acknowledged.

The building of the 17th century bridge also shows what a major investment building a bridge represents. It took time (in this case 23 years), a very large and varied workforce, a considerable quantity of material which needed to be transported, often from some distance, and the builders had to contend with the vagaries of the weather and tides to the extent that their work might be swept away as it was being done. To go to this much trouble, the authorities had to be very sure that the cost-benefit equation stacked up and that there were guaranteed long-term gains.

The course of the River Tweed at its mouth would not have been exactly the same in the medieval period or, indeed, in modern times, as when encountered by the Romans when they were constructing the Devil's Causeway. However, to cross this river, they will have faced the same questions and had the same dilemma as those who followed them - how and where do you take a large volume of people across a river when there is no bridge and is building a bridge worthwhile? Such an obstacle of nature will have halted many an army or invader in the past and forced them to decide whether the likely benefit of gaining the other bank was worth the effort involved in building and maintaining a major engineering structure.

In conclusion, crossing the Tweed at this juncture, near its mouth, was always a challenge until a permanent stone bridge was built which allowed the safe passage of large amounts of people at any time. Prior to that, armies and others were very much dependent on nature – the time of the year, the weather conditions and most importantly the tides, being crucial factors in safely crossing the river.

Acknowledgements

The author is grateful to Keith Elliot, Lindsay Allason-Jones, Jane Pigney, Prof. Jim Crow and Dr Stephen Veerapen for helping to track down some of the more elusive references.

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The Devil's Causeway: Current Understanding and Future Work

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Abstract

This summary is broken into three parts: what we know about the Devil's Causeway, what we do not know and what our Association is currently doing to close the gap.

What do we Know about the Devil's Causeway?

It has long been known that a Roman road ran from north of Hadrian's Wall, branching from Dere Street and running generally north-east to north towards the mouth of the Tweed at Tweedmouth. Horsley, amongst others, mapped it that way (Horsley 1732, map after p. 156) (Fig. 1). While his mapping appears to be more illustrative than specific, lacking the precision of modern GPS, intriguingly he shows the Devil's Causeway crossing over Dere Street and continuing on towards the fort of Chesters on Hadrian's Wall. Was he aware of some evidence or was he making assumptions and just joining the dots?

It is thought that the name of the road comes from the early medieval period, created by those who could not conceive that such a massive straight structure might be man-made and it must have been the work of the Devil. In some areas it is also recorded as being called Cobs or Cobbs Causeway.

The first scientific step in recording the course of the road was made through the 1850s and published in 1864, by Henry MacLauchlan. This was at the request of the Duke of Northumberland, a keen antiquarian himself, with a full survey of the course of the road accompanied by a commentary and additional notes (Fig. 2). This also covered a survey of Margary's RR88, from High Rochester to what we now know as the fort at Low Learchild, although MacLauchlan was unaware of the fort's presence and its significance adjacent to the junction.

The next significant work was undertaken by R.P. Wright, just prior to World War 2, when the nature, structure and dimensions of the road were determined at a large number of locations where it was most obvious in two of the segments in its central and southern areas (Wright 1938, 351-361; 1940, 65-74). Wright found the road was typically about 24 feet (7.3 m) wide at its south-western end and around 19 feet plus (5.8 m) in the central segment. It was solidly built with bottoming and a metalled

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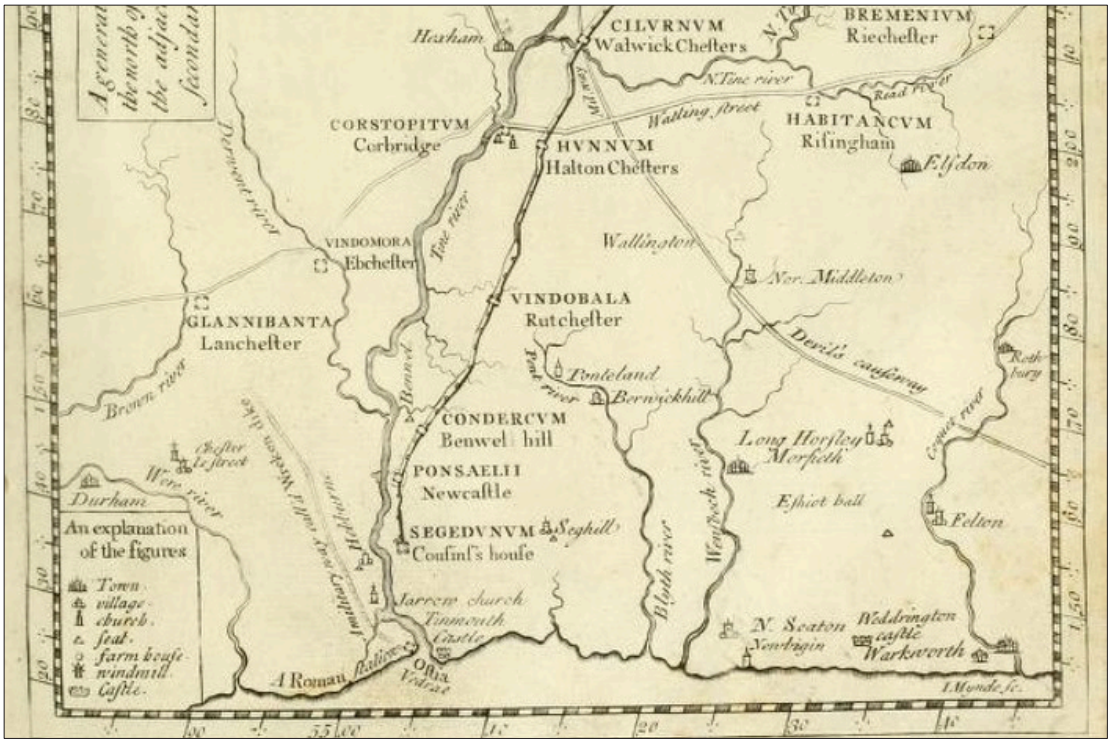
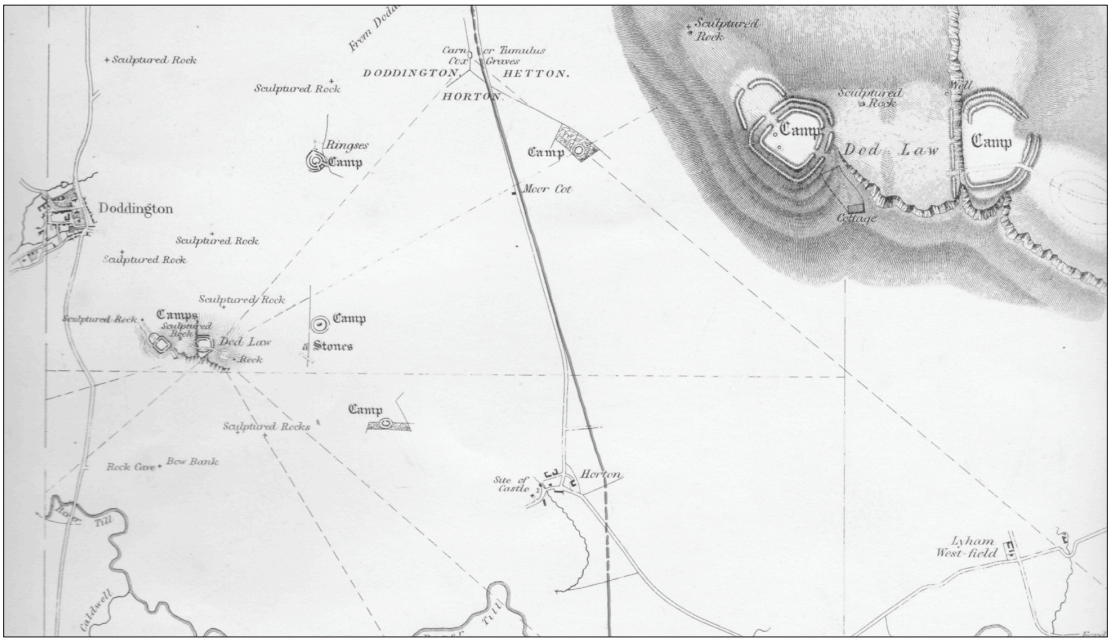


Fig. 1. (above). Horsley's map of 1732 showing the Devil's Causeway crossing Northumberland from top centre to bottom right of the image. Note that north is to the right.

Fig. 2. (below) An extract (from sheet 3) typical of MacLauchlan's mapping of the Devil's Causeway, this being near Horton, showing the extent of the detail he incorporated.



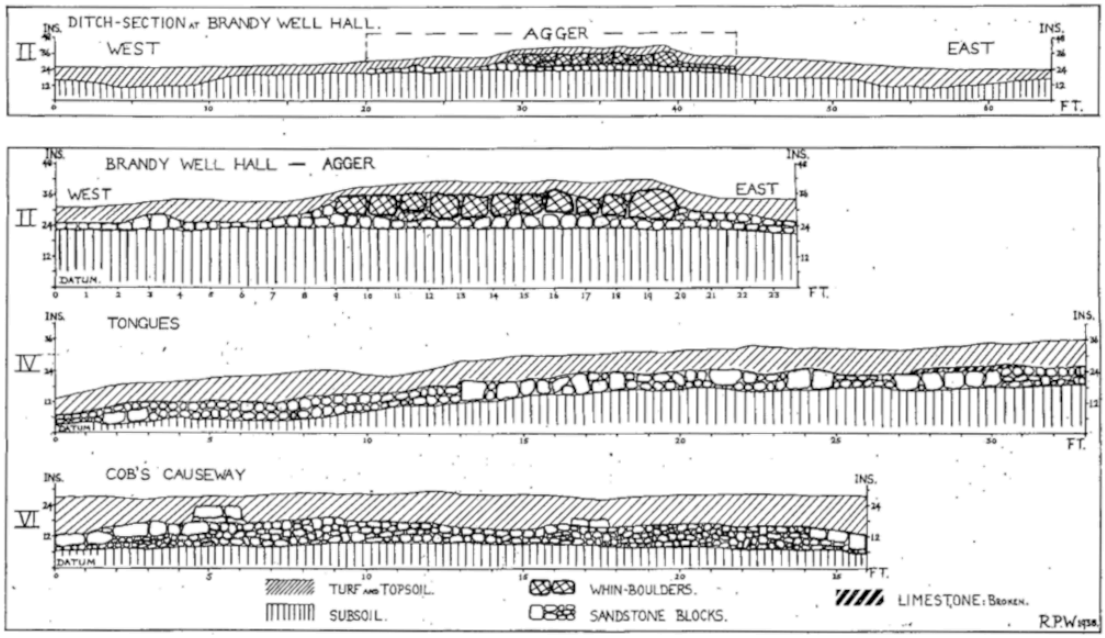


Fig.3. An extract of Wright's work on the Devil's Causeway. Image © SANT, reproduced from Archaeologia Aeliana, *Ser. 4, 15.*

surface. There were places where the road had a centre rib (Fig. 3). Margary summarised this work and allocated the road the number RR87 in his numbering series (1973, 478-80). He also allocated RR88 to the link road from High Rochester to Low Learchild.

Rowland described the road's course in an undervalued little book (Rowland 1984), with some further excavated sections being taken. While his recorded dimensions of a width of 24 feet (7.3 m) at a number of locations are consistent with Wright's measurements, his section drawings seem generic rather than specific and lack Wright's precision (Fig. 4).

More recently, John Poulter has analysed the surveying and layout of the route revealing some long-distance alignments for the north end and south-west segments (2014, 76-85; see also Poulter, this volume). After this, pre-development activities have located the road in a number of places where it was expected, and not located it in some other places. Through the Covid pandemic, the Association completed a lidar survey of the full route and found it presents itself very well for much of its course (Fig. 5).

All this indicates, in general, the precision of MacLauchlan's work. His survey is generally very close to Lidar/GPS accuracy, often only a few metres out across much of the route, although there are places (at Hartburn for example) where there is some doubt over his plotted course. There is no certainty on the start and end parts of the route around Beukley and Tweedmouth, with no excavated evidence or clear lidar indications.

In comparison with neighbouring Dere Street, there are very few known Roman installations along this road. The Association is investigating the route to determine if there are any as-yet undiscovered fort or fortlet sites. This is of significance, as a strong presence of the military would indicate the

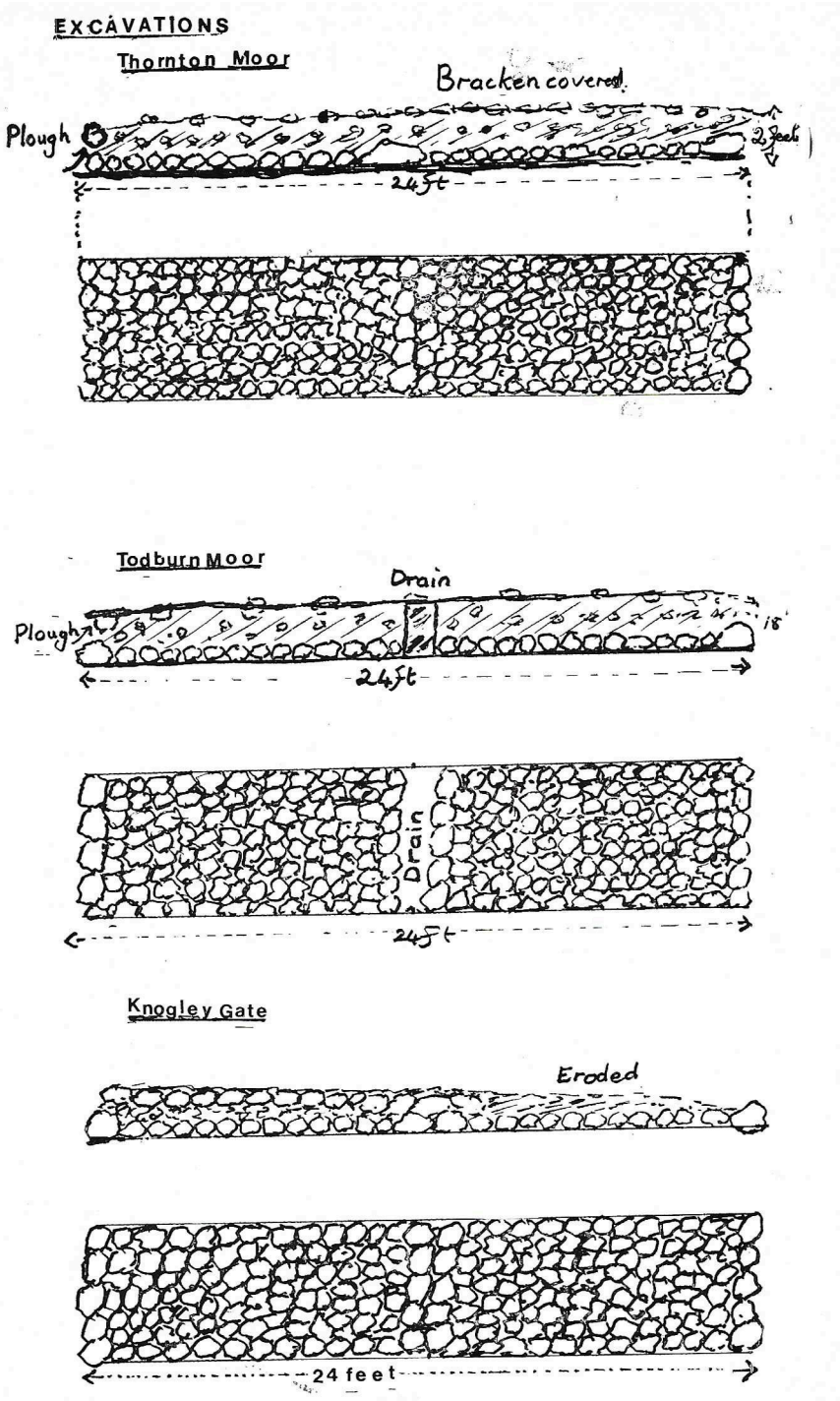


Fig. 4. Section drawings of the Devil's Causeway by Rowland.

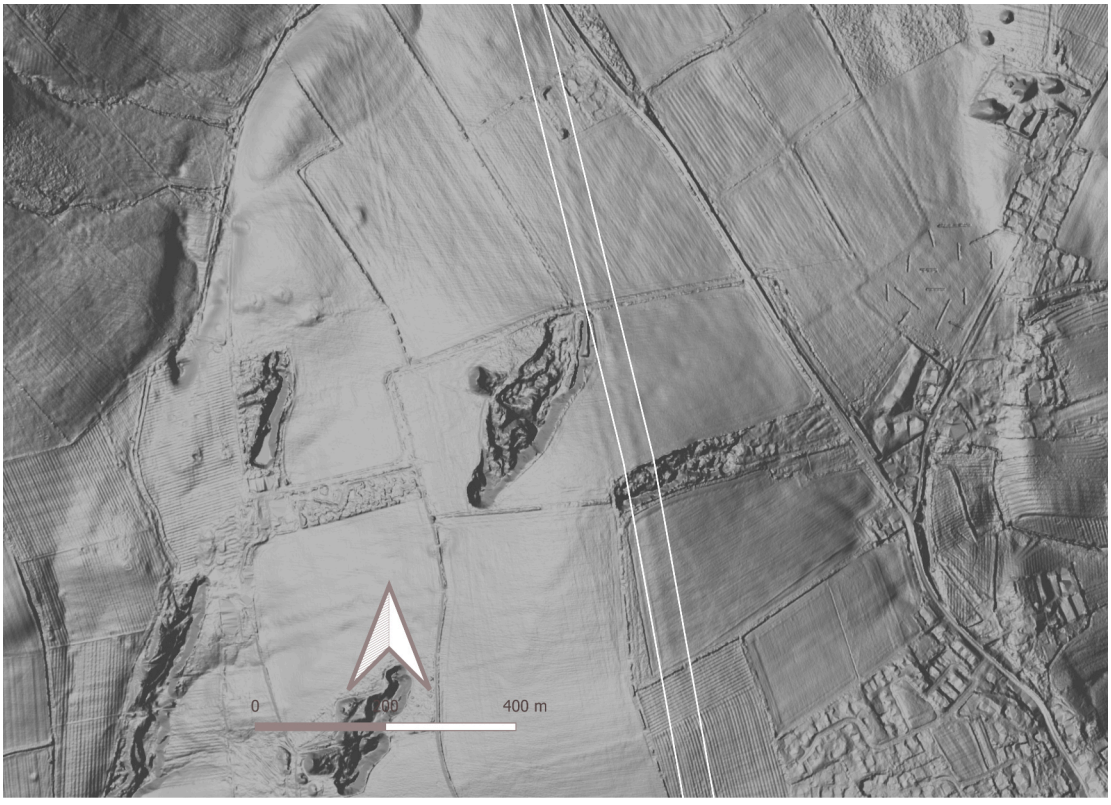


Fig. 5. Lidar image of the Devil's Causeway near Longframlington, visible in the bottom right corner of the image. The agger is very prominent between the parallel white lines. Image © DA, RRRA, 2022. Lidar data, © Crown Copyright 2019, Open Government Licence v3.0.

potential of a fortified route and possibly indicate the role of the road. Logically a lack of forts/fortlets would suggest no fortified route, perhaps indicating territory under the control of allied tribes. This also would impact on our understanding of Roman control of this area.

The one fort site that is known along the course of the Devil's Causeway is Low Learchild, which will be covered later in this paper with what was achieved there in 2022. A fortlet site is also known just off the Devil's Causeway at Longshaws (Fig. 6). This twin rampart site has an unusual layout and is some distance away from the known road (Welfare 2011). Other previously postulated military sites at Hartburn and at Tweedmouth have been shown not to be Roman military installations, but regularly shaped Romano-British sites (Jobey 1973, 11-54 and Archaeological Practice 2017, respectively). However, cropmarks have revealed possible temporary camp sites at West Marlish, Hartburn, Edlingham, and East Horton (Gates and Hewitt 2007, 11-30). Excavation in advance of quarrying at Wooperton, that has not yet been formally reported, has revealed some tantalising evidence of Roman occupation. Other speculation has proposed potential sites recorded in the HER at Chatton, Mitford Steads, Laverocklaw and Hall Hill, to name but a few (see end notes [1] for HER references). An extra site has been added from lidar at Todburn West just above the Coquet crossing (Fig. 7). Significantly these sites are close to river crossings, where the Romans preferred to locate their forts (Fig. 8).

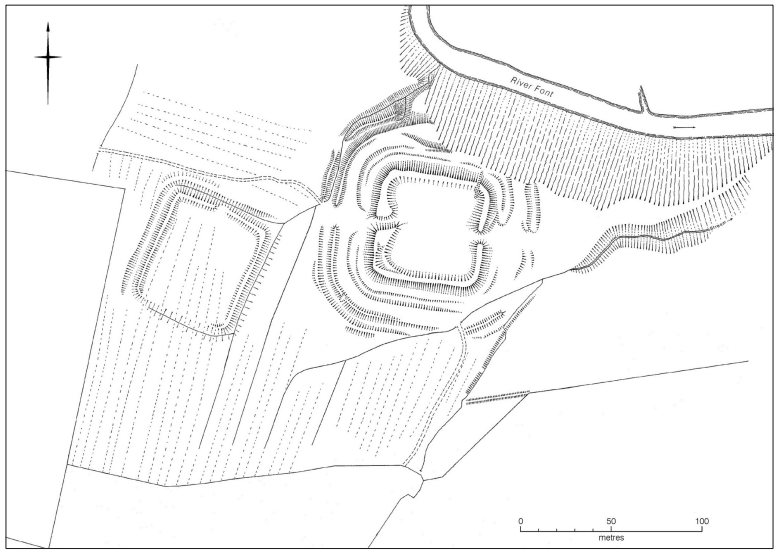


Fig.6. Earthwork representation of Longshaws Roman fortlet(s). Image © SANT, EH, reproduced from Archaeologia Aeliana, *Ser. 5, Vol. 40 where the caption states; The earthworks of the Roman Fortlet at Longshaws, with - immediately to the west - those of what is probably an associated detached annexe. (Inked archive drawing by Iain Salisbury; prepared for publication by Philip Sinton) © English Heritage.*

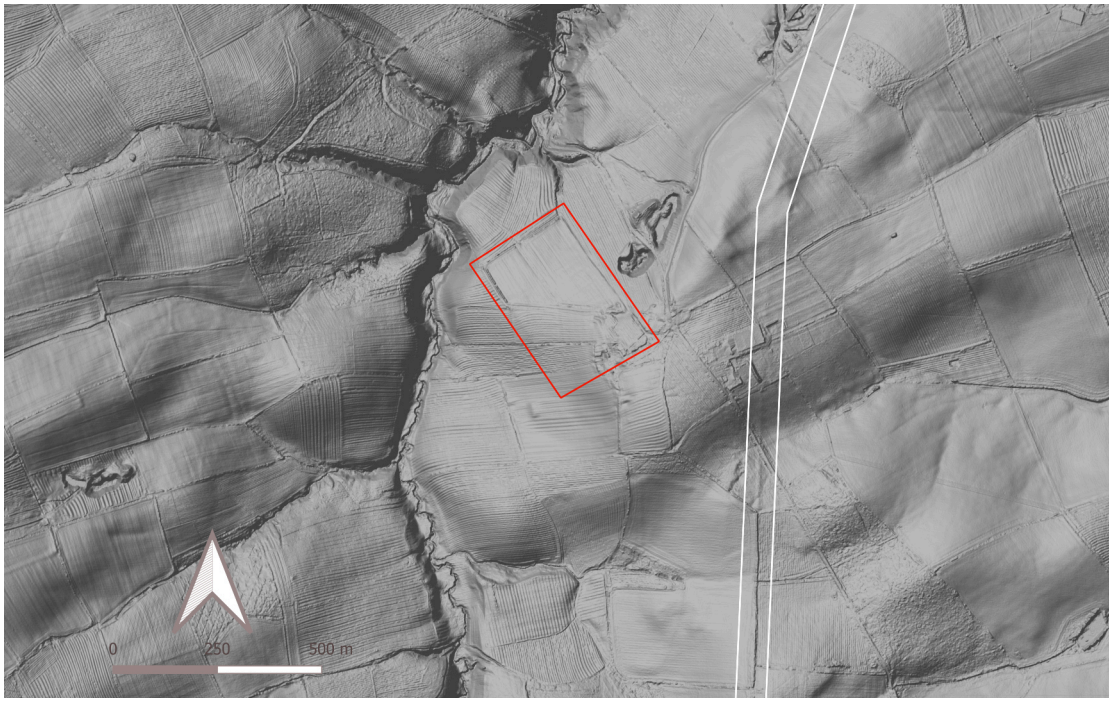


Fig.7. Todburn West, a suspected temporary camp site, outlined in red. Image © DA, RRRA, 2022. Lidar data, © Crown Copyright 2019, Open Government Licence v3.0.

In summary, the Roman origin of the Devil's Causeway (RR87) and its route, other than the north and south ends, is generally well established. The road, where it has been exposed, is a well-engineered structure, laid out on long alignments typical of other Roman roads. A Roman fort is known at Low Learchild adjacent to a road junction with RR88 from High Rochester. Another fortlet is just off the road at Longshaws. Further sites are postulated along the road's course but with little evidence as things stand; they may not be Roman.

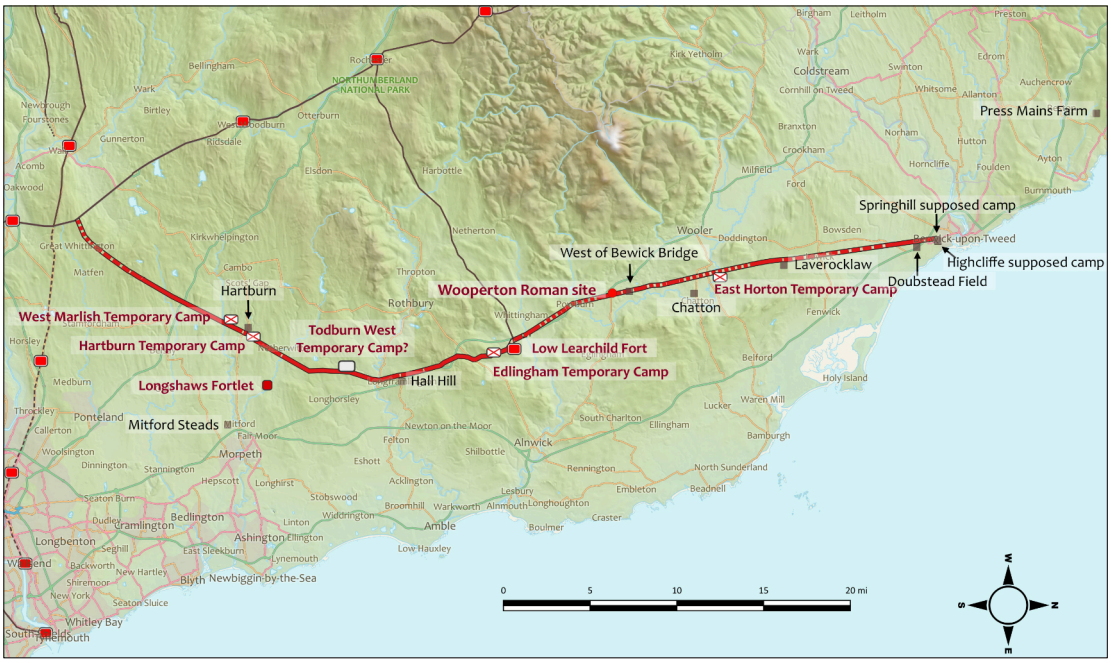


Fig. 8. All known and suspected Roman sites along the Devil's Causeway. Note that north is to the right. Image © Mike Haken, RRRA, 2022. Lidar data, © Crown Copyright 2019, Open Government Licence v3.0.

What don't we know?

As stated, the northern terminus of the road at the River Tweed is not anchored on a known Roman site. Similarly, the southern junction, thought to be with Dere Street north of Halton Chesters, is not underpinned by any evidence. There are a number of potential Roman sites that have not yet been explored and there has also been speculation as to whether there was a greater Roman road network in Northumberland than currently identified (Bishop 2014, 165-177 & Selkirk 2001, 264-9). Medieval armies moved on other routes that could suggest they may have had an earlier origin, perhaps Roman. Possible temporary camps in the Tweed valley identified by Gates and Hewitt (2007) suggest there may have been a route or road up the valley in the direction of Newstead. Also unclear is the dating of the known and postulated sites along the road which may indicate if their relative relationship is to the early 1st century advance north into Scotland, the control of a frontier during the subsequent withdrawal, or as an outpost system which formed part of the establishment of Hadrian's Wall (Hodgson 2017, 36).

What is the RRRA doing to close the gap?

The Association, inspired by Nick Hodgson's talk covering these issues at the 2019 Arbeia Conference, has initiated a project to gain a greater understanding of this road and its associated installations. All the previous data on the road has been gathered, a lidar survey completed confirming its course in most places and a start made in exploring the sites. Part of of this is to understand the road in the context of the wider Roman occupation. Thus, the route of RR88 from High Rochester to Low Learchild is being plotted and a review is determining if there was a network of other roads. A lidar survey to the north and west of Berwick-upon-Tweed has yet to identify any indications of Roman roads or other possible sites. Evidence for the postulated Roman fort at Press Mains Farm at Coldingham north of Berwick (Selkirk 2001, 25) (Fig. 9) and a Roman road nearby has been reviewed, but nothing compelling has been found.



Fig. 9. The postulated Roman fort site at Press Mains Farm, Berwickshire (Selkirk 2001, 25)

The first site worked on has been Low Learchild, including the junction of the Devil's Causeway with RR88 from High Rochester. After the discovery of the fort site by Dr St. Joseph in the 1940's (St. Joseph 1947) (Fig. 10), some trial trenching was made in 1945 by Sir Walter Aitchison, who unfortunately died before publishing his findings and his notes: all bar a brief message and sketch, are now lost. Recovered pottery, which has been located in the Great North Museum, Newcastle upon Tyne and reassessed, suggested 1st and 2nd century occupation. Sir Ian Richmond carried out further exploratory excavation in 1956 (Richmond 1957) that enabled him to estimate the minimal dimensions of the fort, which he believed was large, orientated north/south and had two phases, but sadly he also died before publishing a final report. Richmond's archived papers in Oxford do not contain any further information, although Charles Daniels did manage to locate one of Richmond's site plans while discussing the site with Nick Hodgson. More recently, three small parts of the site were surveyed in 1991, with what was early generation geophysics equipment, by an informal group of Newcastle University archaeology postgraduates (Anderson, Rushworth and Willis 1992, 34). This did no more than suggest the overall rampart dimensions exceeded those estimated by Richmond; any further information and their data is now believed lost.



Fig. 10. Aerial photograph, un-numbered, of the Low Learchild site looking south taken by St. Joseph assisted by the RAF. Reproduced from the papers of Sir Ian Richmond with thanks and © to the Sackler Collection of the Bodleian Library.

Assisted by the Holystone History and Archaeology Group, a gradiometer survey was undertaken in August 2022; this has clarified and built upon the sketchy information left by Aitchison and Richmond. Instead of a large north/south orientated fort of two phases that Richmond postulated, the survey suggests that the smaller double ditched fort was smaller than Richmond assessed, and was orientated east/west, but has what appears to be an annexe on the north side (Fig. 11). A single ditched larger enclosure surrounds this smaller fort. All the southern defences have been truncated by the railway but the slope of the site, particularly the west and south-west sides, does define the maximum extent in those directions.

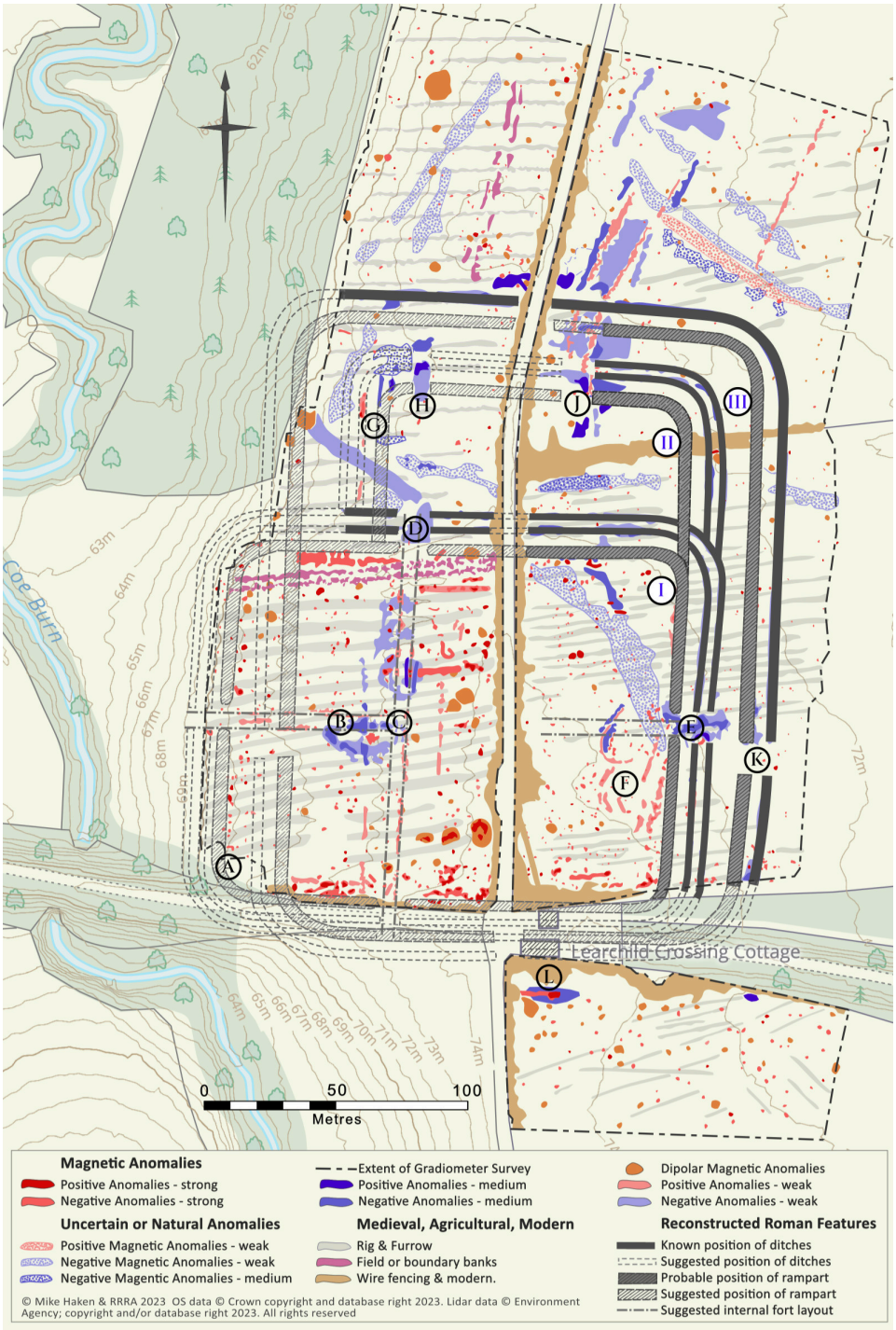


Fig. 11. Interpretation of the geophysics of the Low Learchild site (Haken and Armstrong 2023). For details, consult the full report as listed in the Bibliography.



Fig. 12. Lidar image of the junction of the Devil's Causeway and RR88. The courses of these roads as mapped by MacLauchlan and the OS are shown in red, but the suggested lines are indicated between the white dotted lines. The ditches and ramparts of the Low Learchild fort site are visible at the top right. © Mike Haken, RRRA, 2022. Lidar data, © Crown Copyright 2019, Open Government Licence v3.0.

As part of the survey, the course of the Devil's Causeway was sought near Low Learchild where the junction with RR88 was mapped by MacLauchlan but not definitively located. However, Wright's work at the Bridge of Aln, just to the north, suggested that MacLauchlan's alignment may have been slightly out (Wright 1940, 74). In addition, lidar suggests that RR88 as it approaches the junction is further to the north than mapped (Fig. 12). The conclusion is that the junction is some 135 m to the north of MacLauchlan's line, although the survey did have a very weak indication that may correspond with this. The full report of the Low Learchild work is available on-line from the Association site (Haken and Armstrong 2023).

Further surveying work has commenced and is in progress at the potential site at Todburn West. A bank standing approximately 1 m high, very suggestive of a rampart, with an external ditch still of some 1 m depth and 2 m width, makes up the northern side of the site and a substantial length of the west and east sides, with what appear to be curved corners set at 90 degrees. To explore this further, a gradiometer survey of the southern side, particularly the potential location of a south-west corner, was completed in 2023. Preliminary results suggest that the bank and ditch did continue further along the western side, but the weak indications petered out and did not indicate a clear curved corner where anticipated (Fig. 13). While the site is clearly archaeological in nature, further survey work is being planned to clarify this.



Fig.13. The Todburn West initial gradiometer survey as viewed from the south. © RRRA, 2023. Aerial Photograph background courtesy of GoogleEarth dated to July 2021, image © CNES / Airbus.

Concluding Remarks

From the excavated sections and lidar of the alignments, the Devil's Causeway has all the construction and laying-out characteristics of a Roman road. While its destination at a location at the mouth of the Tweed has not been confirmed, the alignment of the road through north Northumberland shows a very clear intent that the road was heading for or originating from that area. MacLauchlan's last confident observation was at Oxford, some 3 miles (4.8 km) south of the river mouth at the end of a direct alignment of over 11 miles (17.7 km) from Hetton Law. The last clear lidar evidence of the road is slightly further north at Scremerston (but see Blyth, this volume). Alternative routes have been suggested approaching the river to the west of Berwick-upon-Tweed, perhaps with crossings. However, there seems to be no evidence currently that these routes existed or that they were even Roman roads. The topography to the south of Berwick is generally not severe and there is no other obvious physical reason why a Roman surveyor would set this straight alignment on the Tweed – the focus on the river mouth is very clear. Going forward, the Association's intent, working in cooperation with local archaeological groups, is to continue investigating possible fort sites to clarify if the road was garrisoned or militarised in a similar manner to Dere Street.

Acknowledgements

The RRRA's Devil's Causeway Project was inspired by Dr. Nick Hodgson, whose advice and guidance with the interpretation of the Low Learchild fort site have been invaluable. The Low Learchild survey could not have taken place without the permission and enthusiasm of Mr. Jabin Cussins and Mr. Andrew Ellis, owners of the Low Learchild site and supposed road junction site respectively, along with Mr. Tony Drummond, who farms the land at Low Learchild. Access to the finds from Low Learchild was made possible by Andrew Parkin, Keeper of Archaeology at the Great North Museum, who took some considerable trouble to locate them in the Museum's external store, and the summary assessment of them was undertaken by Dr. Reb Ellis-Haken. We are extremely grateful to Charlotte Goodall, Classics Librarian for the Bodleian Library in the University of Oxford, for locating the relevant material in Sir Ian Richmond's archive, and for granting us limited permission to reproduce that material. Thanks are also due to Lindsay Allason-Jones and the Border Archaeological Society who initiated the 'Devil's Causeway Day' at Berwick that prompted the presentation that has been expanded into this paper. Finally, the author wishes to recognise the contribution to the RRRA made by the late Paul Bidwell. His support and encouragement of the Association and its work, and for volunteer and community archaeology more widely, should be recognised and applauded. He is greatly missed.

End Note

1 For details of these sites see the HER at; Aerial photograph NMR NU 0528/1-6 (TMG 16204/26-31) 14-AUG-1995 with RCHME/EH/HE Aerial Photographers comment, J. Walford 2003, S. Cutchley 2003. See Pastscape <https://www.pastscape.org.uk/hob.aspx?hob_id=1379894>. Field Observations by OS, E. Geary 1954, D. Smith 1971. See <http://www.keystothepast.info/article/10339/Site-Details?PRN=N11274>. Field Observations by OS, A.S. Philips 1955, N.K. Blood 1964, D. Smith 1968. See <http://www.keystothepast.info/article/10339/Site-Details?PRN=N3688>. Field Observations by OS, E. Geary 1954. See <http://www.keystothepast.info/article/10339/Site-Details?PRN=N4287>.

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The Planning of the Devil's Causeway in Northumberland

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Abstract

The author has been studying the planning of the Devil's Causeway Roman road in Northumberland since the close of 2011, and has published twice on the subject. This paper presents an evolution of the author's thinking, not only about the planning of this Roman road but also about the Long-distance Alignments which have been found to underpin the courses of some of the major Roman roads in Britain.

Introduction

The author's attention to the planning of the Devil's Causeway Roman road had been prompted by a question posed by the late Paul Bidwell towards the close of 2011. Paul had been convinced that there must have been a Roman road running from Newcastle to Berwick – a predecessor of today's A1 – and he wondered if the author had seen any indications of one. As a result, in 2012 the author undertook a study of the area between Newcastle and Berwick, which was conducted via maps and on the ground. A report was prepared for Paul personally, but not published, although Humphrey Welfare and Dr Nick Hodgson now also have copies of it.

Subsequently, in his BAR 598 monograph *Further Discoveries about the Planning of Roman roads in Britain* (Poulter 2014, 76-85) the author used the planning of the Devil's Causeway as one of his three detailed examples of how particular Roman roads appear to have been set out. This carried forward the author's thinking about the planning of the Devil's Causeway, and, in particular, discussed the possibility that the southern arm of the road had been aligned exactly upon the location of the Portgate, where Roman Dere Street crossed Hadrian's Wall.

This thinking was developed in the author's article about Long-distance Roman Alignments which was published in *Itinera* in 2022 (Poulter 2022, 27-32)[1]. The present paper brings the thinking up to date, offering not only the latest evolution of the author's reflections about the Devil's Causeway but also about the nature of Long-distance Roman Alignments and their implications for Roman mapping practices, about which little is known with any certainty.

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Throughout all this period of study, reliance has had to be placed almost entirely upon the line of the Roman road which is shown, commendably clearly, on modern Ordnance Survey maps. Virtually nothing of the Roman road can be seen on the ground nowadays, and in fact the Ordnance Survey's line has been largely derived from Henry MacLauchlan's survey of the Devil's Causeway in the 1860s. Recently Mike Haken of the Roman Roads Research Association has used lidar to detect some differences from the Ordnance Survey's line near the Roman fort at Low Learchild (Mike Haken pers. comm., see Haken and Armstrong 2023, 15-17), but these observations have not affected the author's interpretation of the overall planning of this Roman road.

Investigation

In Northumberland, apart from Dere Street, the Devil's Causeway is the only north-south Roman road which is known at present, and as can be seen in Figure 1 it bears no relationship to the course of the A1.

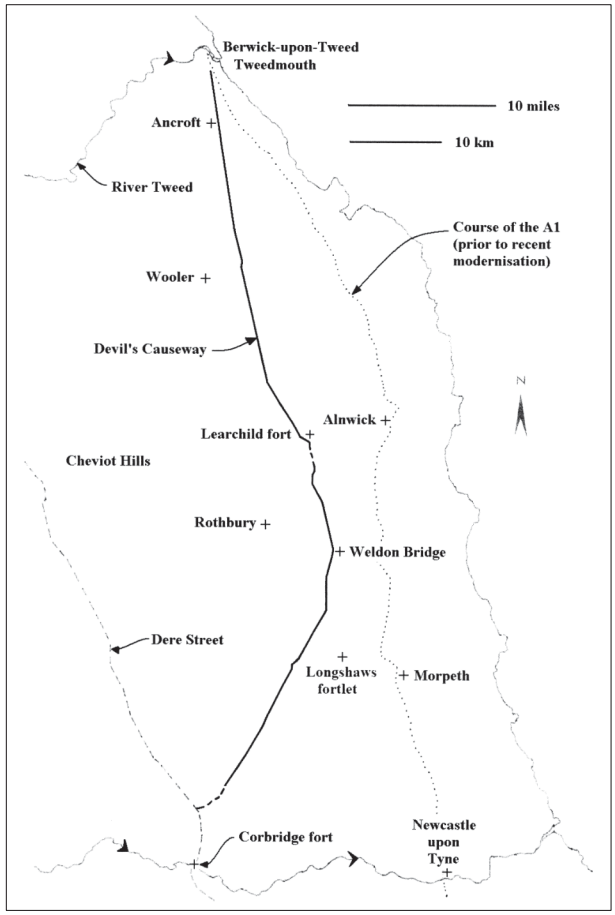


Figure 1. Course of the Devil's Causeway in comparison with that of the A1 (The Great North Road). Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

Instead, in its central part the Devil's Causeway possesses a closer relationship with the A697 road from Morpeth to Wooler and Coldstream. In fact the latter road runs upon the course of the Roman road in one place, as can be seen in Figure 2, although this is likely to be a fortuitous factor of the landscape rather than evidence that the road had survived from the Roman past.

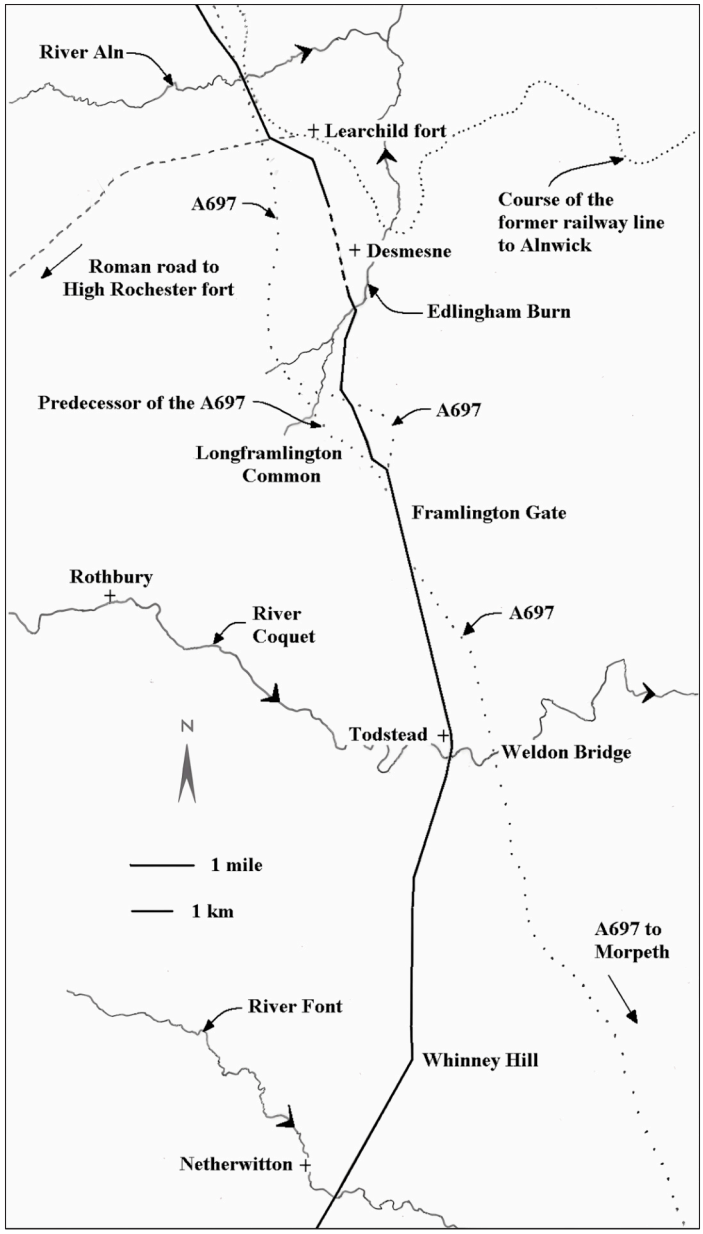


Figure 2. Course of part of the Devil's Causeway in relation to the A697 road from Morpeth to Wooler and Coldstream. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

Clearly, in terms of their courses, the Devil's Causeway was not a predecessor of the A1 (the Great North Road). Moreover, a study of the line of the A1 revealed no trace of Roman planning along its length, with a possible single exception close to Newcastle – to be described in the Discussion section below. Nevertheless, as the sole Roman road heading in the same general direction it seemed sensible to begin to try to answer Paul's question by examining the planning of the Devil's Causeway – if only to gauge what the Romans' intentions may have been in the area.

As readers of the author's previous publications on the planning of Roman roads (Poulter 2009; 2010; 2014 and 2022) will be aware, it appears that, for some of their roads, the Romans:

1. began by laying out a series of Long-distance Alignments, to set the general direction of the road
2. and then, probably when the time came to build the road – which might have been several years later, in some cases – they would set out deviations from the Long-distance Alignments, in order, for instance, to reach suitable river crossing-points, or to avoid unsuitable ground, or maybe to service forts or settlements which had been established away from the Alignments, etc. Typically, they would then return their deviations to the Long-distance Alignments afterwards.

Figure 3 illustrates the process.

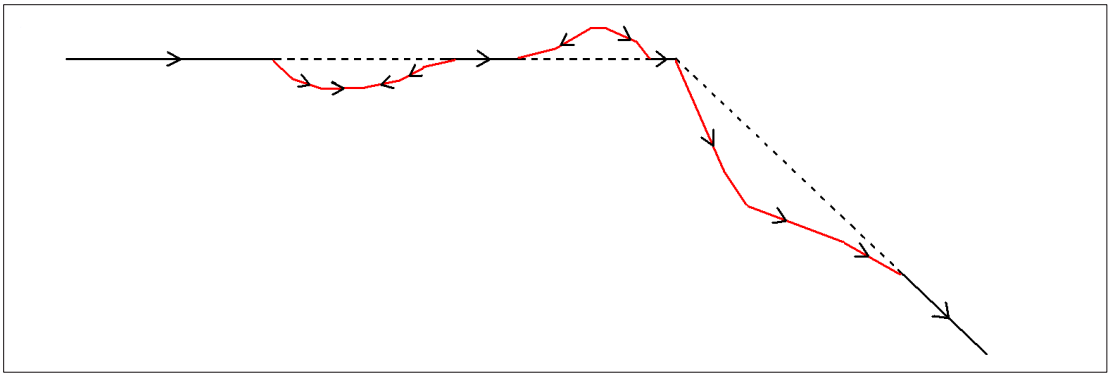


Figure 3. Planning of a Roman road by (a) laying out Long-distance Alignments, and then (b) setting out deviations from the alignments to reach local targets and then return to the Alignments. The arrows indicate the directions of planning, which tended to be in a continuous direction for the Long-distance Alignments but arbitrary for the deviations. © Copyright John Poulter.

Hence, the examination of the planning of the Devil's Causeway began with a search for Long-distance Alignments, and, to the author's surprise, he found not one but two quite separate ones. One of them set the course of the southern part of this Roman road, and the other directed the line of its northern end.

The southerly alignment ran from Whinney Hill to the Portgate area, which is where Roman Dere Street crosses Hadrian's Wall. See Figure 8. As usual, before committing to a conclusion that this had indeed been a Long-distance Alignment, the author sought to understand how the Romans could have set out such an alignment, because it is more than 27km (17 miles) in length and the two end points are not intervisible. It turned out to have been very easy. As can be seen in Figure 4, there is a single high point across the intervening landscape, near Kearsley farm, from which both end points are visible. Therefore, using lights at night it would have been simple to move a brazier near Kearsley farm until it stood in a single straight line between lights at each end[2].

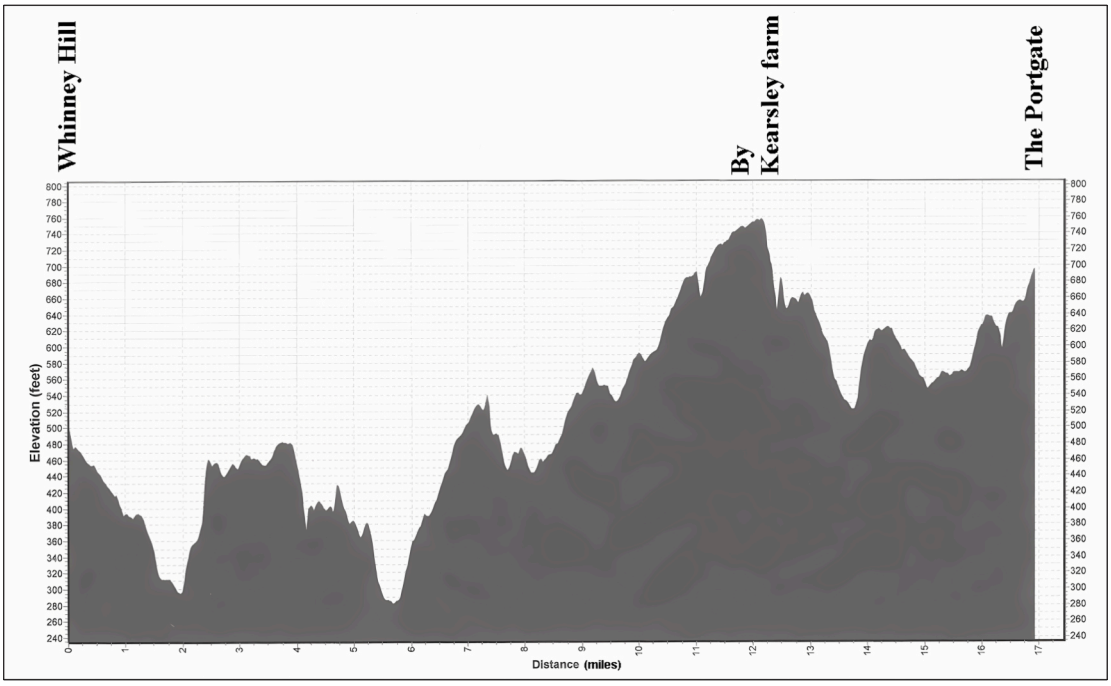


Figure 4. Profile of the landscape between Whinney Hill and the Portgate, showing a single high point by Kearsley farm from which both end points would have been visible. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

As Figures 5 and 8 show though, this Roman road, as built, strays slightly from the Long-distance Alignment via a series of kinks. This is unusual. Normally, when Roman roads follow an alignment they do so with notable rigidity. Since the starting and end points of each Long-distance Alignment are likely to be out of sight of the teams constructing any road between them for much of their time, it would appear that the only way for the Romans to have achieved such consistent conformity with an alignment would have been for them to have set up marker posts on each intermediate high point along the alignment so that the construction teams would have local targets at which to aim and so stay on course.

The impression given by the behaviour of the southern part of the Devil's Causeway is that such intermediate marker posts had not been set up in this case. Hence the team or teams building the road would have had to sight upon the end points of the Long-distance Alignment when weather conditions permitted. Over a distance of up to 19km (12 miles), and with any visibility likely to be handicapped by showers of rain, distant haze and mist, and wind blowing the smoke of a bonfire around, such sightings are likely to have been unreliable and in need of correction from time to time. This appears to have been what was happening when this part of the Devil's Causeway was being constructed.

This deduction seems to be supported by the locations of the slight changes of direction along the way. These are marked as points A to G in Figure 5, and Figure 6 shows that, apart from point G and possibly A, these are always facing towards the terminus of the Long-distance Alignment on Whinney

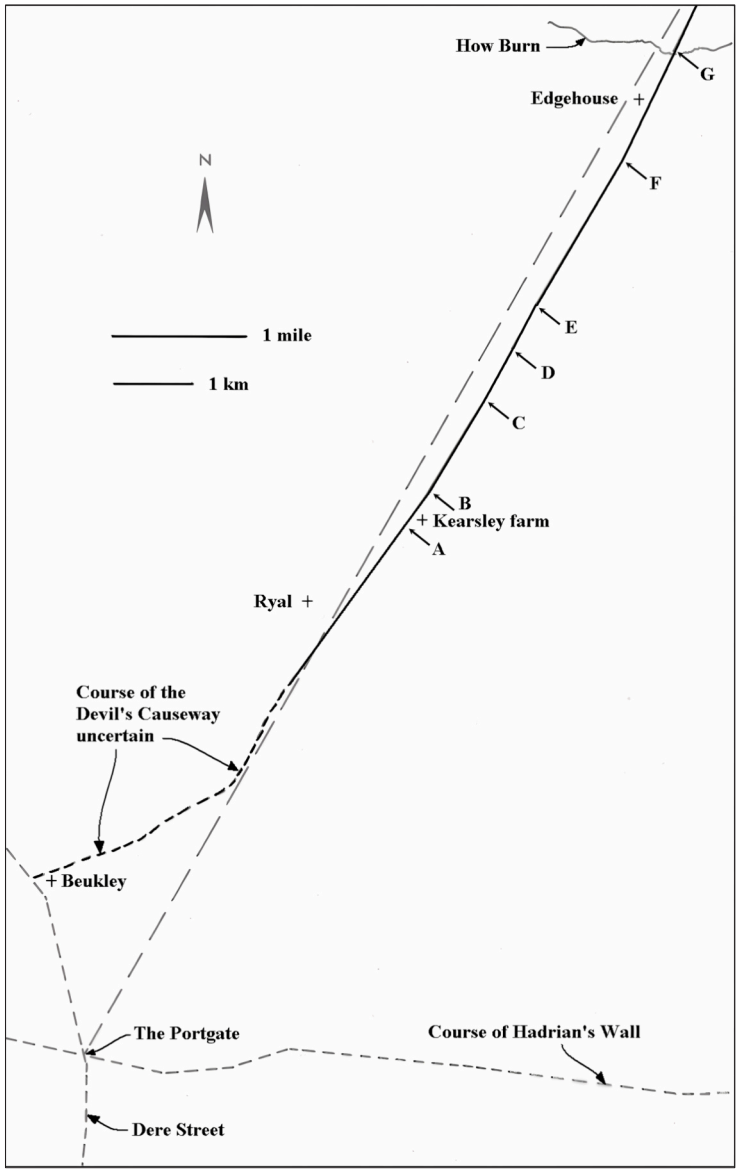


Figure 5. Course of the southern part of Devil's Causeway in relation to its Long-distance Alignment. The letters A to G mark each of the slight changes of direction of the road as built. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

Hill. It would appear from this that the leader of the road construction gang had stopped at these points to check and correct the course that his team was taking.

Overall, the impression gained is that the setting-out and the construction of this part of the Devil's Causeway had been something of a "rush job"; in other words, the tasks had been undertaken in a hurry. This impression is reinforced by the way in which the road, as built, breaks off from the Long-

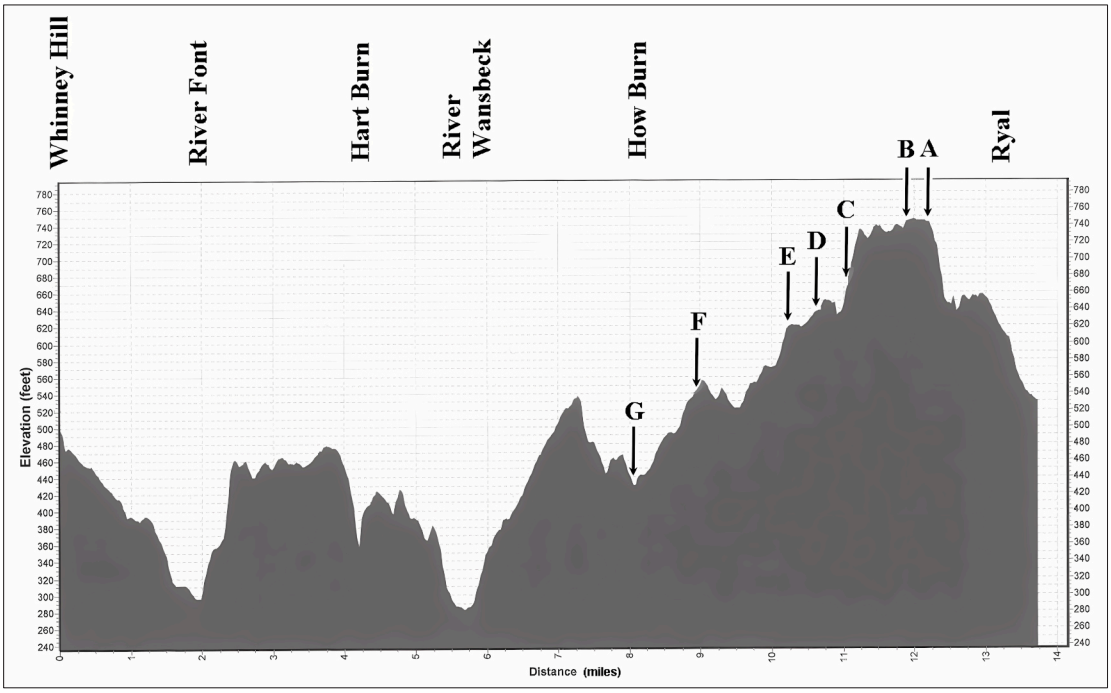


Figure 6. Profile of the landscape between Whinney Hill and near Kearsley farm showing the positions of each of the slight changes of direction which are indicated in Figure 5. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

distance Alignment near Ryal to run to meet Dere Street near Beukley. See Figure 5 again. This would have saved having to build some 6.5km (4 miles) of new road to the Portgate area – although it must be admitted that the saving would not have been that great because the detour to Beukley would have required some 3km to 5km (2 to 3 miles) of road construction anyway. Lindsay Allason-Jones (pers. comm.) wonders if the detour to Beukley might also have been intended to forestall possible congestion from the convergence of two routes upon the single gateway at the Portgate.

It remains to consider where the southern terminus of this southern Long-distance Alignment might have been located. Although such alignments might have been marked out on the ground in Roman days, no such makers remain today. Hence the exact course of a Long-distance Alignment has to be judged from where the road or roads which might have adopted it can be seen to have run. This can be especially difficult where, as in the case of the southern part of the Devil's Causeway, the Roman road persistently wanders off line. However, experience shows that, in such cases, the original alignment tends to be followed most closely near the termini of the alignment. This is only to be expected, since it is from these points that the Long-distance Alignment would have been set out.

Hence, as can be seen in Figure 7, the author simply took the first two miles of the Devil's Causeway from Whinney Hill to the River Font and extended the line south-westwards to see where it landed. To his astonishment, the line headed not only to the Portgate area but landed exactly upon the Portgate itself. Since, as already mentioned, the location of the Portgate is where Roman Dere Street crosses Hadrian's Wall, this means that this part of the Devil's Causeway could not have been laid out, let alone constructed, before at least the line of Hadrian's Wall had been marked out.

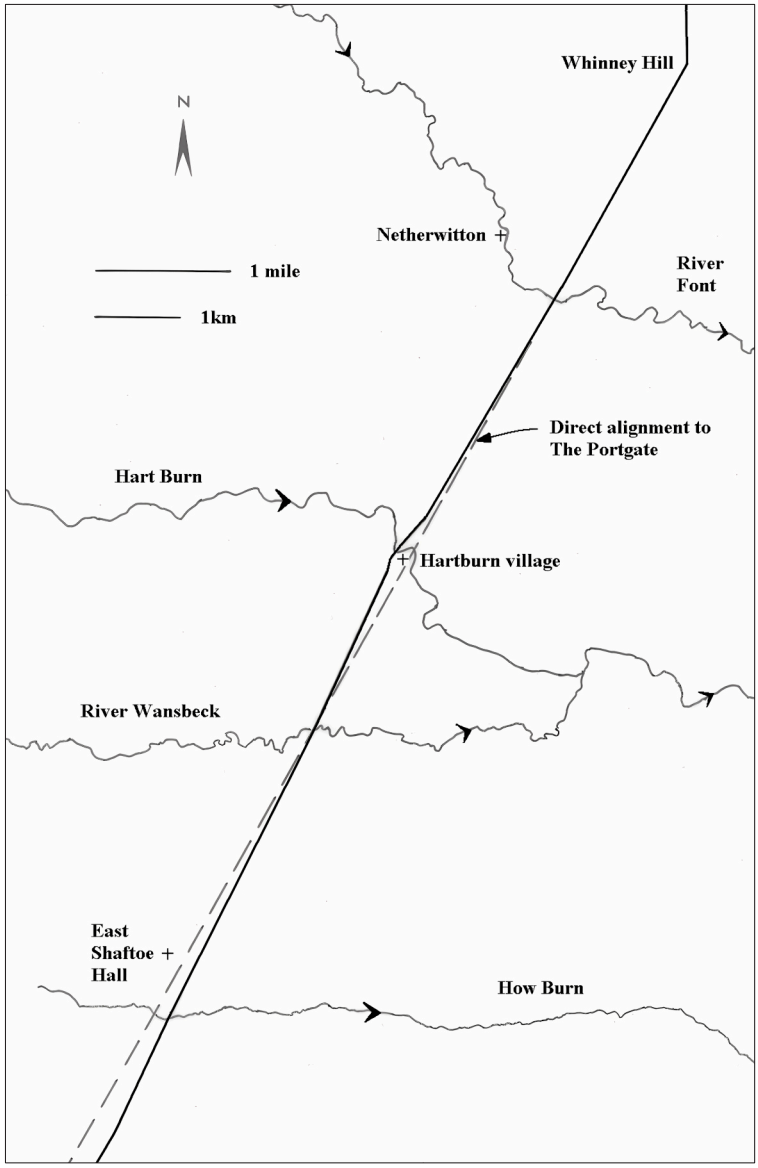


Figure 7. Course of the northern end of the southern part of the Devil's Causeway, showing the Long-distance Alignment derived from the first two miles of the road from Whinney Hill to the River Font. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

This challenged the then current interpretation of the life of the Devil's Causeway, based upon evidence from elsewhere along its course. This interpretation was that this Roman road had been in existence before Hadrian's Wall but had probably been abandoned not long after the Wall had been built. As a result, both Humphrey Welfare and Nick Hodgson (pers. comms.) suggested that the southern terminus of the southern Long-distance Alignment had been located where Dere Street,

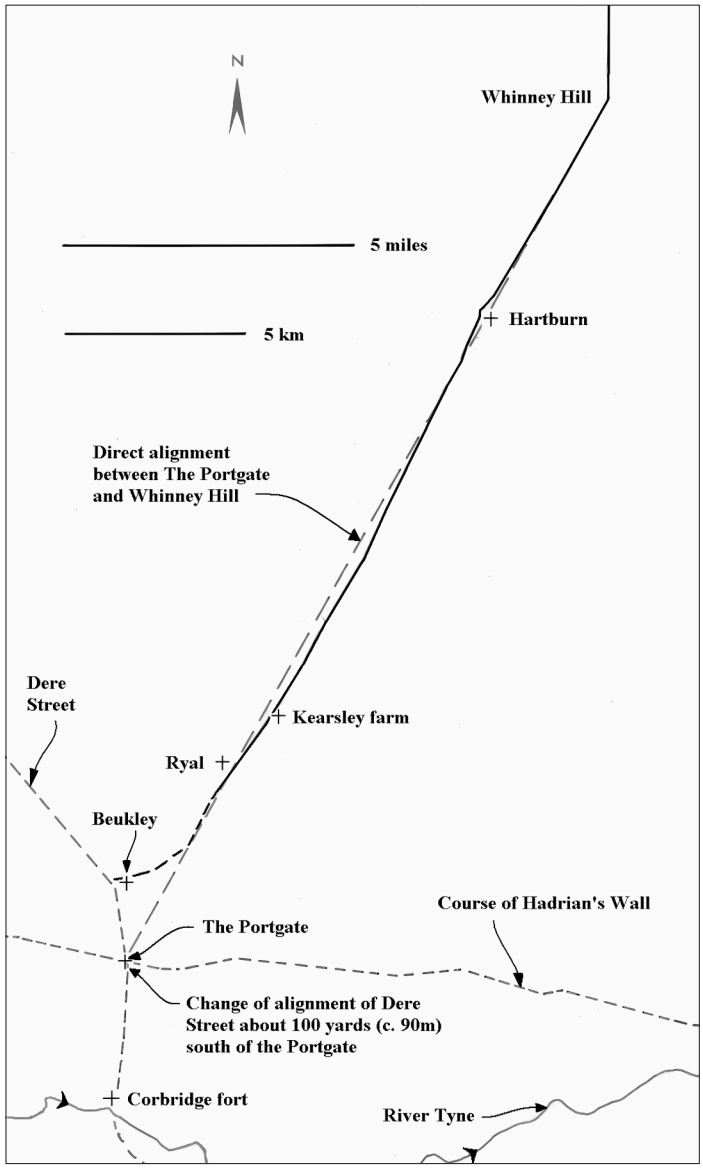


Figure 8. Course of the Devil's Causeway showing two possible options for the southern terminus of the Long-distance Alignment to be at either the Portgate or at a point on Dere Street about 90m (100 yards) south of the former. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

after breasting one last rise in the climb up from Corbridge, had then turned more north-northwestwards about 90m (100 yards) south of the Portgate.

This point can be seen on Figure 8, and this proposition is an entirely realistic one. If Hadrian's Wall had not been in existence, this point would have been a natural one from which to have set out a

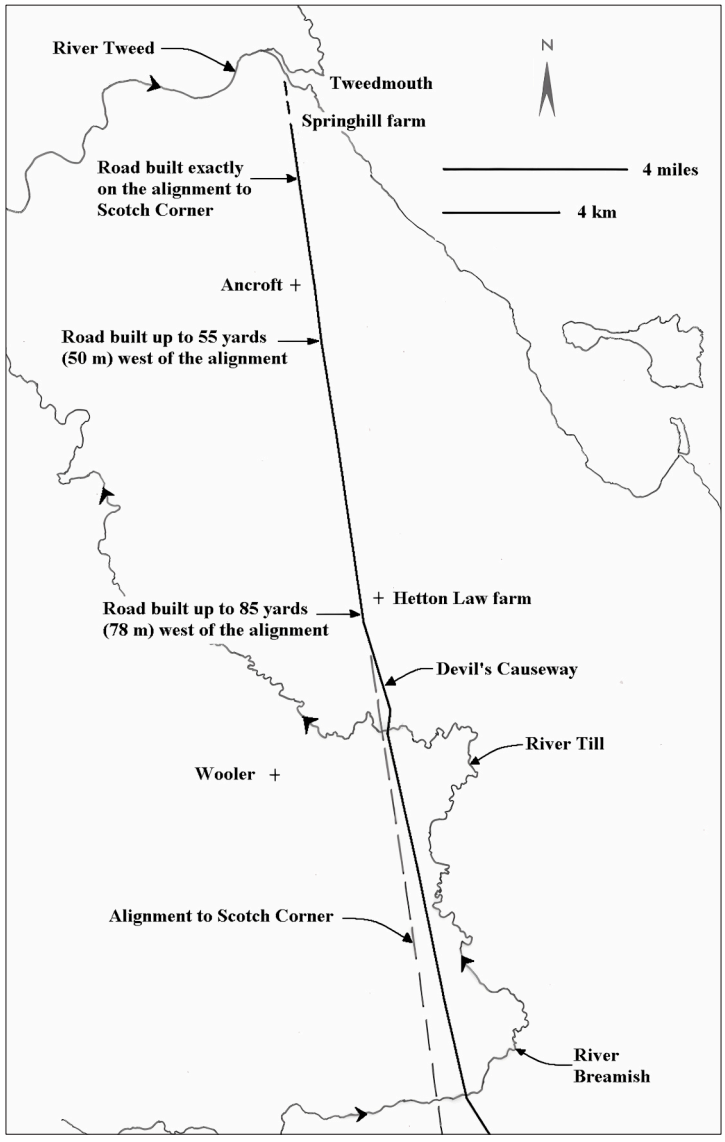


Figure 9. The course of the Devil's Causeway in relation to a direct alignment from Roman Scotch Corner. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

Long-distance Alignment towards or from Whinney Hill. Moreover the process for doing so would have been just the same as that already described above, exploiting a single high point near Kearsley farm.

Accordingly, although the author was unwilling to forego entirely what he had discovered by observation he was prepared (in Poulter 2022, 30-31) to credit Welfare's and Hodgson's proposal as being the more likely of the two. However, Mike Haken recently repeated the author's exercise of extending the alignment from Whinney Hill to the River Font and although his preferred alignment

ran marginally to the north of the author's he concluded that in his opinion an alignment to the Portgate was the more likely of the alternative possibilities (Mike Haken pers. comm.). In addition, the author had been coming to the conclusion that since the southern part of the Devil's Causeway appeared to have been a "rush job" it might have been the result of a late change of plan from the rest of the Devil's Causeway, possibly occurring during the very early phases of the planning of Hadrian's Wall. This would have made an alignment targeted upon the Portgate not only feasible but very plausible. The possible reasons for such a change of plan are addressed in the Discussion section.

If the southern part of the Devil's Causeway had been laced with surprises, the northern end proved to be even more remarkable. This was because the final 5.6km (3½) miles approaching Tweedmouth (as suggested by MacLauchlan and implied by subsequent Ordnance Survey maps[3]) were found to be exactly aligned upon the Roman site at Scotch Corner, more than 144km (90 miles) distant. Moreover, the final 16km (10 miles) of the Roman road, northwards from Hetton Law Farm, were found to have run increasingly close to the alignment too, as can be seen on Figure 9.

This gradual convergence of the Roman road upon an alignment, and the apparent exactness of the road upon the alignment for the final 5.6km, appear to rule out any chance that this could have been a coincidence. As a result it seems clear that the line from Scotch Corner had been a Long-distance Alignment and that the final part of the Devil's Causeway had been constructed to conform with it.

The immediate question which then arose was: how had the Romans managed to set out a Long-distance Alignment over such an immense distance? Unlike the southern Long-distance Alignment, there is no single intermediate high point between Scotch Corner and Tweedmouth, from which both end points would have been visible. In any case, even the use of lights at night would not have been practical over such a great distance. At this juncture, therefore, it is pertinent to turn once more to the nature of Long-distance Alignments.

When the Long-distance Alignments were first discovered – several of them underlying the course of Roman Dere Street – it was assumed that they had been created for the purpose of setting the general direction of the Romans' roads, and, at times, the locations of the military installations along them. Since then what has gradually emerged is that the Romans had been setting such alignments out for other purposes as well. Rob Entwistle, for instance, has proposed (Entwistle 2019, 48-75; 2022) that they were sometimes set out to delineate territory for administrative or political purposes. The author has also come to think that they were sometimes set out for surveying purposes (Poulter 2022, 44-47).

Surveying by setting out dead straight lines at set angles is a well-established surveying technique, used for gaining a rapid grasp of unfamiliar territory. General Roy (then just Mr Roy), for instance, employed this technique for his survey of the whole of Scotland (except the Western Isles) between 1747 and 1755 (Anderson and Fleet 2018, 118-124). What is also becoming apparent is that these long-distance Roman administrative and survey lines seem to have been set out on constant bearings, unlike the line-of-sight alignments which appear to have been used simply for planning road lines. (The Long-distance Alignment from Whinney Hill to the Portgate area is an example of a line-of-sight alignment.) The difference is that lines at constant bearings take gentle curves across the spherical surface of the Earth, as shown in Figure 10, below. This is because the lines of longitude taper towards the Earth's poles. In contrast, alignments set out by line-of-sight run in straight lines across the surface, as is also shown in Figure 10.

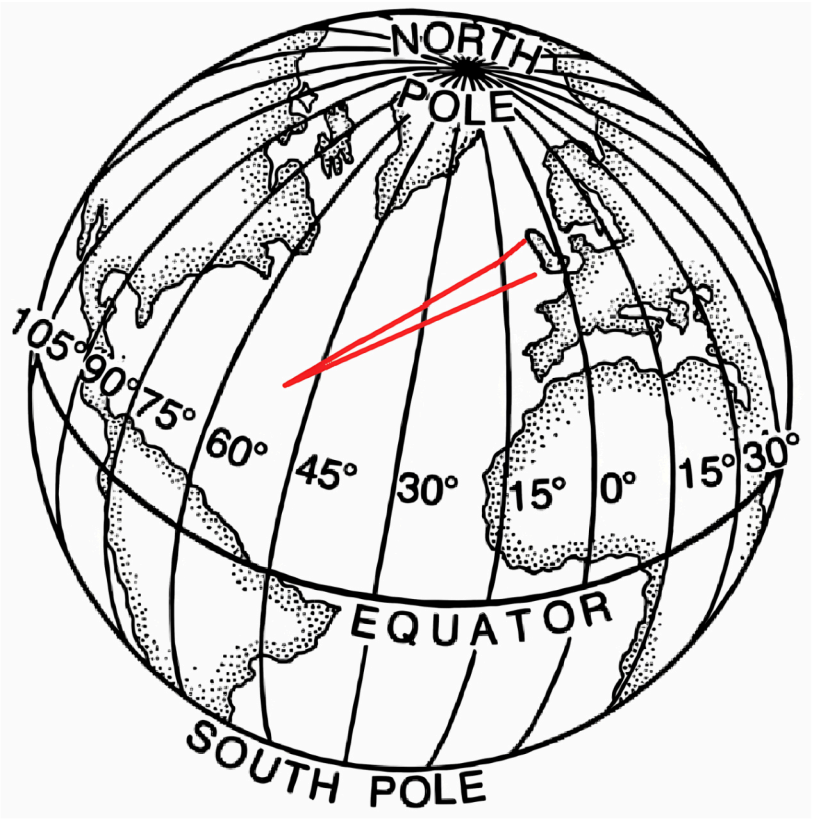


Figure 10. Comparison of a constant bearing line (the upper red one) curving across the surface of the Earth whereas a line set out by line-of-sight (the lower red one) would run straight across the surface of the planet. © Copyright John Poulter.

On the other hand, once the surface of the Earth is projected flat, as on a map, the lines at constant bearings would appear to run dead straight across the map. This is because, on a typical map – for instance, an Ordnance Survey map – all the lines of longitude are shown running in parallel, north-south. Therefore a line running across them at a constant bearing would strike them all at the same angle. In contrast, over significant distances, lines set out by line-of-sight would show a slight downward curvature over the same kind of map (unless the lines happened to be running due north-south or due east-west). Because of the latitude of the British Isles, it is unlikely that the two kinds of alignments would show any significant difference on a map over distances of up to, say, 40km (25 miles), but over any distances greater than that the difference would be noticeable.

Figure 11 shows that the alignment from Tweedmouth to Scotch Corner is dead straight on the map, whereas if it had been set out by line-of-sight it would undoubtedly have shown some curvature over such a distance. This suggests that it had been a survey line, set out on a constant bearing.

As a by-product, this may tell us something about Roman mapping. It is generally assumed that the Roman administrators and planners must have had and used maps, but little is known about their

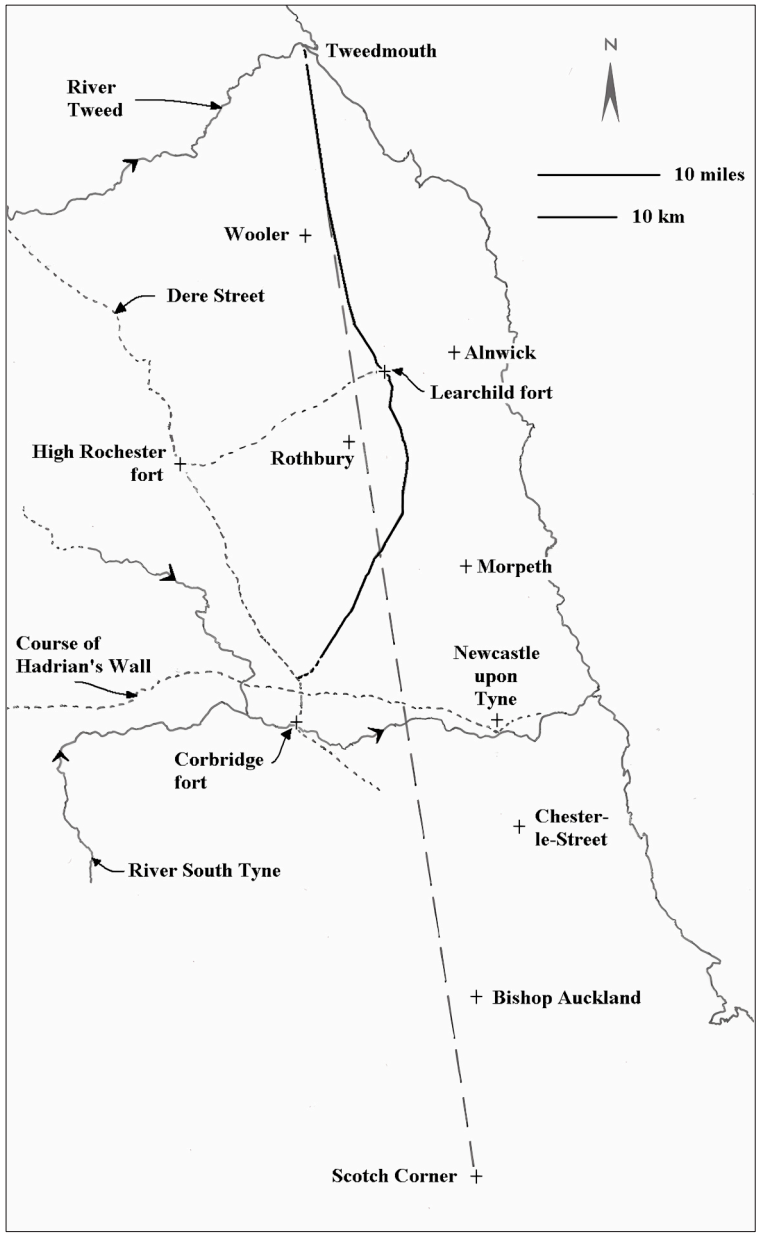


Figure 11. The northern part of the Devil's Causeway falling in with the Long-distance Alignment from Scotch Corner. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

mapping practices (Poulter 2014, 37-38). If their survey lines were being set out on constant bearings, it implies that the Romans would have been using projections similar to those of our modern maps, in which the lines of longitude would have been straightened out to run in parallel and across which their survey lines would therefore have appeared to run dead straight.

To provide reliable frames of reference, such survey lines would need to have been kept as straight on the map as possible. On the planners' table-tops, they would then have been used to record both topographic and demographic information, as witnessed by the surveyors both on and from the survey lines. Then, since the survey lines would have served as the only common frames of reference, they would have been used to direct actions to be taken by the troops on the ground. This could explain why such survey lines were subsequently often employed to set the directions of Roman roads and the locations of fortifications along them.

For setting the angles between such survey lines, the Roman planners and surveyors (unlike General Roy) appear not to have used degrees (Lewis 2001, 226-228). Instead they seem to have resorted to using simple geometrical angles such as right angles, 45˚, and the angles of 3:4:5 and 8:15:17 Pythagorean triangles (Entwistle 2019). These angles could all be easily constructed on table tops using set squares and then reproduced by rods or possibly chains on the ground.

The Roman planners would sometimes seem to delight in playing sophisticated tricks with such tools, though. At Whittlestone Head, for instance, between Manchester and Ribchester, they seem to have accomplished a change of angle of only 8.3˚ in the alignments of their Western Main Road. They

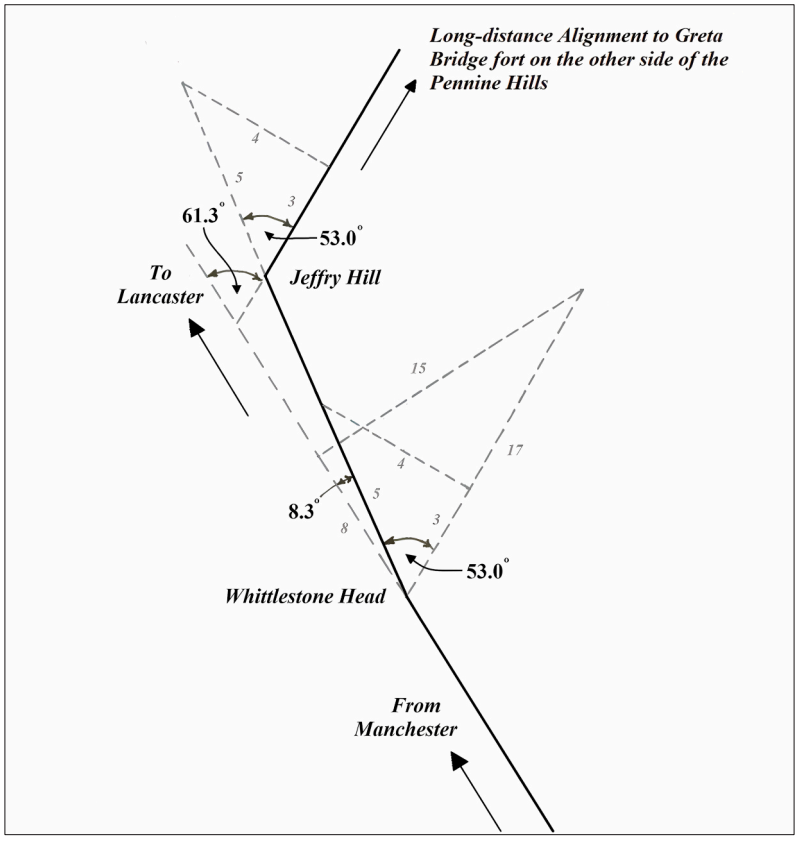


Figure 12. Use of a geometrical subtraction to achieve a change of angle of 8.3˚ in the alignment of the Romans' Western Main Road near Whittlestone Head. © Copyright John Poulter.

achieved this by means of the geometrical subtraction of one Pythagorean angle (53.0˚) from another (61.3˚), as shown in Figure 12. It may, therefore, be no coincidence that the bearing of the alignment from Scotch Corner to Tweedmouth is 8.5˚ west of true north.

Between its northern and southern ends the course of the Devil's Causeway appears not to have been underpinned by any Long-distance Alignment. Instead, the road proceeds in a series of short straight stretches which were clearly designed to service the Roman fort at Low Learchild and to cross the intervening landscape and the Rivers Breamish, Aln, and Coquet at convenient locations. Figures 2 and 11 show that the fort at Low Learchild was also served by a Roman road running from the Roman fort at High Rochester on Dere Street. As previously mentioned, Mike Haken has recently examined the area in and around the fort at Low Learchild using lidar and shown that the course of the Devil's Causeway as published on Ordnance Survey maps is not quite correct (Mike Haken pers. comm.). He was also able to show, from their intersection, that the road from High Rochester appeared to have been constructed earlier than the Devil's Causeway. This should not seem surprising. If Low Learchild had already been served by the Devil's Causeway there would have been little incentive to have built a road to it from High Rochester.

As can be seen in Figure 1, the course of the Devil's Causeway in its central section does seem to have been generally heading southward towards the Newcastle area – that is, until it reaches Weldon Bridge over the River Coquet. There it rather abruptly branches south-westwards and climbs awkwardly across sloping ground, seemingly so as to reach Whinney Hill, from which the southern Long-distance Alignment appears to have been set out towards the Portgate. The fact that a line of electricity pylons changes direction at the same place helps to illustrate what a fine vantage point Whinney Hill does offer.

Discussion

It was the rather sudden change of direction at Weldon Bridge, coupled with the impression that the Devil's Causeway from Whinney Hill to the Portgate had been planned and constructed in something of a hurry, which prompted the thought that the southern part of this Roman road might have been the result of a change of plan. In other words, that the road had originally been planned to run to the Newcastle area, as Paul Bidwell felt would have been necessary, but that it had then been switched to run to the Portgate instead. The possibility is indicated on Figure 13, below.

Accordingly, a search was made, on the ground and via maps and aerial photographs, for any signs of a Roman road between Weldon Bridge and the Newcastle area. However, only one slight and rather indirect indication was detected, and this is shown on Figure 14. Figure 13 indicates that between Newcastle and Morpeth the A1 (the former Great North Road) adopts a course which is not dissimilar to that of a direct line from Weldon Bridge to Newcastle. Figure 14 shows that, approaching Gosforth, to the north of Newcastle, the (former) course of the A1 is exactly aligned upon the northern bridgehead of Newcastle's medieval bridge over the Tyne. It is believed that this had also been the location of the Roman bridge over the Tyne, and if so this would have been a typical example of Roman planning. In contrast it is unlikely to have held any great relevance in medieval times. Thus it might appear that construction could have been started on the Devil's Causeway from the Newcastle area to Weldon Bridge, only to have been aborted, rather hastily, in order to adopt a new line from Weldon Bridge to the Portgate.

Two reasons can be suggested for such a change of plan:

(a) a decision had been made that, once Hadrian's Wall had been completed, the Portgate should be the only main/civilian gateway through the eastern side of the country[4]

(b) a decision had been made that, although Hadrian's Wall would terminate on the Tyne at Newcastle (or possibly Wallsend), the main troop concentration supporting the eastern flank of the Wall would remain at Corbridge, at least initially; therefore communication would have been required with Corbridge rather than Newcastle.

Although it would have involved no hasty change of plan, it has been suggested (Hodgson 2017, 36) that the Devil's Causeway might have been planned as an eastward continuation of the Stanegate Roman road from Carlisle to Corbridge, so extending the concept of a 'Stanegate Frontier' to the North Sea coast. As it happens, an independent researcher, Steve Hedworth, recently claims to have

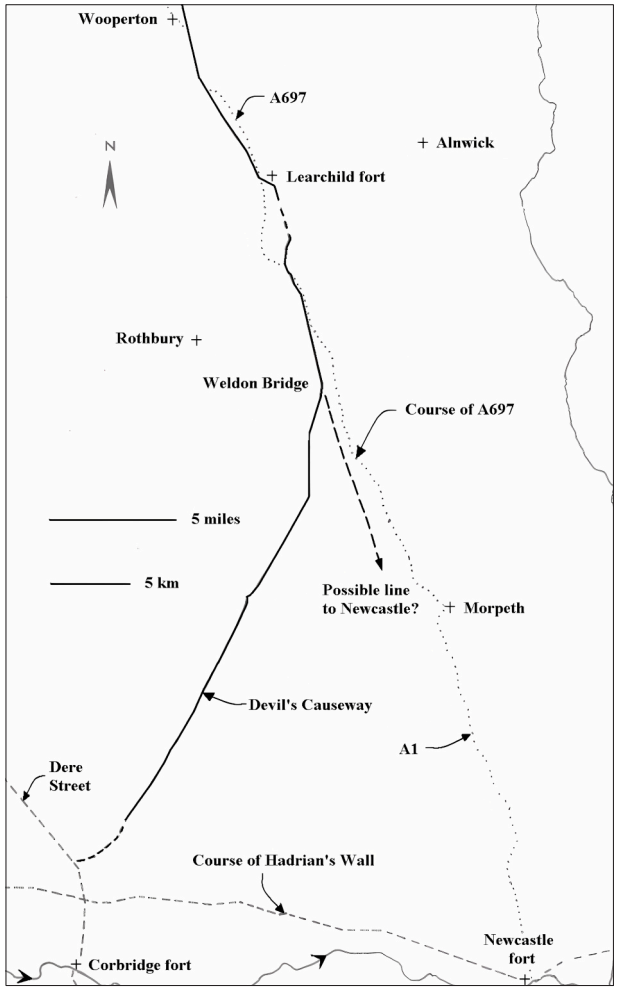


Figure 13. The possibility of a direct line from Weldon bridge to Newcastle. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

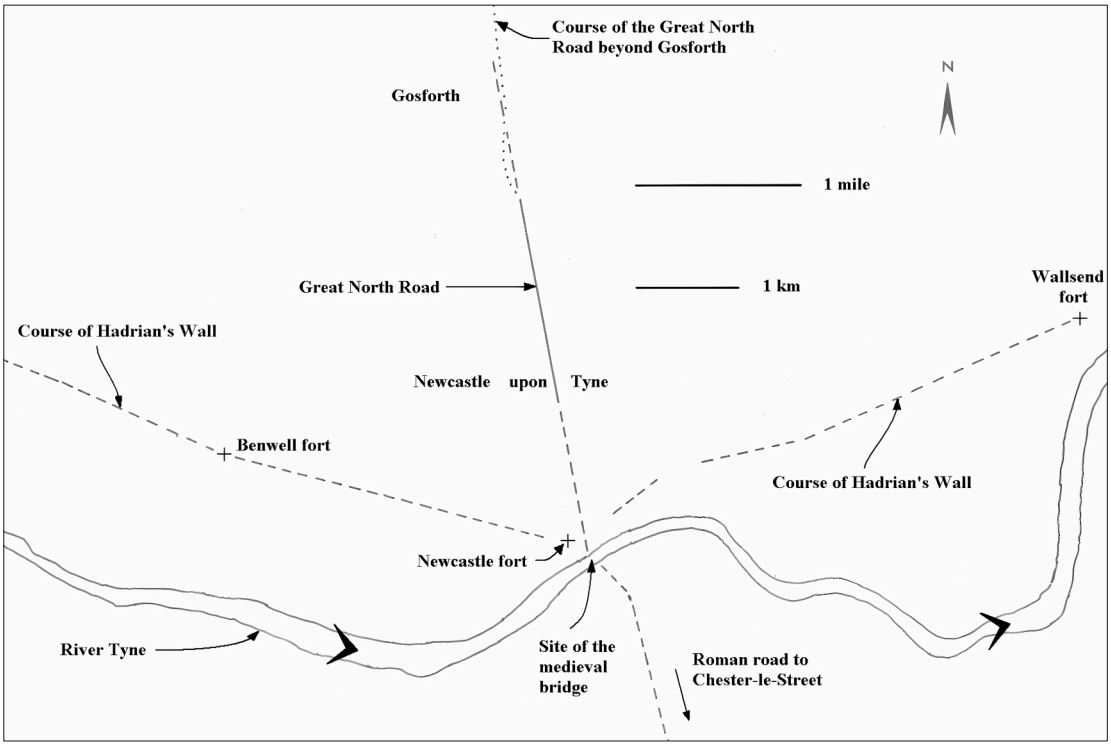


Figure 14. Alignment of the former course of the Great North Road towards Gosforth with the northern bridgehead of the medieval bridge and possible location of the Roman bridge over the River Tyne. Reproduced with agreement of BAR Publishing, www.barpublishing.com. © Copyright John Poulter.

detected traces of a continuation of the Devil's Causeway to the west of where it meets Dere Street at Beukley (Hedworth pers. comm.). He proposes that it would then have continued in the direction of the village of Wall and then crossed the River North Tyne to link up with a branch of the Stanegate which has been found to have run around the northern flank of Warden Hill. Figure 15 shows this projected course.

This is an interesting suggestion which would fit in well with the notion of a Stanegate extended eastwards. Unfortunately, although the author has not examined this possibility on the ground he has not found anything to support such a line on either lidar or Google Earth. A suggestion made by a local landowner, Mr Pennie, at the Berwick meeting was that this might have been part of a prehistoric routeway across the area, of which the planners of both the Stanegate and the Devil's Causeway might have made use, in certain places and at different times. It is therefore possible that what had been traces of this routeway are what Steve Hedworth had picked up.

On balance, though, the indication that the southern part of the Devil's Causeway had been the result of a somewhat hasty change of plan does seem more persuasive. Moreover, the likelihood that its Long-distance Alignment had been aimed at the Portgate, means that, at the earliest, the change of plan could not have taken place before the planning of Hadrian's Wall had begun. Hence, although certainly worthy of further investigation, the foregoing possibility is really only included here for the sake of completeness.

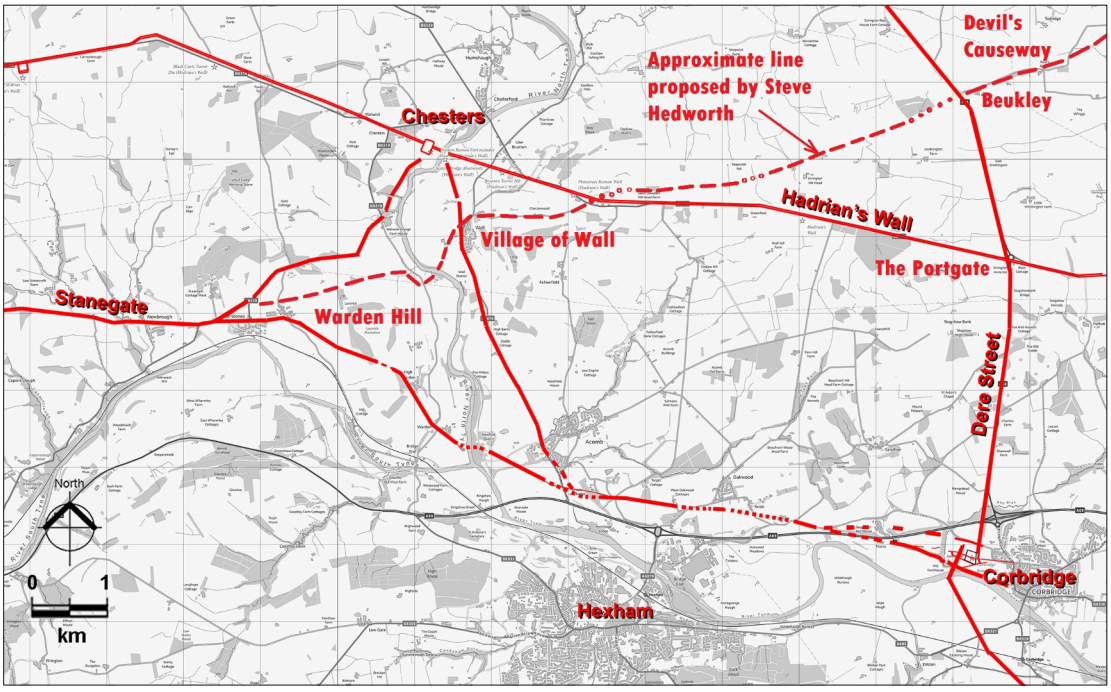


Figure 15. Plot of a possible continuation of the Devil's Causeway running westwards from Beukley to link up with a branch of the Stanegate running around the northern flank of Warden Hill. The dots show where Steve Hedworth reports observing traces; the dashes are where the course is conjectural. The solid lines show where lidar traces are clear. Base map © copyright Ordnance Survey Open access data; lidar lines © copyright David Ratledge; plot of Steve Hedworth's line © copyright John Poulter.

There is at least one further curiosity about the Devil's Causeway, though, and that is the absence of fortifications along it – on the basis of current knowledge, at least. The author has tended to assume that once the Romans had planned a line of fortifications, priority would have been given to erecting the fortifications first, with perhaps just a lightly-built track running between them to support communications. Only afterwards, it was assumed, when time and resources permitted would efforts be devoted to constructing a properly-engineered road between the fortified points. Instead, along the Devil's Causeway, although there are known to have been camps beside it – probably for the construction of the road – the only firm evidence for a fort or fortlet at present is the site at Low Learchild, and this seems to have been in existence before the road was built. It is understood that Roman artefacts have been found at Wooperton (see Figure 13), but that there are no signs of fortification there.

Perhaps the most striking omission is the absence of any Roman structure at Tweedmouth. Up to now the assumption has been that the Devil's Causeway had been built to service a Roman station at Tweedmouth, whereas it now appears that the Roman road, as it approaches the Tweed, had simply been set out to follow the end of a Roman survey line. Hence it is perhaps not surprising that nothing substantially Roman has been found beside the Tweed as yet. It is possible that the Romans intended to construct some kind of base at Tweedmouth, otherwise there would have been no point in building the road to there. However, it looks as if the road got there first and that whatever plans the Romans had had were then abandoned before construction beside the Tweed had started (see Allason-Jones and Osler, this volume).

It is therefore quite possible that the Roman authorities had had plans for the creation of several fortifications along the line of the Devil's Causeway, but that an early abandonment of the road meant that these plans remained unfulfilled. However, there is a need to be cautious about an absence of evidence. As Nick Hodgson pointed out at the Berwick meeting, formerly unknown Roman forts and fortlets continue to be discovered in Britain quite frequently, and so the unfortified nature of the Devil's Causeway may eventually turn out to be an illusion.

Apart from the military installations along Dere Street, there is one other Roman fortification which is known in Northumberland north of Hadrian's Wall, and that is a seemingly isolated fortlet and annex at Longshaws (NZ 134884), overlooking the River Font between Morpeth and Whinney Hill. See Figure 1. Although there is no firm dating evidence for the fortlet, it is considered likely to have been established in the Flavian period (Welfare 2011, 128) and thus to be earlier in date than the Devil's Causeway.

Nevertheless, the fortlet stands at the head of a stretch of the Font which happens to lie exactly on a direct line from Whinney Hill to Newcastle. Therefore, just to be sure that the fortlet had not been positioned to oversee traffic from and to Newcastle, David Ratledge was invited to search, via the latest lidar data, for any sign of a road in the area. The result was negative, not just beside the Font but also on any other line into Newcastle (David Ratledge, pers. comm.).

This, therefore, seems to conclude the attempt to answer the question which Paul Bidwell had posed in 2011. In brief, there appears likely to have been a plan to build a Roman road from Newcastle to the Tweed, but that before construction had got under way (if at all) at the Newcastle end, the plan had been altered to redirect the southern part of the road to run from Corbridge **i**nstead.

Acknowledgements

The author is particularly grateful to Lindsay Allason-Jones for several comments and suggestions made on earlier drafts of this paper. He is also grateful for several valuable inputs from Mike Haken, David Ratledge and Steve Hedworth both before and during the course of this paper's composition.

Endnotes

1 In *Itinera* (2022), both the author and Rob Entwistle published articles based upon the recognition that Long-distance Roman Alignments had physically existed and had not just been figures of speech. To avoid confusion in terminology, the two authors agreed that Long-distance Alignments (with capital letters) should be the spelling of the physical Roman entities, to distinguish them from any general alignments or indications of direction. Some authors refer to Long-distance Roman Alignments as LDAs, but in this paper the preference has been to use the full form.

2 This would not have been possible over such a distance in daylight. As General Roy found out when embarking upon the Ordnance Survey of Britain, using lights at night can increase the distances being surveyed manyfold. See Roy, W. 1790, several pages, but especially 265-6. I am indebted to Humphrey Welfare for this reference.

3 It appears that MacLauchlan had not actually seen the road at this point (Lindsay Allason-Jones pers. comm.) but that he had evidently relied upon the reports of others, including people working in the fields. At the same time MacLauchlan appears to have been completely unaware of any relationship between his

line, as speculated, and an alignment from Scotch Corner, so that their exact correspondence here seems highly unlikely to have been a coincidence.

4 It is envisaged that there would have been an equivalent main/civilian gateway through Hadrian's Wall at Carlisle for the western side of the country, but that, although there would have been gateways through each of the Wall's milecastles, these would have been intended for military use only (even if, later, that intention may well have been forgotten).

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The Devil's Causeway - A Preliminary Investigation of its Presence at Berrington, Northumberland

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Abstract

This paper describes the evidence for the existence and location of the Devil's Causeway at Berrington in North Northumberland. The project was prompted by a small assemblage of metal detecting finds of the Roman period that were unearthed in the vicinity of the road. A correlation was established between the observations of Victorian surveyor Henry MacLauchlan, aerial photography and lidar images. A survey of the plough-soil along this line revealed a significant quantity of stones consistent with the known fabric of the road. Based on these clues a series of test pits were excavated close to a river crossing. The results seem to suggest the presence of the road at this location. Documentary evidence is also presented showing that the Devil's Causeway may have continued to function as a significant route at Berrington into the mid-14th century.

Introduction

William Camden lamented that Roman roads, '*being dismembred ... and cut one peece from another in some places, by reason that the countrey people digge out gravell from thence, are scarcely to be seene*' (Camden 1607, 44-5).

The north end of the Devil's Causeway (Margary 1955, Roman Road 87) fits Camden's description of a road that is '*scarcely to be seen*'. For the most part it has remained elusive, having been destroyed by the plough or buried beneath modern sections of road. The most northerly confirmed sighting of the road prior to 2023 was 30 km south of the Tweed at Wooperton quarry in 2000 (Gates and Hewitt 2007). Excavations at Netherwitton in 2001 (Tyne and Wear Museums Service 2001) and Thornton Moor Farm in 2018 (AP 2018) revealed its surface including a central rib. A bridge abutment was discovered at the Hart Burn in 1989 and a paved ford at the River Wansbeck around the same time. (Brown and Hudson 1989) R.P. Wright opened seven sections of the road between Bradford and Ryal in 1937 (Wright 1938) and the most southerly sighting to date was at Matfen in 2017 (Morton 2018). For a more detailed summary of these excavations see Carlton 2018, 7-9.

A positive identification of the Devil's Causeway as far north as Berrington - just eight kilometres from Tweedmouth - would add a new piece of information to the current body of knowledge. It is hoped that what follows will provide a foundation for further investigation.

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MacLauchlan's Memoirs

Henry MacLauchlan visited Berrington during a three year-long survey of the Devil's Causeway that he began in 1857. In his memoirs he wrote that, '*Our line ran about 300 yards on the east of South Berrington House*' (MacLauchlan 1864, 46). This appears to refer to a projection of the line of the road northward from Lowick, rather than a physical sighting at this location.

Having established his datum, MacLauchlan describes four specific observations that he recorded with the assistance of farm steward John Todd. He reported that the road...

- may still be seen in the brook dividing South from North Berrington;
- appears near a well a little further on;
- is visible at a spot where four hedges meet in a field road, about 600 yards north from North Berrington House;
- passes about 180 yards east of the house, and traces of it may possibly be found in a ridge of land somewhat broader than the others.

Despite more than a century and a half of agriculture, MacLauchlan's survey may still be used to locate the line of Devil's Causeway as it passes through Berrington (Fig. 1). Resources that were unavailable to the Victorian surveyor, including aerial photography and lidar, compliment his work but also help to refine his fourth observation as will be discussed presently.

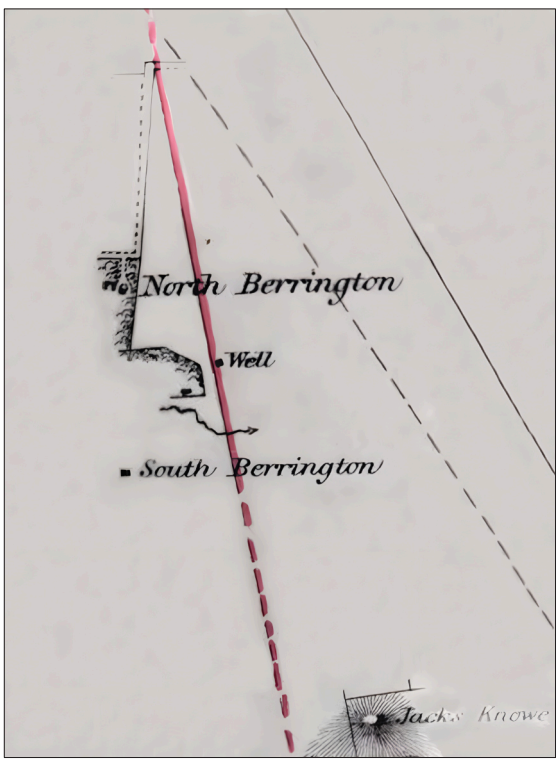


Fig. 1, Henry MacLauchlan's survey of Berrington. Published 1864

The well that MacLauchlan referred to no longer exists; however, a series of Ordnance Survey maps from 1868 to 1968 are in close agreement as to its exact location. Maclauchlan draws the road adjacent to the well on its west side. The vicinity of the well contains a significant amount of stone and water-worn cobbles that become visible after every harvest. It appears that the road may be close to the surface at this flat spot before it ascends the slope onto the east-west ridge of the field.

The place '*where four hedges meet in a field road*' was previously identified by the current landowner as an especially rocky area where many stones are to be found deposited in the field margins. One particularly large specimen measures 1.2 x 0.45 x 0.3 m. MacLauchlan's drawing shows the line passing to the east of



Fig. 2, MacLauchlan's observations plotted on Google Earth. His line coincides with a linear cropmark to the north of the well.
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the point where the hedges intersect. We can draw a line from there, passing just west of the well, to his datum '*300 yards on the east of South Berrington House*'. The GoogleEarth image taken in 2006 is useful in this context. The section of our line between the well and the next hedge to the north can be seen to pass through a light-coloured linear cropmark (Fig. 2; see also Fig. 3).

The intersection of this line with the Berrington Burn is where MacLauchlan saw the road '*in the brook dividing South from North Berrington*'. At this precise spot sandstone blocks protrude from the north bank of the river. Other examples are to be found in the stream and more worked stones can be seen scattered around the vicinity.

MacLauchlan's final observation at Berrington was of '*a ridge of land somewhat broader than the others*', a feature he located 180 yards (165 m) east of Berrington House. Patterns left by ridge and furrow ploughing are visible in aerial photographs of the field that is known in the modern estate plan as Big Field. Broad 'reverse-S' shaped ridges, likely from the medieval period, are evident. The north-west corner of the field contains narrower, straighter ridges that may be post-medieval in origin (Fig. 3). Although it has been somewhat obscured by modern agriculture, it is likely that these features were still visible in the mid-19th century. MacLauchlan makes reference to an especially prominent ridge that he suggested might be evidence of the Devil's Causeway. Figure 4 shows this earthwork highlighted by snow during the *Beast From The East* storm in 2018. A parallel earthwork, 150 m further west, can also be seen in the background.

This '*ridge of land*' is a prominent feature when viewed in lidar (Fig. 5). By overlaying MacLauchlan's line (indicated by 'A') it can be seen that the earthwork (indicated by 'B') is probably not the *agger* of



Fig. 3, Big Field rendered in grayscale highlighting the ridge and furrow furlongs. © 2023 Infoterra Ltd & Bluesky



Fig. 4, Earthwork, likely the 'ridge of land somewhat broader than the others' seen by MacLauchlan. Highlighted by snow during a storm in 2018. © Bill Blyth 2023, licensed CC

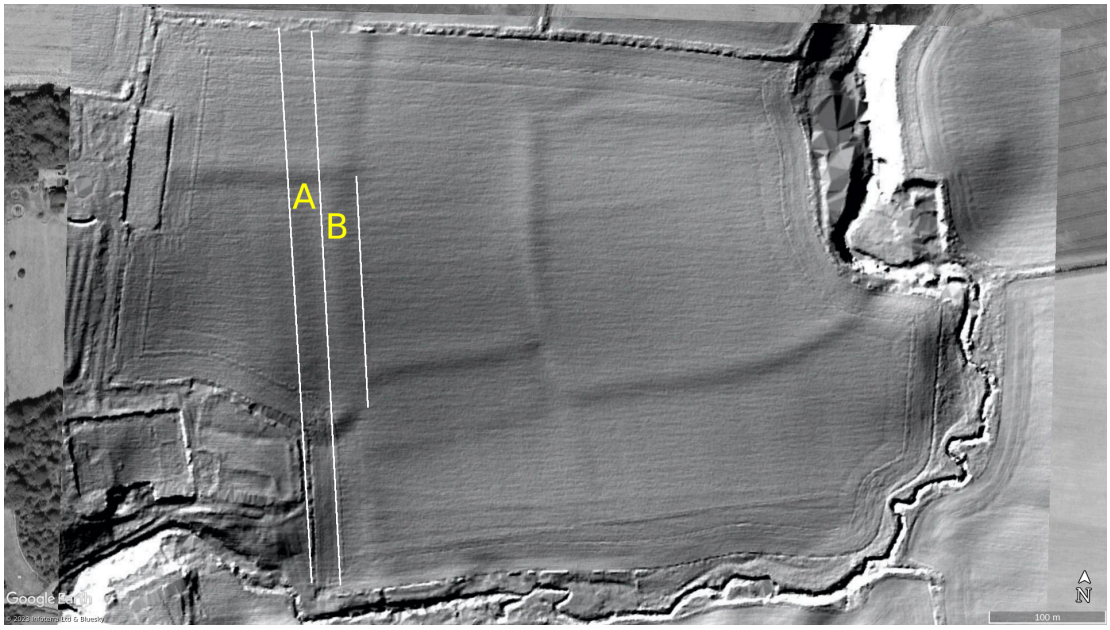


Fig. 5, lidar image of Big Field showing MacLauchlan's line (A) with the earthwork (B) immediately to the east.. Basemap © 2023 Infoterra Ltd & Bluesky: Lidar © Esri, Intermap, NASA, NGA, USGS | Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

the Devil's Causeway but lies immediately adjacent to the line on its east side. A complex pattern of earthworks is evident in the lidar image; a comparison with Figure 3 reveals these to be artefacts of a medieval open-field system. The headlands and baulks that separate the furlongs or *flatts* have left a permanent record in the landscape. It seems that MacLauchlan's caution was justified when he suggested the road '*may possibly be found*' in this earthwork, and what he saw was not the road but evidence of the way it had impacted the agricultural layout of Big Field.

Stone Survey

After harvest in 2022 a fieldwalking survey was conducted along a zone 50 m either side of the putative line of the road. A significant quantity of water-worn cobbles and blocks of whinstone were observed on the surface of the plough soil. The largest blocks of whinstone measure 0.2 - 0.3 m cubed. Geologist Dr Ian Kille observed that, '*The presence of whinstone in the field clitter is somewhat puzzling as ice movement here would have been from north to south and all outcrops of whinstone are south of this area. It leaves open a highly speculative possibility that these stones were purposely moved at some point in history*' (Kille 2023).

R.P. Wright observed similar-sized whinstone blocks in his excavation of the Devil's Causeway at Brandy Well Hall. He described a sandstone layer of '*bottoming*' 23 ft. 9 in. (7.2 m) wide, topped by a '*massive upper layer, which was composed of whin-boulders averaging 10 inches (0.25 m) cube*' (Wright 1938, 354).

Excavations

Based on this evidence an investigation was begun in August 2023, initially by way of a series of test pits, to see whether any physical remains of the road might survive north of the river crossing. The location on a strip of pasture was chosen to avoid disruption to the arable field, and because of the presence of the blocks of stone in the north bank mentioned above. It was also hoped that land so close to the river might have escaped the attention of the plough.

In the first test pit a compact layer of stones was discovered at a depth of 0.7 m. This pit was extended and a further two pits were opened to the west in an attempt to locate an edge. All three pits revealed the same layer. Four metres from pit one - at the western end of the third pit - the depth of the layer was found to be increasing, perhaps suggesting the beginning of a camber.

When an mechanical excavator briefly became available, the opportunity was taken to open a larger trench 20 m north of the Berrington Burn in the border of the arable field. The trench was 6 x 1.5 m with an east-west alignment. Again, a compact layer of stones was found at the same depth as the test pits. These stones are on average slightly larger (0.1 - 0.3 m) than in the test pits and also differ in that the upper layers have a distinctive orange-yellow colour (Fig. 6.1). Ian Kille recorded that:



Fig. 6.1, Trench opened on MacLauchlan's line, 20 m north of the Berrington Burn. The top layers have been consolidated with orange-yellow coloured clay. (Ranging pole is 2 m; north is at the bottom of the picture) *© Bill Blyth 2023, licensed CC BY-SA*

> *'Almost all of the stones examined consisted of sandstone with one piece of shale and no limestone. Most were entirely angular, but a significant number were rounded and weathered in a manner that was consistent with material found in glacial till'. Regarding the colour of the surface, he observed that, 'the orange-yellow colouring is likely a product of the poor-quality clay found between the stones in the top layer. This colour of clay is typical of clays found in glacial till and appears to have been used deliberately as a material to bed the stones together providing a more resilient surface'* (Kille, 2023).

The sandstone construction and absence of limestone - despite extensive limestone deposits nearby - is noteworthy. MacLauchlan observed a road parallel to his line across three fields at South Berrington but rejected it on the basis that it was formed from broken limestone, '*and it seems probable that there was no excavation made of that rock for the use of the road'* (MacLauchlan 1864, 45).

Although most of the surface has a random appearance there are a few areas that seem to show evidence of more careful hand-setting of the stones. The surface cambers down towards an eastern edge, but at the time of writing, the nature of the edge has not been resolved (Fig. 6.2). No diagnostic features have yet been discovered, such as kerbs or the central spine that was observed by Wright in his excavations at Edlingham and Bridge of Aln. It is interesting to note, however, that, at Brandy Well Hall, Wright found a combination of sandstone, clay and whinstone, but noted that the road *'lacked well-defined kerbs*' (Wright 1940, 65-74). It may be that the surface corresponds to that referred to by



Fig. 6.2, Facing west. Ranging pole is level showing camber and apparent edge. © Bill Blyth 2023, licensed CC BY-SA

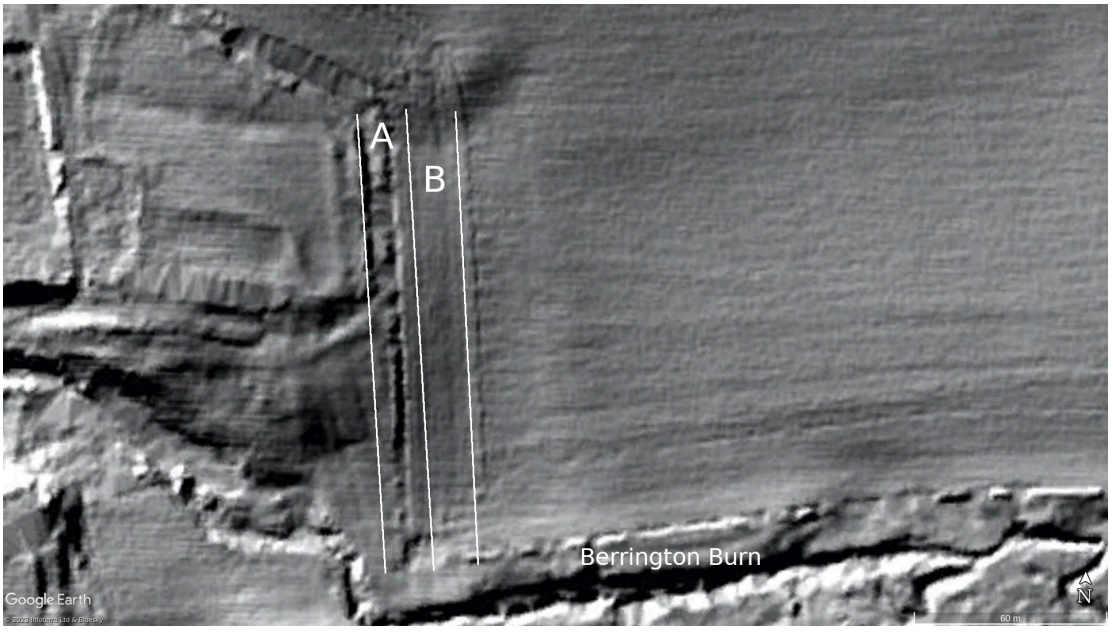


Fig. 7, lidar image showing a ditch (A) that that runs parallel to the line of the road (B) Basemap © 2023 Infoterra Ltd & Bluesky: Lidar © Esri, Intermap, NASA, NGA, USGS | Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

Wright as '*bottoming*', with larger stones having been robbed out in antiquity. A more extensive excavation will hopefully reveal further details of the road's construction and width as well as any evidence of a bridge abutment.

In the lidar image of this location (Fig. 7) a ditch (indicated by 'A') can be seen to run parallel to the line of the road (indicated by 'B'). It is tangible beneath the vegetation on the east side of the fence and it would not have functioned well as a drainage ditch in the context of current ground levels. Resolving whether this feature is associated with the road might be an additional objective of future work.

Evidence for Post-Roman Continuity

Ridge and Furrow Alignment

The 150 metre section of fence line that marks the western edge of Big Field, just north of the Berrington Burn, is the only field boundary adjacent to the line of the Devil's Causeway between Lowick and Berrington that is parallel to it. There is another possible alignment at Scremerston Hill Farm, more than five kilometres to the north.

David Astbury compared the alignment of the Devil's Causeway in south-east Northumberland - between the rivers Tyne and Wansbeck - with that of surrounding field boundaries, tracks, and ridge

and furrow. He reported that he found there to be '*very little relationship between the two*' (Astbury 2010, 292). He went on to say.

> *'For most of its route through this study area the Devil's Causeway runs oblique to field boundaries and evidence for ridge and furrow'. In his judgement, 'the lack of this feature type showing any affinity in terms of orientation with the Devil's Causeway is a clear indicator that the road had ceased to hold any importance by the time medieval furlongs were being laid out. Stretches of the road can be traced beneath medieval furlongs, which carries the implication that the physical components of the road such as stone used for the drains on either side of the road had been robbed or largely cleared for practical purposes during the process of laying out and ploughing medieval furlongs'* (Astbury 2010, 297).

In view of this lack of alignment Astbury thought it likely that *'at least significant stretches of the Devil's Causeway went out of use sometime after the fourth century and the eleventh century AD'* (Astbury, 2010, 298).

Our site is outside of Astbury's study area, but if a similar picture holds true north of the Wansbeck, then it is interesting to note how the ridge and furrow furlongs in Big Field share the same orientation as the line of the Devil's Causeway. Does this suggest that the road continued to be important at the time the medieval field system was laid out at Berrington? There is some documentary evidence that would seem to support an affirmative answer.

Documentary Evidence

Among the muniments of Durham Cathedral is a document penned on the feast day of St. Gregory (March 12) 1348 (Specialia GB-0033-DCD 3.1 Spec. 41). It records a grant by Robert Manners, soldier and Lord of Berrington, to chaplains Dom William of Middleham and Dom Robert of Dalton. In exchange for the annual payment of a hewing axe Sir Robert pledges a *messuage* (dwelling) with a garden containing *a rod and a perch* (approximately half an acre) to the north of the '*villa de beringdon'*. The document describes the location of this property as being between the tenement of John, son of Thomas, on the east, and on the west side the '*regiam viam que vocat le Lonynges*' (the Royal Highway called the Loanings) (Fig. 8).

The term *regiam viam* or *via regia* appears regularly in medieval records, often in the context of boundaries. According to Robert Peberdy it was not so much a name as the designation of the status of a road and implied certain legal obligations.

> *'The description of the route as [a] royal way in the mid fourteenth century suggests that it was well-established and had possibly been regarded as a strategic line of communication. The term was applied to 'primary national routes' and to 'secondary routes' between market towns and between market towns and shire centres. It appears to have been introduced by the Normans, though designated royal routes existed in Anglo-Saxon England, probably for military purposes. In the early twelfth century the designation via regia indicated that a route led to a major centre, namely 'a city or fortress or castle or royal town'. Royal ways were under the king's jurisdiction, and compensation for assaults on royal ways had to be paid to the king. Royal ways had to be kept open – they could not be closed or diverted' (Peberdy 2012, 103).*

This, then, is a reference from the mid-14th century to a significant road with a north-south orientation (since it marked a western boundary) that is adjacent to the village at Berrington. We also

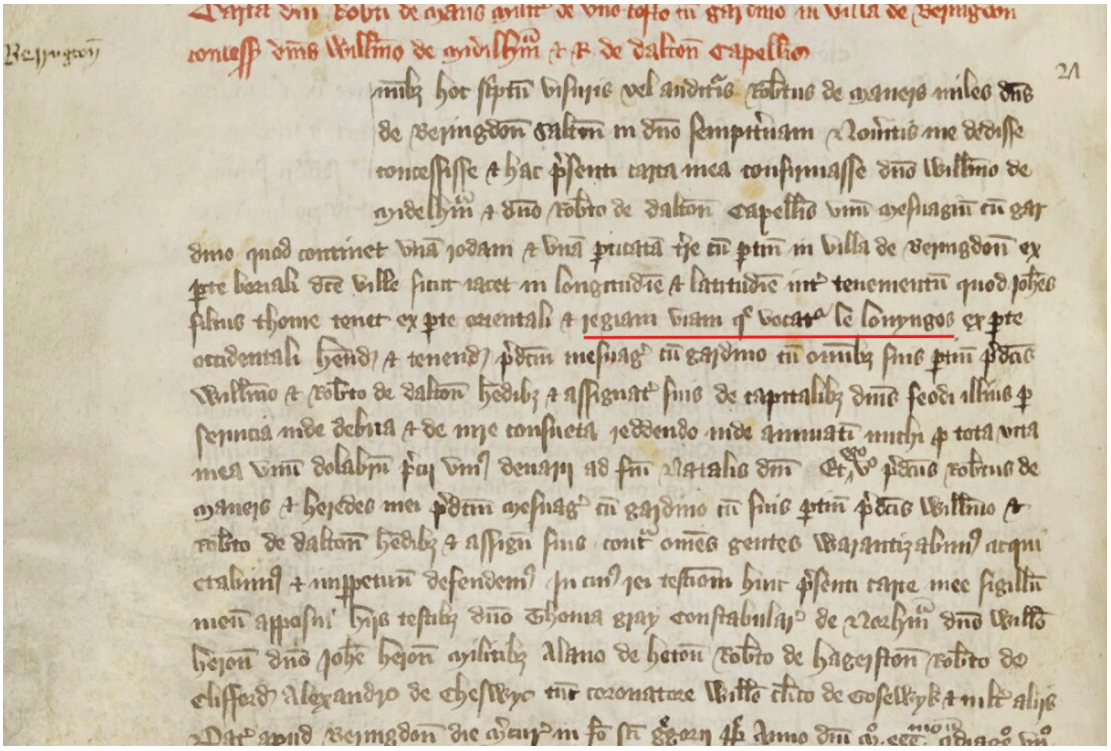


Fig. 8, Fourteenth century document that references a 'regiam viam que vocat le Lonynges' at Berrington. Provided by Durham Priory Library Project - a collaboration between Durham University and Durham Cathedral. CC BY-NC-ND 4.0

have evidence on the ground that the line of the Devil's Causeway was sufficiently influential in the medieval period to constrain the layout of the adjacent field system. The route led towards the major centre at Berwick-upon-Tweed, with its castle and harbour. It would seem reasonable, then, to identify the Roman road that became known as the Devil's Causeway with that referred to locally as the Loanings, and which held the legal status of a Royal Highway in the 14th century. Robert Manners' use of the designation *regiam viam* in the present tense suggests that the road was functionally, as well as physically, present at that time. While recognising the limitations of negative evidence, it may be worth noting that if the 'Lord of Berrington' was aware of the appellation Devil's Causeway he makes no reference to it in this document. As for the road's colloquial name, a section of the Devil's Causeway in the Hartburn area was also known locally as the *Harpeth Loaning* (Haycock 2021, 3).

Another example of a Roman road that went on to attain the medieval status of *Regiam Viam* can be found in a 12th century charter of King Malcolm IV that gifted the lands of the royal cook Gocelynton to the Monastery of Newbattle. The description of the boundaries includes the phrase, *'ad viam regiam que vocatur derestrete'* (as far as the Royal Way which is called Dere Street) (Curle 1911, 15).

If the destination of the Devil's Causeway in 1348 was Berwick-upon-Tweed - in English possession since the Battle of Halidon Hill in 1333 - the question arises about its southern terminus. Royal Highways tended to be long distance routes but how much of its original course was navigable in the 14th century remains a subject for further research.

Early Medieval Clues

When discussing a road built by Romans and known to still be in use in the medieval period, a question then arises about the intervening centuries. There is one written reference to the Devil's Causeway from the pre-Conquest period. The *Historia de Sancto Cuthberto* records a grant of land made by King Ceolwulf to Lindisfarne in AD 737. The description of the boundaries includes the phrase '*et ab Alna usque in dimidiam viam inter Cocwud et Alna*' (and from the Aln to the mid-point of the road between Coquet and Aln). Although there are differences of interpretation regarding the details of the boundaries, it is generally agreed that the *viam* referred to here is the Devil's Causeway '*therefore providing evidence of the road being in use in the 8th century*' (Haycock 2021, 25).

J. E. Albone addressed the once prevalent opinion that '*Roman roads were largely, if not completely, abandoned during the early Anglo-Saxon period*', and those that survive today are the few that were later reinstated (Albone 2016, 29). Albone argues that this view was based in part on the questionable assumption that there was little or no long-distance travel taking place in the 5th or 6th centuries to ensure that the roads continued in use:

> *'Increasingly, excavated evidence, particularly in the form of grave-goods from cemeteries, is demonstrating that early Anglo-Saxon communities had very wide communication and trade networks and that long-distance travel was likely to have been a regular occurrence for at least some elements of the population'* (Albone 2016, 29).

Citing Oliver Rackham, Albone states that roads only survive through continuous use and any road that is neglected soon becomes '*more impenetrable than if it had never been a road'* (Albone 2016, 30). In support of this hypothesis is the example of Sandyford Bridge, which carried the B6353 Berwick to Wooler road at Berrington until it collapsed during a storm in 1958; this was replaced by a new bridge nearby and a short section of the road abandoned. Just over six decades later it would be difficult to discover that a road ever existed there. Any road that fell out of use for many centuries would surely become beyond recovery. It seems probable then that the Devil's Causeway continued to be used as a route in the early medieval period at Berrington.



Fig. 9, Early Medieval strap end found in Big Field Berrington. © Bill Blyth 2023, licensed CC BY-SA

Deb Haycock has examined the influence of the Devil's Causeway on post-Roman settlement patterns and found that the etymology of place-names and the location of pieces of Anglo-Saxon sculpture were among the factors considered in locating potential sites (Haycock 2021, 17-24). It was observed that places where the road crosses rivers or burns frequently coincided with sites of continuous occupation.

There are a few hints of an early medieval presence at Berrington that could account for the continued use and maintenance of the road. Richard Lomas identifies Berrington, Kyloe and Low Lynn as an example of a pre-Conquest thanage that survived the reorganisation of the incoming Norman regime (Lomas 2005, 15). In his

Dictionary of English Place Names Eilert Ekwall writes that Berrington is derived from the Old English *byrig-dun* meaning a 'hill with a burg' (Ekwall 1935, 39). Mark Wood identifies the characteristic feature of a *burh* as a '*man-made landscape feature, generally a fortified place*'; as a place-naming element *burh* suggests a date of the 7th and 8th centuries (Wood 2007, 267-69). Regarding the second naming element *dun,* he cites Margaret Gelling, who suggests it was '*probably used in the formation of settlement names from the beginning of the Anglo-Saxon period and into the 8th century but was not commonly used for settlement naming after 800 AD*' (Wood 2007, 308). Wood cites Berrington as an example of a place that combines these two naming elements (Wood 2007, 269).

An Early Medieval strap-end has been found in Big Field (Fig. 9). Similar examples recorded by the Portable Antiquities Scheme fall within a date range of AD 750-95. In 2023 a recycled window head of early medieval date was discovered in the wall of an 18th century barn at Berrington within metres of the projected line of the Devil's Causeway (Allason-Jones 2023).

Roman Small Finds

The Romans who travelled along the road left behind a few tokens of their presence that were rediscovered by metal detecting in Big Field and one adjacent field. Lindsay Allason-Jones has kindly contributed the following descriptions of these objects.

(Fig. 10.1) Part of a terret (a rein ring for a yoke) with circular-sectioned hoop, which narrows from the base. The centre has a double lipped projection. The base is hollow with a large elliptical hole; the integral strap bar is missing. This falls into the category of 'massive terrets', the double-lipped projection being typical of the type. Most massive terrets have been found in the North of England or Scotland, with a preponderance from Aberdeenshire, although some are known from Wales. Parallels found in closest proximity to Berrington are from Corbridge (MacGregor 1976, no. 115) and Eyemouth (MacGregor 1976, no 119), which may be described as being at either end of the Devil's Causeway. MacGregor has suggested that this type was '*devised by British craftsmen, working under Continental influence sometime between the late 1st and the mid-3rd centuries A.D.*' (MacGregor 1976, I, 48). W: 67 mm, Surviving H: 44 mm, Max. Th: 22 mm.

(Fig. 10.2) Circular pendant stud with a bevelled flange surrounding the hollow, domed centre. There are incised concentric lines on both the flange and the dome. The attachment is flat with a flared end and 5 mm circular hole. These would have been attached to the body straps of harness to carry heart-shaped pendants. Although the majority of such studs are hexagonal in shape, circular studs are known in Roman military contexts in the 3rd century AD. They are particularly common along the German limes, see Oldenstein 1976, 137-8, but are known in Britain. Diam: 38 mm, L with loop: 41 mm, H: 14 mm.

(Fig. 10.3) Pendant terminal? Crescentic loop with a bulbous shaft and part of a second open terminal. This would appear to come from a swivel, possibly from a cauldron, although those elements are usually of iron. Roman? Total L: 15 mm, Max. Th. of shaft: 14 mm.

(Fig. 10.4) Flared oval head of a small trumpet brooch with a circular-sectioned bow. Traces survive of the double lug hinge mechanism. This is a common type of bow brooch, dating to 75-200 AD. It is slighter than many trumpet brooches and would not have been strong enough to hold a cloak, but



Fig. 10.1, above left, terret ring (rein guide), late 1st to mid 3rd centuries AD. © Bill Blyth 2023, licensed CC BY-SA. Fig. 10.2, above centre, harness decoration, mid 3rd century AD. © Bill Blyth 2023, licensed CC BY-SA. Fig. 10.3, above right, pendant terminal, identity uncertain. © Bill Blyth 2023, licensed CC BY-SA



Fig. 10.4, above left, part of a small trumpet brooch AD 75-200 © Bill Blyth 2023, licensed CC BY-SA. Fig. 10.5, above centre, three of eleven domed studs found at diverse locations within the vicinity of the road. © Bill Blyth 2023, licensed CC BY-SA. Fig. 10.6, above right, coin probably of Antoninus Pius AD 138-61 © Bill Blyth 2023, licensed CC BY-SA



Fig. 10.7, lead steelyard weights; typically Roman in form. © Bill Blyth 2023, licensed CC BY-SA

may have been worn in a soldier's cravat or as one of a pair to fasten a woman's tunic. They are mostly found in military contexts. For type and dating, see Mackreth 2011, 114-6. Surv. H: 15 mm, W of head: 13.5 mm.

(Fig. 10.5) Eleven copper alloy domed studs. Five have rectangular-sectioned, slightly tapering shanks *in situ*. Two have circular holes roughly pierced from the outside in the middle of the domed head but with no trace of the shanks. Three have a small section of rectangular-sectioned shanks *in situ*. Although they are mostly now corroded, one still retains a polished surface to its dome. It is possible that these are Roman in date, as they are a type found on Roman sites, but this type of domed stud has a very long period of use so dating them out of context is not possible. Diameter: 21- 30 mm, length of only complete shank: 20 mm.

(Fig. 10.6) Very badly worn AE2 coin, probably of Antoninus Pius (138-161 AD). The obverse has an emperor's head facing right in full profile; the reverse is too corroded for identification.

(Fig. 10.7) Two of three lead steelyard weights with integral iron suspension loops. The biconical shape is typically Roman in form.

Conclusion

In summary, this paper is making two propositions. Firstly, that physical remains of the Devil's Causeway still exist at Berrington, and secondly, that it continued in use as a significant highway into the mid-14th century.

Various lines of evidence point to the presence of the road and to its exact location. A small assemblage of finds consistent with a military context are suggestive of Roman activity. Henry MacLauchlan's memoirs are particularly precise at Berrington. His putative line is supported by cropmarks that are visible in aerial photography and with features that are revealed by lidar. Stones of a type and size that are known to be consistent with the road were found in the plough soil. Finally, an excavation targeted on this line uncovered a compact surface of sandstone. More work remains to be done; however, it seems reasonable to propose that the most northerly sighting of the Devil's Causeway can be moved a further 30 kilometres towards the Tweed.

References to the Devil's Causeway in the post-Roman period are relatively rare so the mention of a major road at Berrington in the mid-fourteenth century is potentially an important piece of data. Its status as a *Regiam Viam* and the record of its colloquial name are useful pieces of information that add to our knowledge of the road's history.

Further investigation will hopefully resolve unanswered questions such as the construction and width of the road, the possible presence of kerbs and the nature of the river crossing.

At other locations, such as Piercebridge, a number of small finds have been recovered from river crossings (Eckardt and Walton, 2021). Further searching in the Berrington Burn may also reveal clues about the lives and practices of the people who briefly occupied this distant corner of Roman Britain.

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