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features

Looking for Vikings in North-West England

A new genetic study has added fresh insights to an area of England rich in Scandinavian finds and placenames. Steve Harding and Mark Jobling describe their dramatic results. First, David Griffiths sets the scene.

As you drive up the A540 on the Welsh-facing side of Wirral – the peninsula bounded by the estuaries of the Dee and the Mersey – you will come to a roundabout with a sign pointing on towards Meols. Meols (pronounced Mells) has been the source of an extraordinary range of ancient and historic artefacts, exposed by the eroding shore and collected at least as long as local people took wood from a submerged forest for their fires.

You need look no further than the road sign, however, to begin to understand the unusual history of this region. Ahead, West Kirby derives from the Old Norse for village with a church (*kirkju-byr*), while Meols itself is Old Norse for sand dunes (*melr*). To the right, Frankby derives from a combination of Old English (*franca*, Frenchman's) and Norse (*byr*, farm). Greasby is a substitution of the Norse farm-name *byr* for what was recorded in Domesday Book as an apparently entirely English name, Gravesberie (*graefe burh*, stronghold in a wood). Upton is Old English for farm on a hill (*Optone*). On the left, Caldby is a Norse name which is translated differently by two leading placename scholars as Cold Islands or Cold Arse. Nearby are Irby (Old Norse for farm of the Irish), Thingwall (the site of the local Norse assembly mound), and Landican, a Brythonic or Old Welsh name (*Llan-Tegan*, church of St Tegan).

These names reveal a mixed population of Scandinavians, Anglo-Saxons, Welsh-speaking Britons, and immigrants from the European continent. The history and archaeology of north-west England stand apart from the Danelaw, where Scandinavians controlled north and eastern England from the late ninth century. Here on Wirral, on the west-facing seaboard of the Anglo-Saxon Mercian kingdom, we find much more pronounced influence from the Irish Sea, with trading and cultural contacts westwards and northwards into Wales, Ireland, the Isle of Man and Scotland.

How these people became the common ancestors of much of the local population today is a profoundly fascinating story. But who, in the north-west, were the original Vikings? For this we need to turn to documents and archaeology.

The Vikings arrive

The first Viking raids in the west were on islands off the Irish coast in AD795, two years after the famous raid on Lindisfarne (Northumberland). Semi-permanent settlement in Ireland began in the late 830s in fortified camps at Dublin and elsewhere on the major river systems and coastal havens. In England, Danes had reached York by 867. They over-wintered in Mercia (at Repton, Derbyshire), in 873–4, before heading north and east again. Repton is only 60km from Cheshire, yet our first "confirmed sighting" of Scandinavians on the Dee or Mersey occurs at the surprisingly late date of 893. The Anglo-Saxon Chronicle records that a group of Danes occupied a "deserted city in Wirral which is called Chester". These included remnants of a force under Hástein which had recently been defeated by Alfred on the banks of the river Severn at Buttington, Montgomeryshire. They were chased off into Wales the following year by the Mercians; this may have been the occasion for the refortification of the derelict Roman defences, although Chester was not recorded as an official fortified *burh* until 907.

We know rather more about another Viking incident. In 902 the Irish expelled the Vikings from their base at Dublin. This caused political upheavals on both sides of the Irish Sea, and Hiberno-Norse immigration into the Isle of Man and north-west England. Welsh Annals (*Annales Cambriae*) tell us that in 903 an individual with the Old Norse name Ingmund (*Ingimundr*) seized a place on *Môn* (Anglesey) called *Maes Ros Melion*. A wholly unconnected Irish source called the Three Fragments of Annals also mentions Ingimund and his followers: they were ejected from Wales and followed the coast further east, where they requested land on which to settle for Æthelflede, the ruler of Mercia. This she granted.

The historian FT Wainwright, writing in the 1940s, convincingly proposed the northern half of the Wirral peninsula as Ingimund's probable settlement area. Across the Mersey estuary, south-west Lancashire has an equally dense cluster of Scandinavian placenames, including a Thingwall assembly place in West Derby (now part of Liverpool). But as that side of the Mersey was part of Northumbria at the time, it seems less probable that it could legitimately have been part of Æthelflede's grant of land. Yet it certainly saw significant Viking settlement. Were Vikings already living on one, or both sides of the Mersey, perhaps welcoming Ingimund's followers as kindred migrants from distant Ireland or Scandinavia? It is possible, but hard to substantiate. Placenames are only datable to their first written record, which for here is mostly Domesday Book (1086). Archaeological evidence does hint at settlement and trade in Wirral in the ninth century, but the vast majority of Viking material found there dates from later centuries.

Ingimund was not satisfied with his lot. Soon afterwards he and his followers attacked Chester, hoping to grab a share of its wealth and strategic importance. The Cestrians successfully fought back, as the Three Fragments tell us, by unleashing swarms of bees and pouring boiling beer on the attackers. Whatever the truth of these details (Cheshire people are not noted for wasting beer!), Ingimund retreated.

Yet the local Viking settlements remained as a thorn in the side of the English. There is a strong chance that the famous Battle of *Brunanburh* (937) took place in Wirral (although advocates of other possible locations on the Solway and Humber estuaries vigorously dispute this). In this dubiously-located but dramatic clash of arms, the English under Æthelstan defeated a coalition of Dublin-based Vikings, Scots and other northern forces. The Wirral location was proposed by the placename expert John Dodgson in an influential article in the *Saga Book* of the Viking Society (1957). Bromborough, in

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Editor Mike Pitts

south-east Wirral, is the nearest placename match: *Brun-burh* (OE, stronghold of *Bruna*), and the strategic position of the two estuaries is a convincing backdrop. Some versions of the story portray the defeated Anlaf of Dublin fleeing across *Dingesmere* – perhaps one of the estuaries, or even the Irish Sea itself. Following this more serious Viking defeat, the English grip on the area strengthened. According to the Anglo-Saxon Chronicle there was another raid on Cheshire by a “northern naval force” in 980, but thereafter until the Norman Conquest the din of war diminishes in relation to the more humdrum sound of former enemies making a living together.

The material legacy

Scandinavians settled in both rural and urban areas. Only placenames survive from most rural settlements, but fragmentary remains of pre-Norman buildings have been found in excavations at Irby and Moreton (Wirral). At Meols, a long-lived and ancient beachmarket on the north Wirral coast was revitalised by the Vikings: wattle buildings discovered in eroding sand dunes in the 19th century were described as “long narrow sheds” – possibly a reference to the longhouse type of building common in Viking Dublin, and also found at Llanbedr-goch, Anglesey. The erosion of Meols led to the discovery of numerous Viking artefacts, including ringed pins of Hiberno-Norse type, and other small dress items bearing Viking art styles. A group of iron weapons found in 1877 may have come from a Viking grave, perhaps similar to a better-recorded example found in 1932 in sand dunes at Talacre, on the Welsh side of the Dee estuary.

Chester, the main town and harbour in the region, never succumbed to Viking control, unlike York or Dublin, apart from that brief incident in 893–4. Yet it became a trading powerhouse in the 10th century, and its prosperity was firmly linked to the Irish Sea Viking world. Local Chester Ware pottery is common in both Chester and Dublin, and Viking artefacts such as the *Borre/Jellinge style brooch* excavated at Hunter Street school in 1981, ringed pins, and other pins and dress items, point towards the Anglo-Scandinavian cultural mix within the city.

The Vikings were master metal-workers, and silver was their preferred medium of wealth. The Cuerdale hoard from the banks of the river Ribble, deposited in c905 and rediscovered in 1840, remains the largest silver hoard in the Viking world. Over 8,500 fragments of silver and coins point to contacts as far afield as Iraq and Afghanistan. Not far from the hoard find-spot, near Preston, a typical Viking lead weight with interlace decoration has recently been found (right).

Cuerdale was a highly unusual “political” treasure, but other hoards in the region show the gradual transition in the local economy from war booty to trade and currency. Chester has four hoards, the earliest of which (at St John’s church) had eight St Peter’s pence of York (links are confirmed by a coin impression in lead found at Coppergate, York, which bears a Chester mint signature). The largest is the Castle Esplanade hoard of c965, rediscovered in 1950, which had 550 coins and 148 pieces of hacksilver (cut-up metalwork). A hoard found in 1611 at the Harkirke, Little Crosby, south-west Lancashire, is now lost, but a 17th century engraving survives, and written evidence suggests it probably had up to 300 Anglo-Saxon, Viking York and continental coins. Chester’s mint was the most productive in England in the early 10th century: its issues dominate coins in Irish hoards of this period.

More recent discoveries underline the importance of silver in the Viking period economy. A hoard including 20 arm-rings of Hiberno-Norse type was discovered at Huxley, south-east of Chester, in 2004, during the first few minutes of a metal-detecting rally. At nearby Eccleston, a smaller hoard of hacksilver was found in 2002. Individual discoveries emphasise Viking links: such as a silver penny of Anlaf Guthfrithson, King of York (939–41), found on the edge of the Dee estuary at Neston in 2005, not far from the findspot of a silver ingot and a ninth century Frankish coin – both probably associated with Viking activity. Meols has produced over 30 pre-Norman coins, including two Hiberno-Norse imitations, which led Mark Blackburn to suggest there may even have been a Viking mint here for a short time in the early 11th century.

An increasingly prosperous and settled Anglo-Scandinavian elite established itself in the parishes of Wirral, south-west Lancashire, and to a lesser extent in the hinterland of Chester and north-east Flintshire. By the late 10th century any lingering hopes of resisting English authority had largely vanished, and the story henceforth is one of economic activity and cultural assimilation.

As elsewhere in northern England and the Isle of Man, the pattern of lordship is marked by stone sculpture, here mostly in the area’s characteristic red sandstone – a local artistic tradition adapted by the descendants of the earliest Viking settlers to help promote their own legitimacy. Scenes from the pagan Viking past are often juxtaposed with Christian symbolism. Wirral has a particularly dense cluster of sculpture, with smaller groups in Chester and north-east Wales, although surprisingly little is known from south-west Lancashire. St Bridget’s church, West Kirby, has one of the most impressive arrays, with circle-head crosses and a recumbent “hogback” grave-marker of a type well-known elsewhere in northern England. In 2004 a superbly decorated but unusually small hogback with gripping “bears” at either end surfaced from the garden rockery of a former vicarage of St Oswald’s church, Bidston, Wirral. This stunning discovery confirms that the archaeological search for Vikings in the north-west is very far from over!

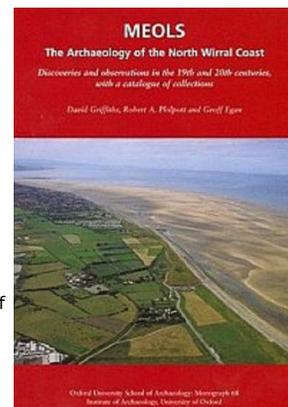
*David Griffiths is reader in archaeology at the University of Oxford, based in Continuing Education. See “Meols: The Archaeology of the North Wirral Coast”, by D Griffiths, RA Philpott & G Egan (University of Oxford, School of Archaeology, 2007: left) and “A miniature Viking age hogback from the Wirral”, by R Bailey & J Whalley, *Antiquaries Journal* 86 (2006), 345–56*

A wide-ranging team of specialists wondered if a strong Viking presence in Wirral and west Lancashire could be seen in the genes of local people today. Steve Harding and Mark Jobling describe what they found.

The archaeological finds and historical records – the story of Ingimund, for example – point to the arrival and presence of



A lead weight found recently in Preston, with a typical Viking interlace design (31mm long)



Vikings in north-west England over a millennium ago. The coastal region from the river Dee to the river Solway also has a wealth of placenames with Scandinavian or Irish-Scandinavian origins. In England, however, only Wirral and west Lancashire possess definite examples of the name Thingwall (from Old Norse *þing-völlr*, meaning assembly field), indicating settlements of sufficient density and autonomy to warrant their own parliaments (the nearest related placenames are Tynwald in the Isle of Man and Tinwald in south-west Scotland).

Moreover, minor placename elements in this area indicate the persistence of a Scandinavian influenced dialect through the centuries. For example, Wirral has nearly 100 examples of the element "rake" (Old Norse *rak*) which became a dialect word for lane, over 50 examples of "carr" (Old Norse *kjarr*) meaning marshland or boggy land overgrown with brushwood, and 24 examples of "holm" (Old Norse *holmr*, island or dry ground in a marshy area). By contrast, there is almost a complete absence of the corresponding English names – elements such as *mersc* (marsh) and *ég* (dry ground in a marsh) – for the same features.

Placenames also indicate that many of the Norsemen came to Wirral from Ireland, and brought Irish people with them. Prominent Irish names include Liscard (Old Irish *lios na carraige*, hall at the rock) and Noctorum (*cnocc-tírím*, hill that's dry). Irby is from the Old Norse *Ira-byr*, meaning settlement of the Irish or settlement of Norsemen coming from Ireland. This Irish influence also helps explain the name Dingesmere, the site of the Battle of Brunanburh described in the Anglo Saxon Chronicle entry for AD937. It was suggested in 2004 that it means the "Thing's mere" – the wetland or marshland (Old Norse *marr*) associated with the Thing. Our genetic study based on men from old families appears to confirm this strong Viking legacy.

Genes and surnames

Modern genetic methods now provide us with a corresponding way of probing ancestry based on DNA. Particularly useful here has been the male-specific Y chromosome which is passed almost unchanged from father to son.

A man's Y-chromosomal DNA is characterised in two ways. One is by the analysis of specific DNA sites that differ between individuals, which place it into a broad group within the family tree of human Y chromosomes. These groups are called *haplogroups*, and are given names prefixed with letters of the alphabet, such as E, I, and R1A.

The second is by the analysis of several short segments of DNA that vary in length between men (the kind of DNA variation that is used in forensic profiling), yielding a series of numbers that can be compared between individuals. Combinations of these numbers are called *haplotypes*, and can be used to explore diversity within the haplogroups.

DNA samples are taken using simple mouth swabs, and standard laboratory techniques are used to characterise haplogroup and haplotype. The Y-chromosomal variation within a population and the differences between populations are then studied using statistical methods.

In probing Viking ancestry – ie linking old genes with modern geography – a major obstacle has been recent population movement. In the Wirral and west Lancashire this is especially acute, because the region has undergone a major influx of people since the industrial revolution. In the case of Wirral for example its population has grown over 70-fold between 1545 and 1921 – almost 10 times the national average increase. In conventional sampling strategies, where two generations of residence in an area is usually regarded as sufficient to qualify a DNA donor for participation in a study, any signal from Viking influence is likely to be weakened by the noise of more recent population movement.

Our recently published study (see end note), by an interdisciplinary team of scientists from the Universities of Leicester, Nottingham and UCL together with historical, placename, surname and local experts, has circumvented this problem by using the close relationship between Y-chromosomal DNA and paternally inherited surnames. Studies have shown that it is not only a man's Y chromosome that has been passed along his paternal line, but also his surname – or at least since the 14th century, when the patrilineal system of surnames became common in many parts of the British Isles. Sampling men with particular surnames known to have been present in Wirral and west Lancashire in medieval times, may give us a "medieval" sample of Y chromosomes, relatively unaffected by post-Viking immigration.

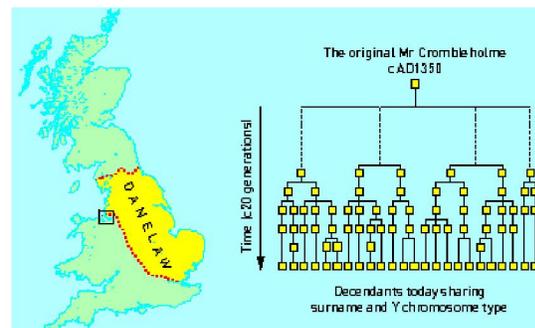
The genetic legacy

For both Wirral and west Lancashire, two sets of volunteers were used. The first set (providing "modern" samples) were those people who passed the standard two-generation residence test (paternal grandfather from that area), but avoiding the highly urbanised Liverpool and Birkenhead. The second set ("medieval" samples) were people who passed the two-generation criterion but in addition possessed a surname present in the region prior to 1572 (or a surname that was derived from a local placename); also, as far as they knew, their oldest paternal ancestor was from the region.

Lists of surnames in Wirral came from the Henry VIII subsidy rolls (households paying taxes), criminal records (the Cheshire Trailbaston proceedings) and alehouse records. For west Lancashire, names came from a large list of people

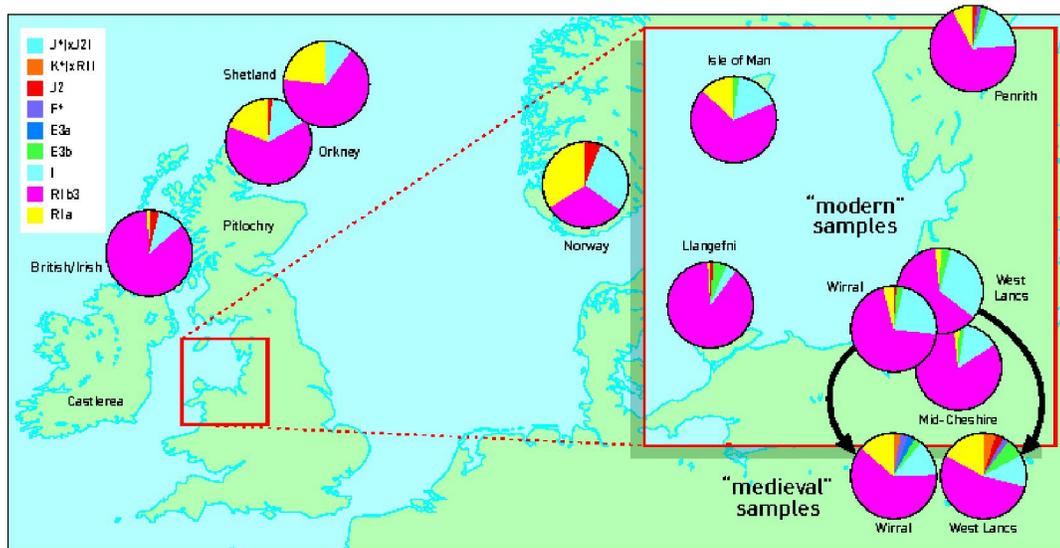


The genetic study created much media interest on both sides of the North Sea



Coinheritance of surname and Y chromosome type, for a hypothetical Mr Crombleholme. This relationship is disturbed by illegitimacy or adoption, and does not hold for very common names that probably had many founders

contributing towards the stipend of the priest of Our Lady at Ormskirk. To avoid biasing the data, duplicate surnames were avoided. Volunteer recruitment was made possible with the help of local organisations such as the West Lancashire Heritage Association, Wirral council, BBC Radio Lancashire, BBC Radio Merseyside, the Liverpool Daily Post, Wirral News, Wirral Globe, Ormskirk Advertiser and the Ormskirk Champion.

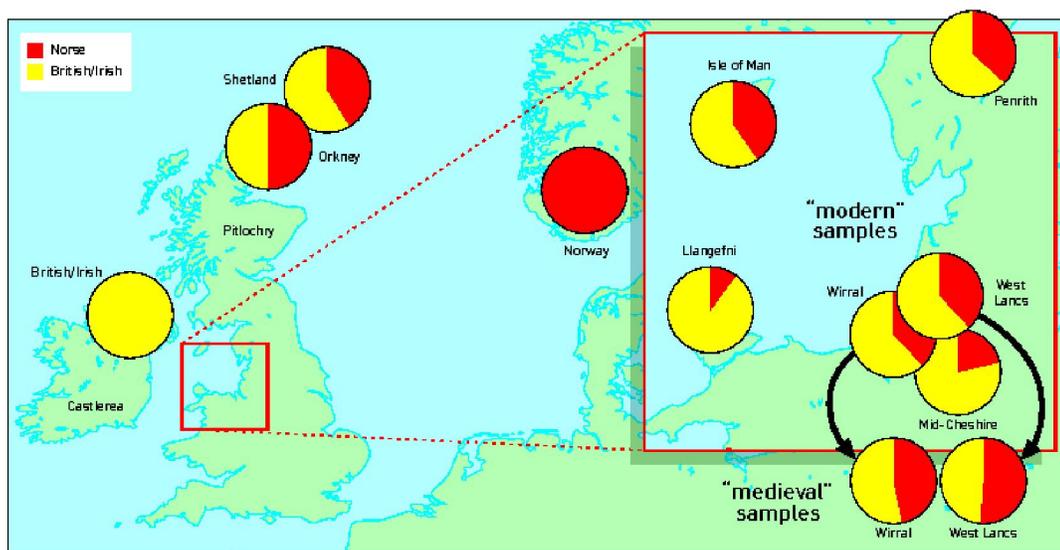


DNA samples were taken from volunteers in Wirral and west Lancashire, with "medieval" profiles distinguished from "modern" by surname (see text); other modern samples are mapped for comparison. Pie chart sectors are proportional to haplogroup frequency. The proportion of group R1A, common in Norway, is locally significantly higher in the "medieval" profiles

The Y chromosome haplogroup/haplotype distributions were compared with existing data from a "British" population (a composite of Castlereas in Ireland and Pitlochrys in Scotland), Llangefni in Anglesey, the Isle of Man, Shetland, Orkney, Penrith and also mid-Cheshire. The latter was chosen because of its close proximity to Wirral and west Lancashire, but with a much lower proportion of Scandinavian placenames.

The modern and medieval samples have significantly different sets of Y chromosome types, with the distribution in the latter more closely resembling that seen in Norway. This includes the prevalence of a haplogroup known as R1A, common in Norway but relatively rare in western European areas not known to have been settled by Norwegian Vikings. Statistical analysis of the Y chromosome distributions indicates around 50% Norse ancestry for both "medieval" populations, the same as modern Orkney. Although the estimate is subject to uncertainty, the results do appear to confirm the belief that Wirral and west Lancashire were both once heavily settled by Norse Vikings.

Besides the strength of the Norse contribution, the method also shows the similarity of Wirral and west Lancashire to each other not only today but in medieval times. It also appears to offer the promise that surname-based sampling may help to disentangle past population history in other regions, with rarer surnames giving better resolution than more common ones.



Norse ancestry. If the Wirral and west Lancashire samples are treated as mixtures of British/Irish and Norse populations, then the proportion of Norse ancestry is greater in the "medieval" than in the "modern" samples: the former were approximately the same as for modern Orkney (c 50% Norse admixture)

It is worth pointing out that it is much harder to identify Danish Viking contributions (eg in eastern Britain), because Danish and "Anglo-Saxon" Y chromosome types are too similar. An earlier study has appeared to show that the "Danish/Anglo-Saxon" or "invader" admixture was strong in areas with significant densities of Scandinavian placenames – such as within the Danelaw – but relatively weak elsewhere, implying the Anglo-Saxon contribution to the population admixture of the British Isles is only small. A comparative study of Y chromosome and maternally inherited mitochondrial DNA distributions in Shetland, Orkney, the Western Isles, Isle of Man and Iceland, showed that the further away from the Scandinavian homelands the Norsemen settled the less likely they were to bring families from Scandinavia. Unfortunately, the surname-based recruitment method does not let us explore the maternal ancestry of the population, and hence cannot add further to this interesting observation.

Thanks to generous support from the [Wellcome Trust](#), the study is now being extended to north Lancashire, Cumbria and north Yorkshire in an attempt to see how far into medieval northern England the Norse settlers from the Irish Sea penetrated.

*Steve Harding is a professor of biology at the University of Nottingham. He is coauthor of [Wirral & its Viking Heritage](#) (English Place-Name Society, 2000) and maintains a Wirral and west Lancashire blog at www.nottingham.ac.uk/~sczsteve. Mark Jobling is a Wellcome Trust senior fellow in basic biomedical science and professor of genetics at the University of Leicester. He is coauthor of [Human Evolutionary Genetics: Origins, Peoples & Disease](#) (Garland Science, 2003). See "Excavating past population structures by surname-based sampling: the genetic legacy of the Vikings in northwest England", by GR Bowden, P Balaresque, TE King, Z Hansen, AC Lee, G Pergl-Wilson, E Hurley, SJ Roberts, P Waite, J Jesch, AL Jones, MG Thomas, SE Harding, & MA Jobling, *Molecular Biology & Evolution* 25 (2008), 301–9, and www.nottingham.ac.uk/~sczsteve/survey.htm. Griffiths and Harding are both contributors to events at NICE 08, the first Nordic Art and Culture Festival in the north-west, from Nov 20–30; linked events have begun, including exhibitions at World Museum Liverpool.*