

1

Interdisciplinary Approaches to the Scandinavian Heritage of North-West England

David Griffiths and Stephen E. Harding

CONTENTS

Introduction.....	1
Perceptions of Viking Heritage	3
Searching for Vikings in North-West England: The Development of Scholarly Enquiry	9
Interdisciplinary Approaches in Modern Research.....	14
History, Language, and Names	14
Archaeology	19
Human Sciences and Population Genetics.....	21
The Present and Future of Viking Studies.....	26
References.....	28

ABSTRACT A wide variety of approaches based on historical, archaeological, place-name, linguistic, physical, and genetic tools can collectively provide a detailed understanding of the Vikings in peace and in war. This chapter and the rest of the book that follows focuses on one particularly exciting area of the Viking world, namely the north-west of England, an area where we now know them to have settled in large numbers. We take an overview of the technologies and approaches available and describe how new technologies are helping us to better understand what the Vikings left behind in terms of language, culture, archaeology, place-names, and genetic profiles of the people living there today.

Introduction

The Viking Age in England lasted for just three centuries, from the earliest recorded raids in the AD 790s to the Norman take-over that took place between the Battle of Hastings in 1066 and William Rufus's annexation of Cumbria in 1092. This 300-year period began with sporadic Viking raids, and saw increased political and economic interaction, settlement, and ultimately assimilation. Seen against the long-term background of two millennia of Roman, medieval, and modern history, the Viking Age was a relatively transient phase occurring when the national institutions and allegiances that we know today were barely beginning to take shape; it left a highly fragmentary and tantalizing set of physical and cultural traces.

The prominent and highly distinctive historical reputation of the Vikings, as it exists today, is out of all proportion to the muted and often contradictory evidence for their actual presence that has survived in historical, archaeological, and biological forms. An outstanding example of this—and the geographic focus of this book—is the north-west of England ([Figure 1.1](#)).

Attempts to quantify the Viking impact in England have encountered the difficulty of identifying historical Scandinavian influence clearly against an all-too similar Anglo-Saxon background. The Anglo-Saxons, of course, owed much of their cultural, linguistic, and biological inheritance to earlier waves of immigration and cultural influence from the North Germanic world including Scandinavia. A fierce



FIGURE 1.1 North-west England: Viking Age sites and political territories in their regional context. (Courtesy of Michael Athanson, University of Oxford.)

debate continues as to the extent to which incoming Anglo-Saxon peoples and cultures assimilated the native and Romanized Britons who already inhabited Britain.

The challenge of detecting the Viking presence against such a complex existing picture is further complicated by the fact that Vikings themselves did not necessarily all conform to a single biological or cultural stereotype. The word *Viking* comes from the Norse word *Vik* (bay or inlet) and came to refer to a seaborne adventurer or marauder (Brink 2008). To be a Viking, therefore, was more like a reputation or an occupation rather than an innate biological status.

Indeed, few if any of the Scandinavians active in Britain would even have identified themselves primarily as Vikings. Kin and regional affinities were more important than a vague catch-all term that almost certainly has far more meaning today than it had a millennium ago. In the political and religious mêlée of contemporary Britain and Ireland, with hostages, slaves, and mercenaries abounding, it was therefore possible to cross over and adopt Viking culture by choice or by compulsion without ever having been to Scandinavia.

We now understand that Vikings were not exponents of a monolithic, alien culture, but constituted a multiplicity of small groups that interacted with Irish and British societies on a varied and circumstantial basis, often showing considerable aptitude for intermarriage and rapid assimilation. Yet Scandinavian-derived traits persisted, often echoing pagan stories and motifs in art, inscriptions, and material culture.

Hybridity between the Scandinavian diaspora and native cultures is a complex and fascinating area of study across the Viking world from Greenland to Russia, and one that is now being re-shaped by an increasing flow of genetic and isotopic data. This book seeks to highlight and discuss a number of interdisciplinary challenges in bringing together archaeological, biological, historical, and linguistic evidence and emphasise that a nuanced picture, taking account of regional and historical diversity, is essential to understanding this period.

Perceptions of Viking Heritage

Across northern Britain, there are areas, cities, and communities that uphold a particular pride in having Viking heritage. Prominent amongst these are York, the Isle of Man, Orkney, and Shetland. In these places, Vikings are seen as local folk heroes and serve as a basis of a considerable tourist industry. Museum displays, heritage trails, and school history projects emphasise Viking themes. Festivals, perhaps most vividly exemplified by the annual winter ship-burning ceremony of *Up Helly Aa* in Shetland, give colour and drama, and reinforce the place of Vikings at the heart of contemporary local culture, distinctiveness, and communal self-esteem.

Notwithstanding the role of the Victorians and more recent civic enthusiasts in embellishing the facts underlying the growth of popular appreciation, there is a real historical resonance to these re-awoken traditions that enthuse and delight locals and visitors year upon year. Even in areas that make less of a regular habit of festive Viking commemoration, hints of Scandinavian heritage are widely (if imperfectly) understood and appreciated.

Norse place-names and church dedications such as Chester's St Olave (Olav or Olaf) inspire adults and school children to spend time reading about and creating art works alluding to the long-ago Viking presence. Since 2008, every July 29th—St. Olav's Day—or thereabouts, hordes of enthusiasts have trudged the 20 or so miles between West Kirby, Wirral, via Thurston and Neston to St. Olave's Church in Chester. Wirral's own version of Norway's St Olav Pilgrimage from Oslo to Trondheim (approximately 400 miles) was captured in Michael Wood's 2011 BBC series *The Great British Story* (Figure 1.2).

Popular culture has taken the Vikings to heart. Supporters of Football and Rugby League clubs such as Tranmere Rovers and Widnes Vikings wear plastic horned helmets at games and roar their support in a suitably war-like manner, especially when the match is against a club from an area lacking such an ebullient northern heritage. In 2002, a local brewery in Liverpool distributed commemorative beer mats to mark the 1100th anniversary of the arrival of the Vikings—with instructions as to what to do if the Vikings return (Figure 1.3).

The popular name for Liverpoolians, Scousers, is widely held to be of Viking origin, although in actuality this belief is probably misplaced. The potato stew called *Lapskaus* that gave rise to the term is more likely to have been introduced by Scandinavian sailors in more recent centuries (Harding and Vaagan, 2011). Perhaps the most remarkable indication of popular enthusiasm for Vikings has been seen in the responses of over 200 present-day residents of selected areas of north-west England to a call to provide DNA samples (from cheek swabs) as a means of researching the extent to which Scandinavian genetic traits occur in the modern population.

Fifty or more years ago, few places that now identify themselves strongly with a Viking past were noticeably doing so. Scandinavian place-names, archaeological evidence for the Viking presence, and linguistic survivals in speech and dialect, of course, existed as much as they do today (in the latter case even more richly then). It has taken the spread of the mass media, in part responding to the greatly increased profile of archaeological excavation from the 1960s onwards, plus a huge outpouring of academic and popular books and museum exhibitions, to reawaken interest in the Vikings. This has perhaps been assisted by a greater secularisation in modern society which has become less averse to glorying safely in the delights of paganism, epic slaughter, and fantasy heroism, than would more churchgoing-minded former generations with direct experience of devastating conflicts.



FIGURE 1.2 This time they come in peace! Top: St. Olav's Day walkers enter Chester on 29 July 2011 at the end of a 13-mile walk from Neston, Wirral to commemorate Norway's patron saint and help preserve the continued existence of a St. Olave Church in the north-west of England. They are greeted by broadcaster and historian Michael Wood. (Photo courtesy of Dan Kemp.) Bottom: St. Olave's Church, Chester.

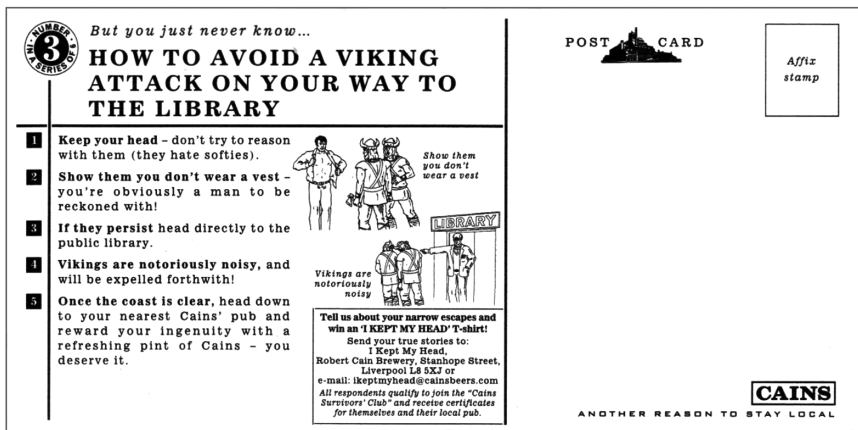


FIGURE 1.3 Beer mat produced by a local brewery in Liverpool to commemorate 1100 years after the arrival of the Vikings. The reverse side indicates what to do if they come back again. (Courtesy of Cain's Brewery, Liverpool.)

Gradually, awareness of a sharing in a Viking past has spread beyond its most visible and well-known centres in Britain and Ireland. This has not always been a smooth or trouble-free process. In Dublin in the late 1970s, considerable controversy and even some violence surrounded the city corporation's plans to redevelop the run-down Wood Quay area of the urban waterfront. Excavations from the late 1960s onward had shown that this area represented a deeply stratified treasure store of archaeology, with astonishingly well-preserved evidence for streets, houses, and quaysides dating back over 1,000 years to the time when Dublin was a Viking kingdom and the largest international trading port in the western seas (Bradley 1984; Johnson 2004). The plan to impose a modernist concrete municipal office development over this area attracted widespread protests and a sit-in prevented progress for a while. Confrontations between protestors and developers resulted in damage to property and even to some (fortunately not too serious) bloodshed. A less-than satisfactory compromise was eventually reached. It allowed the National Museum's archaeologists more time to excavate the site, but in some ways the lasting impact of these dramatic events was on popular perceptions of Irish history.

Led by a clergyman, Fr. F.X. Martin, the pro-Viking Dublin campaign (perhaps ironically) undermined the unquestioning historical assumptions behind the notion of 'The Land of Saints and Scholars.' A national origin myth of Celtic Christian purity underlying the culturally nationalist and politically republican politics of the previous century in Ireland was challenged seriously on a popular level for the



FIGURE 1.4 Thingwall, Wirral. Following popular support and financed by a local company, four special signposts were erected in May 2012. This one at Cross Hill marks the site of one of the leading candidates to be the site of Wirral's Thing. (Photo courtesy of Brian MacDonald.)

first time. Vikings (formerly viewed with disdain as barbarian outsiders and forerunners of Ireland's 750-year foreign occupation and colonisation by Normans, English, and Scots), were reclaimed as prestigious and dynamic forebears by ordinary Dubliners; they became objects of intense interest and have remained so ever since.

In north-west England, the principal geographic subject of this collection of papers, no such dramatic political confrontations have propelled Vikings suddenly into modern consciousness. Nevertheless, from Cheshire to Cumbria, there is a growing appreciation of the value and interest of the distant Viking past and its legacy today. From Thingwall to Ormskirk to Kirkby Lonsdale, people recognise and appreciate that they live in places that owe their names and historic identities to the Viking presence, and this is reflected in posting of heritage signs such as four recently erected on Wirral denoting Thingwall as the 'Assembly Field' (Figure 1.4).

Words in regional and local rural spoken dialects still preserve ancient connections and represent living links to the distant past. In 2001, BBC presenter Julian Richards, in filming the *Blood of the Vikings* programme, encountered in Cumbrian villages phrases probably more understandable to Norwegians than to modern Londoners, such as: 'Did thee come up here lakin when thee was a barn?' (Did you come up here playing when you were a child?).

Across the north-west of England there is local pride in the presence of Viking-Age sculptured stones in parish churches (many of which have recently been brought out of dusty obscurity with better lighting and interpretation panels) and a rush of interest every time an archaeologist or metal detectorist finds something that might reveal the Viking presence. Museum archaeologists and the regional finds liaison officers of the Portable Antiquities Scheme receive more enquiries from members of the public claiming to have found Viking objects than enquiries about almost any other period. Sometimes Viking attributions are correct, but very often the objects turn out to be misplaced from another archaeological period or are modern, but the reports continue to come in nevertheless.

The Wirral and West Lancashire Project for sampling Y-chromosomal DNA in the modern male population (Figure 1.5) took place from 2002–2007.* The results were published in 2008 (Bowden et al. 2008) and in popular form two years later (Harding, Jobling and King 2010). Its connection with the local archaeology of the region was also considered in a specially commissioned article for *British Archaeology* (Griffiths, Harding and Jobling 2008).

Over 200 men from old Wirral or West Lancashire families took part. All had paternal grandfathers from one of these regions. The group included over 80 individuals who possessed surnames that were present in these regions prior to 1600—names such as Totty, Forshaw, Sherlock, Robinson, Raby, Melling, Scarisbrick, Crombleholme, and Altcar. The pre-1600 surname factor was used to help circumvent the large population movements that occurred in north-west England since the Industrial Revolution

* www.nottingham.ac.uk/~sczsteve/survey.htm



(a)



(b)

FIGURE 1.5 DNA testing. (a) West Kirby: Volunteer from Wirral providing a cheek swab for the Wirral survey. (b) Ormskirk: Volunteers from West Lancashire completing appropriate documentation before providing their samples. DNA sampling must follow strict ethical guidelines.

and the tremendous growth of the Liverpool conurbation. By linking genes with modern geography in this way, could characteristic genetic signatures for the Norse settlers from a millennium previously be found? And to what extent? Turi King (Chapter 11) takes another look at the findings and explains the technologies involved.

Ground-breaking advances in population genetics for assessing genetic ancestry and links between populations (Jobling et al. 2013) have attracted considerable interest and debate. Sceptics have also wondered about the time when such traits may have appeared in the population. Researchers have had to be on their guard against attempts to twist their data for racially or culturally divisive ends, although much of the DNA (mitochondrial DNA or from male Y-chromosomes)-tested bears no relation to how people look or behave.

However, the idea that Viking blood and genes are still alive within current generations has a powerful allure to many, and this appeal runs wider than just those whose cheek swab samples revealed signature Scandinavian genetic traits. Others too, including children and adults of biological Viking heritage in other parts of the world, have enthusiastically adopted Vikings as mascots for their communities, sports



FIGURE 1.6 North-west England's modern Viking Navy rowing the *Draken Harald Hårfagre*, the largest contemporary Scandinavian longship (35 m long, 8 m wide) at the Karmøy Viking Festival, 2013.

clubs, and schools. North-west England even boasts its own modern 100-strong 'Viking Navy' of local enthusiasts expertly trained by the Liverpool Victoria Rowing Club on the River Mersey. In June 2013, this formidable group 'raided' Karmøy in western Norway, taking the opportunity to row the largest working Scandinavian longship reconstruction (Figure 1.6).

How, therefore, did such a strong contemporary popular perception of a Viking heritage come about, and to what extent do popular perceptions reflect the reality of a modest, fragmentary, and often frustratingly unclear stock of actual evidence for the Viking presence a millennium ago?

Searching for Vikings in North-West England: The Development of Scholarly Enquiry

Between the Middle Ages and the dawn of modern scholarship, Vikings almost disappeared entirely into the background. Glimpses of their historical reputation and prestige survived in folklore and lingered on in the writings of a tiny number of learned scholars.

William Camden made extensive mention of the Danes in Britain in his *Britannia* of 1586. There was therefore still an awareness of the historical presence of Danes and ‘Northmen’ amongst antiquarians in the 17th and 18th centuries, when discoveries such as the Harkirke silver hoard from Little Crosby (Lancashire, now Merseyside), and the Viking burial mound at Aspatria (Cumberland, now Cumbria), were unearthed (Griffiths, Chapter 2, this volume).

It was, however, the romantic and artistic sensibility of the later 19th century that brought about a fuller resurgence in interest in the history, literature, and language of the Vikings in north-west England (Wawn 2000). The vicar of Aspatria (Cumbria), Reverend William Slater Calverley (1847–1898), brought the Viking Age stone sculpture of Cumberland and Westmorland into public and academic consciousness with a series of papers and observations, and by carving a much-admired sandstone replica of the Gosforth Cross that still stands in Aspatria churchyard. A near-contemporary of Calverley’s and an even more influential and well-connected Old Norse scholar of Liverpoolian origins was William Gershom Collingwood (1854–1932). Collingwood (Figure 1.7), a devoted follower of John Ruskin and a luminary of the Arts and Crafts Movement, was a polymath who resided in the Lake District for much of his life (Townend 2009). An artist, folklorist, historian and field archaeologist, he arguably did more to rescue the Vikings of north-west England from obscurity than anyone else. Collingwood’s exquisite drawings (Figure 1.8) and observations of Viking sculptured crosses and hogback grave markers culminated in his work of 1927: *Northumbrian Crosses of the Pre-Norman Age*, with a follow-up piece on Wirral’s most extensive Viking sculpture group titled *The Early Monuments of West Kirby* (1928).

Collingwood’s field research at upland sites such as Ewe Close and Crosby Ravensworth (Westmorland, now Cumbria) remain important contributions today. His travels in search of Vikings also took him to Iceland in 1897, where he explored the sites where the great sagas were written—painting and drawing many of them (Figure 1.8). He also painted an altar piece in pre-Raphaelite style that remains *in situ* at Borg Church, Borgarnes, the home farm of Egil Skallagrimsson of *Egil’s Saga* (Cavill, Chapter 6). Collingwood’s work is reflected in the *Victoria County History* of Cumberland and Lancashire published between 1901 and 1914 (these volumes were joined nearly a century later by the five Cheshire volumes of 1979–2005. New work on Westmorland is underway at the Centre for North West Regional Studies at Lancaster University).

Perhaps the most significant contribution to studies of the Viking presence in north-west England, which remains profoundly influential today, is the work of historian and place-name scholar Frederick Threlfall Wainwright (1917–1961). A South Lancastrian from Rainford, Wainwright (Figure 1.9) studied at Reading University in the late 1930s under Sir Frank Stenton, the great historian of Anglo-Saxon England and co-author of the EPNS* Cumberland place-name volumes (below).

Wainwright subsequently taught English in a Liverpool school during the Second World War, before going on to lecture at Dundee and St Andrews. He took up studies of Pictish Scotland in his later years before his untimely death, but remained principally throughout his life a historian of Lancashire and Cheshire. His papers titled ‘Wirral Field Names’ (1943), ‘The Scandinavians in West Lancashire’ (1946), and ‘Ingimund’s Invasion’ (1948) drew renewed attention to the nearly forgotten history of the Vikings in Wirral and South Lancashire.

His rediscovery of the importance of O’Donovan’s 1860 translation of the *Three Fragments of Irish Annals* (Griffiths, Chapter 2) remains a seminal contribution. Several of Wainwright’s published and unpublished manuscripts, including ‘The Field Names of Amounderness Hundred’ were collected and

* EPNS: English Place-Name Society.

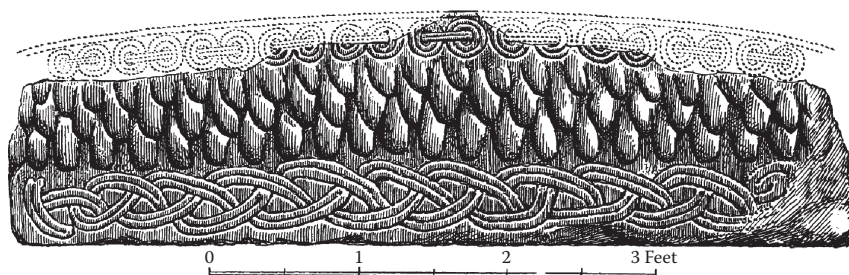


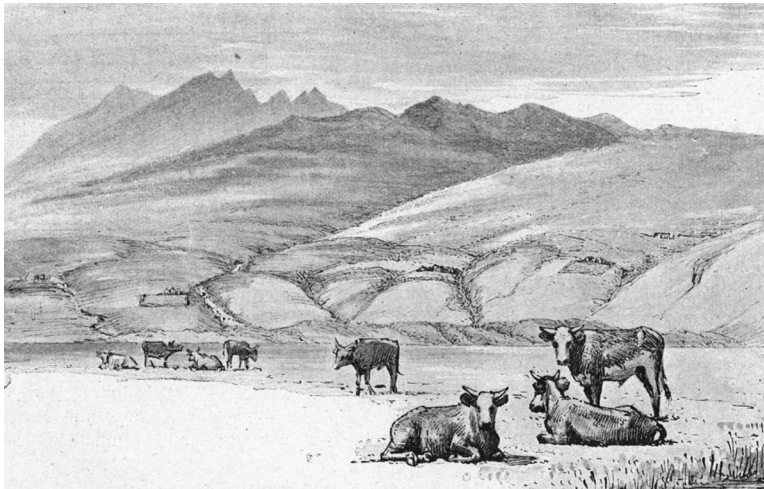
FIGURE 1.7 Top: W.G. Collingwood, antiquarian, born Liverpool 1854, died and was buried at Hawkshead, Cumbria, 1932. Portrait (c. 1881–1885) made by J.A.P. Severn. Courtesy, Ruskin Museum, Coniston, Cumbria. Bottom: Collingwood's sketch of the hogback tombstone at West Kirby.

edited by H.P.R. Finberg in 1975, providing a lasting memorial and perhaps filling the void of the important book on the Vikings in north-west England which Wainwright may have written had he lived longer.

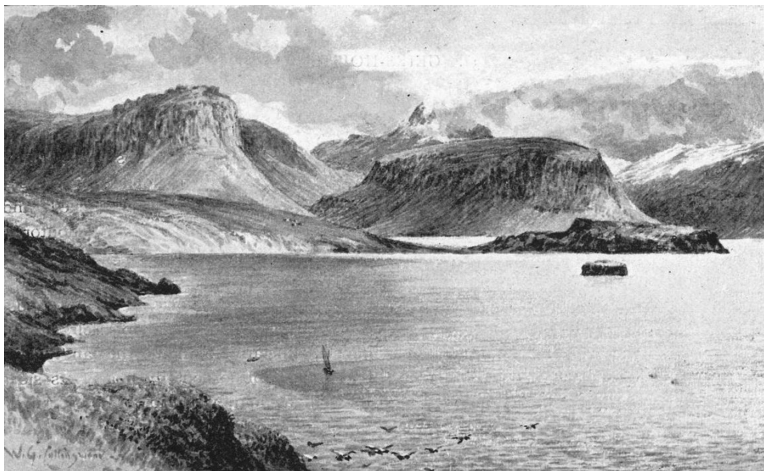
Wainwright's rescue from obscurity of the Ingimund legend (Griffiths, Chapter 2), the subject of his 1948 *English Historical Review* paper, is probably his most memorable achievement. Wainwright's work, together with those of other historical and place-name pioneers mentioned above, provided a basis for later integrated historical and toponymic studies such as those by Gillian Fellows-Jensen (1985), Denise Kenyon (1991), Mary C. Higham (1995), Nick Higham (1993, 2004a, 2004b), and Angus Winchester (1987).

Wainwright's meticulous research on the place-names of north-west England was not their first published coverage, but built upon existing compendia to an unprecedented level of detail. A milestone in onomastic research was achieved earlier in the 20th century by Eilert Ekwall (1877–1964), a professor of English at Lund University in Sweden. His volume on the place-names of Lancashire, published by Manchester University Press in 1922, followed a seminal 1918 paper published in Lund, titled 'Scandinavians and Celts in north-west England.' Ekwall's Lancashire volume remains a monument to toponymic research on north-west England.

It was joined later in the 20th century by volumes produced by the English Place-Name Society, all based on the pre-1974 county boundaries (the post-1974 counties of Merseyside and Greater Manchester were split between Cheshire and Lancashire). Cumberland was covered in two volumes in 1950–1952 by



(a)



(b)

FIGURE 1.8 Some of Collingwood's drawings and paintings of the saga-steads of Iceland. (a) Drawing of Hlida-Endi from Gunnars-holm. (b) Hval-fjord from Brekka. (c) Painting of Borg, Iceland, home of Egil Skallagrimson, Iceland's most famous Viking. (d) Painting of the Thing at Thingvellir. These names are also reflected in place names of north-west England. (*continued*)

A.H. Armstrong, A. Mawer, Sir Frank Stenton, and Bruce Dickins. A.H. Smith, a Reader in Scandinavian studies at London University, wrote about Westmorland for a volume published in 1967. Cheshire was the subject of five volumes published between 1970 and 1981 by another London academic, John McNeal Dodgson (Figure 1.10), who earlier (in 1957) published an influential paper on 'The Background to Brunanburh,' arguing eloquently for Bromborough, Wirral as the battle site.

Dodgson's theory was bolstered by an article titled 'Revisiting Dingesmere' (Cavill, Harding and Jesch 2004). Paul Cavill considers the issues afresh in Chapter 6. The reference in the *Anglo-Saxon Chronicle's* account of the battle to 'Things Mere' is also a reminder of the Thingvatn (*Pingvatn*) of Iceland that may be seen in Collingwood's beautiful painting of Thingvellir (Figure 1.8).

The stone sculptures of north-west England, which were illuminated and illustrated by Calverley and Collingwood in the 19th century, also received attention in the mid to later twentieth century, not least by John D. Bu'Lock, a Reader in Chemistry at the University of Manchester (Figure 1.11) who summarised the Cheshire school of red sandstone sculptured crosses in 1958 and also wrote an important article on the north Wirral coastal site of Meols (Bu'Lock 1958 and 1960; summarised in Bu'Lock 1972).



(c)



(d)

FIGURE 1.8 (continued) Some of Collingwood's drawings and paintings of the saga-steads of Iceland. (a) Drawing of Hlida-Endi from Gunnars-holm. (b) Hval-fjord from Brekka. (c) Painting of Borg, Iceland, home of Egil Skallagrimson, Iceland's most famous Viking. (d) Painting of Thing at Thingvellir. These names are also reflected in place names of north-west England.

New discoveries of stone structures at Neston and Bidston were made by, respectively White (1986; Chapter 12, this volume), and Bailey and Whalley (2004). All previous sculptural studies were subsumed into the British Academy's *Corpus of Anglo-Saxon Stone Sculpture*, which provided the first comprehensive study of Viking Age stone monuments since Collingwood's work. The *Corpus* exists in two volumes for north-west England, separated by a gap of 22 years, on Cumberland, Westmorland, and Lancashire north of the Sands (Bailey and Cramp 1988) and Cheshire and Lancashire (Bailey 2010).*

* Using pre-1974 county boundaries.



FIGURE 1.9 F.T. Wainwright (1917–1961) on an excavation at Dundarg, Aberdeenshire, Scotland, 1951. (Copyright RCAHMS).



FIGURE 1.10 John McNeil Dodgson (1928–1990).



FIGURE 1.11 John Desmond Bu'Lock (1928–1996).

Before the late 20th century there had been almost no archaeological excavations which sought directly to address the Viking presence in north-west England, leaving no parallel to studies of stone sculpture or historical and onomastic research. The excavations of Gerhard Bersu on the ‘Three Viking Graves’ on the Isle of Man at the end of the Second World War created renewed interest in the Viking Age of the Irish Sea coastlands, although these excavations remained unpublished for two further decades (Bersu and Wilson 1966).

It took the urban redevelopments of the 1960s onward to begin to reveal more evidence in north-west England, with significant excavations taking place in Chester, particularly in the 1960s and 1970s (Mason 1985; Ward 1994), and Carlisle in the 1980s (McCarthy et al., Chapter 9). Other excavations, such as at the early medieval ecclesiastical site at Heysham, Lancashire, in 1977 and 1978 (Potter and Andrews 1994), at Workington, Cumbria, in 1996 and 1997 (McCarthy and Paterson, Chapter 8), and at Cumwhitton, Cumbria (Patterson et al. 2014) added to the picture.

Interdisciplinary Approaches in Modern Research

In the last few years, the volume of published literature on the Viking Age in north-west England has increased markedly, with several recent syntheses covering this area (all or in part) as case studies in their own right, as part of the Irish Sea region (for example, Graham-Campbell 1992; Cavill, Harding and Jesch 2000; Graham-Campbell and Philpott 2009; Griffiths 2010), or as part of the wider English picture (Richards 1991; Hadley 2006).

Arising from these studies is a sure and agreed consensus that if we are to make further progress in this field of research, we must approach it as a fundamentally interdisciplinary challenge. Historians, linguists, archaeologists, physicists, chemists, and biologists have begun to come together in a common quest.

With this increase in both the numbers and capabilities of approaches, several researchers have stressed the need for experts in particular disciplines to develop a familiarity of other methods outside their own fields of expertise to develop cohesive, interdisciplinary investigations with successful, well-understood communications. With this in mind, we now provide a brief outline of the spectrum of tools available to researchers of the Viking Age and indicate how an interdisciplinary integrated approach is being successfully applied to learn about the Viking presence.

History, Language, and Names

Vikings who raided and settled in north-west England from the 8th to the 11th centuries left no written records themselves. While large numbers of runic inscriptions are seen on the Isle of Man and in Dublin, they rarely exceed more than a few words. In north-west England, apart from one small inscription (a

futhark or runic alphabet) on a silver brooch from Flusco Pike, Newbiggin, Cumbria, these consist of fragmentary inscriptions from a handful of Cumbrian churches, all of which are relatively late, from the 12th century, and tell us little about the earlier Viking presence (Barnes and Page 2006).

The earliest developed accounts of the period written in the Norse language are the Icelandic sagas that appeared 200 to 300 years later. The sagas purport to describe events in the Viking Age proper, and include, for instance, the story of Egil's participation in the Battle of *Vinheithr*, which was almost certainly the battle we know as *Brunanburh* (Cavill, Chapter 6). The sagas were based on an awareness of earlier events but were written to please an audience in their own time, glorifying the past roles of certain wealthy families important in the 13th century. Most scholars are cautious about fully accepting their embellished and semi-fictionalised accounts of history.

The main contemporary or near-contemporary sources of information on Vikings in north-west England are found in Irish, Anglo-Saxon, and Welsh annalistic sources, which sometimes mention the same events and therefore corroborate each other. The annalists were supportive of their own rulers and patrons and therefore tended to produce oppositional and highly coloured accounts of Viking activity. These are complex sources which tell and re-tell many versions of events. Charters, land grants, and wills of Anglo-Saxon authorship occasionally obliquely allude to the presence of heathen outsiders. To the latter we may add histories of varying reliability composed after the Norman Conquest such as those of William of Malmesbury, Simeon of Durham, and Florence [John] of Worcester.

Therefore, everything we know historically about north-west England in the Viking Age comes from a collection of written records created elsewhere, mostly some time after the events they describe. This inevitably led to some diffusion of detail and potential confusion of orders and locations of events. Far from giving us a consistent record, these records at best offer glimpses of real events separated by sometimes entire decades of silence.

Major events such as ferocious battles involving the topmost ranks of rulers on both sides tend to figure more prominently than the more humdrum events in a day-to-day story. The gaps in the historical record leave us without clear answers to important questions. Were there Viking settlers in north-west England prior to the early 10th century? How united were the Viking settlers amongst themselves? How many Scandinavians settled in this part of England?

As demonstrated by Quanrud and Cavill's contributions (Quanrud, Chapter 5; Cavill, Chapter 6), it is possible to make convincing progress in building a historical picture by combining contemporary sources with later ones and carefully testing their convergences. Histories and poetry compiled at a somewhat later date along with occasional glimpses in saga literature, of course, may owe much to earlier and contemporary (but now disappeared) sources on which their authors base their accounts.

In north-west England, one remarkable source of evidence pointing at survival of a large number of dialect words of Norse origin appears to be the 14th century poem, *Sir Gawain and the Green Knight*. The general setting of the poem is across the northern Anglo-Welsh borderlands. Although the identity of the poet is unknown, a study of the language and dialect of the poem has led many experts to believe that he or she may have come from somewhere in the region of southern Lancashire and Cheshire.

Some have linked the authorship of the story with the Knight of the Garter, Sir John Stanley (1345–1413) of Storeton Hall, Wirral (see, for example, Wilson 1979). Stanley was a knight who served both Richard II and Henry III, and part of the action of the poem takes place in Wirral. The incorporation of a large number of Norse dialect words (Harding 2002, pp. 182–184; Harding and Vaagan 2011; Dance 2013) makes the language of the poem tangibly distinct from Chaucer's *Canterbury Tales* written at around the same time.

As with the order and chronology of historical events, place-names also remain subject to important caveats about their dates and uses to denote Viking presence (Abrams and Parsons 2004). Place-names may be divided into topographic names and habitative names denoting settlement. Their distribution across England is strongly regionalised (Figure 1.12). Apart from those listed in *Domesday Book* of 1086, most settlement names were not recorded historically until the high Middle Ages (14th and 15th centuries) or later.

Common topographic names such as *fell*, *beck*, *dale*, *scar*, and *skerri* reflect the entry of Norse terms into area dialects or those of specialist occupations such as upland farming or seafaring, but lacking the

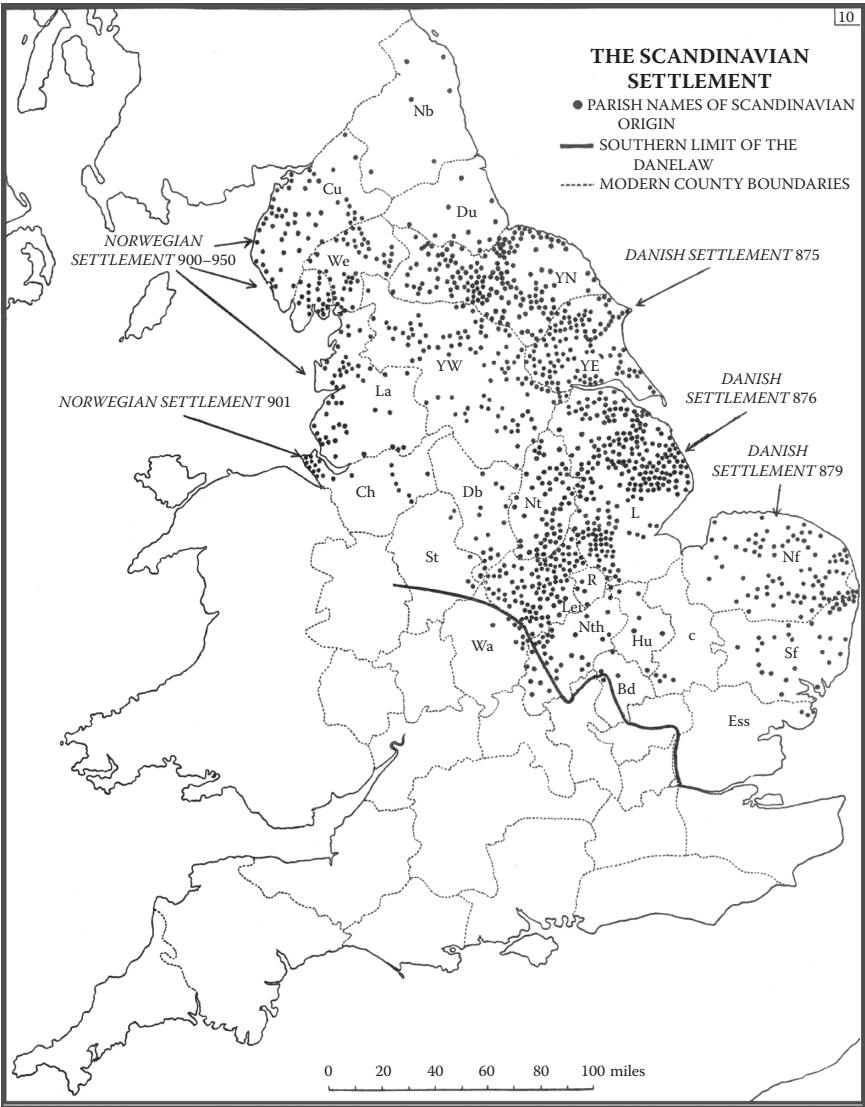


FIGURE 1.12 A.H Smith’s 1956 map of Scandinavian settlement of England (reproduced by permission of the English Place-Name Society). Bd = Bedfordshire. C = Cambridgeshire. Ch = Cheshire. Cu = Cumberland. Db = Derbyshire. Du = Durham. Ess = Essex. Hu = Huntingdonshire. L = Lincolnshire. La = Lancashire. Lei = Leicestershire. Nb = Northumberland. Nf = Norfolk. Nt = Nottinghamshire. Nth = Northamptonshire. R = Rutland. Sf = Suffolk. St = Staffordshire. Wa = Warwickshire. We = Westmorland. YE = East Yorkshire. YN = North Yorkshire. YW = West Yorkshire.

legal status of landholdings, they tend to be cited in documents much later and are therefore harder to pin down to a specific date of origin.

However, patterns of density, even of very minor topographic names, can help identify some areas where Scandinavian speakers were more predominant in the past. Local names for topographic features such as *carr*, *rake*, and *holm* (Harding 2007) are common enough to imply the historical influence of Old Norse extending far beyond just a small, if powerful, Viking elite. The Scandinavian place-names of Cumbria, Lancashire, and Cheshire became fixed and accepted within the medieval English dialects spoken in these areas.

Place-names ending in *-by*, such as are found in profusion in Wirral (Figure 1.13) and the West Derby hundred in south-west Lancashire have traditionally been seen as markers of Danish or Danelaw



FIGURE 1.13 Signpost at Irby, Wirral. All the names including Irby are Norse or Norse influenced.

influence. However the subtly different West Norse *-bær* and East Norse *-býr*, which are also rendered in modern times as *-by*, complicate the picture.

To confuse it still further, plantations of people from eastern England after the Norman Conquest imported the nomenclature of the Danelaw, notably around Carlisle and in the Eden Valley (Cumbria) after William Rufus, the second Norman King of England, took the northern portion of Cumbria from the Scottish Kingdom of Alba in 1092 (Roberts 1990).

Place-names hint at ethnic complexity amongst the settlers. The *Irby* or *Ireby* names of Wirral and Cumbria show that the Irish were distinctive enough within regions already dominated by Viking settlers to attract or demand their own ethnic labels, as indeed were the Scots (Scotby, Cumbria) and possibly also the Franks (Frankby, Wirral^{*}). Most distinctively Irish names in north-west England such as Liscard and Noctorum in Wirral (Old Irish *lios na carriage*: ‘hall at the rock’ and *cnocc Tírim*: ‘dry hillock’) occur amidst Scandinavian habitative and hybrid *-bý* names (Coates 1998).

A number of Gaelic influences on north-west England place-names have been seen as markers of possible Hiberno–Norse influence. The presence of *ærgi* names (a Norse word borrowed from the Gaelic *áirigh*) denoting summer pastures, which are most common in Scotland but by no means unknown in Ireland, has been a case in point. These names occur as *-ergh* or *-argh* in Cumbria and Lancashire, *-eary* on the Isle of Man, and *Arrowe* in Wirral.

Inversion compounds in which the personal name appears second, such as Setmurthy (Cumbria) (Old Norse *saetr*, ‘shieling of Muiredach’) in a word order typical of the Celtic languages, are also seen as signifiers of hybrid Norse–Gaelic influence. Personal names, where recorded historically, add to the picture. Fiona Edmonds has drawn renewed attention to two groups of lands held at the time of the *Domesday Book*, apparently by the same lord named Gilemichel (Edmonds 2009). These included estates grouped under the manor of Strickland, along the course of the Kent leading north-east from Morecambe Bay,

^{*} An alternative explanation for Frankby is the Old Norse personal name *Frakki* with *-bý*.

and another tight cluster near the mouth of the Lune around Lancaster. Gilemichel (*Gille-Míchíl*) is a Gaelic name some specialists argue to be of possible Scots origin, but Edmonds argues that it is just as likely to be Hiberno-Norse name, and suggests that Gilemichel was a descendant of Dublin Vikings who obtained possession of some of the best landing-places on the Morecambe Bay coast.

It is therefore clear that place-names, parts of all of which have Scandinavian elements apparently denoting Viking settlement, are necessarily to be accepted as such without careful background and contextual research. We are fortunate that we have the contemporary record of the *Domesday Book* of 1086 but this is not exhaustive and covers only part of the region.*

A considerable number of 'Viking' place-names in north-west England post-date 1100, and others are later modifications of non-Scandinavian names such as Greasby, Wirral, (appearing in the *Domesday Book* as *Gravesberie*, an exclusively Old English name). Conversely, many of the early estates established by Scandinavian lords appear to have been take-overs of existing settlements and which retained their pre-Viking names. This explains why so many parishes with important collections of 10th and 11th century Scandinavian-influenced sculpture do *not* have Norse place-names. These include English names such as Gosforth, Workington, Dearham, Brigham (Cumbria), Bolton-le-Sands, Halton and Heysham (Lancashire), Bidston, Wallasey, Woodchurch and Walton (Wirral and West Derby); or British names such as Dacre and Penrith (Cumbria). Many of these places already had pre-Viking churches with sculptural traditions. Gaelic-Norse hybrid names such as Aspatia (Cumbria) account for a much smaller number of sculpture sites. Remarkably few sites with Viking period sculpture have unambiguously Norse place-names, such as Crosscanonby and Kirkby Stephen (Cumbria) or West Kirby (Wirral).

Place-names also indicate the names of people who participated in the Viking Age society of north-west England. Although most are men—e.g., Thurstaston, Toxteth, and Ormskirk preserves Þorsteinn, Toki and Ormr—women are present too. For example in Wirral, the former Raynildes Pool and Gonnille Pool at Tranmere appear to preserve Ragnhildr and Gunnhildr (Dodgson 1972, p. 259; Harding 2002, p. 45). The importance of women and how they may have appeared in the Viking Age community in north-west England is considered by Christina Lee in Chapter 4, and the work reviewed has been inspirational to re-enactment groups seeking to re-create the Viking world within local communities.

Surnames recorded in later historical sources and still in use today can also assist in the search for Vikings in the British Isles in two ways. First, many people possess surnames that appear to have origins in Scandinavia such as Scholes (*skáli*—hut or hall), Holmes (*holmr*—island), and Kirk (*kirkja*—church). Kay Rogers (1991 and 1995) recorded many of these names. Modern spellings, however, do not necessarily reflect a name as originally bequeathed by a paternal ancestor who was a Scandinavian because patrilineal surnames as we now know them did not come into being until the 14th or 15th centuries. They merely reflect that Scandinavian or a Scandinavian-influenced dialect may have been spoken so it is almost impossible to trace a person's (paternal) line back before those centuries.

Prior to the introduction of patrilineal surnames, a person's surname usually reflected his or trade or place of birth or origin. For example we find in a 14th century document (Peet 1991) a list of inhabitants in West Lancashire contributing toward the stipend of a priest at Ormskirk that includes surnames such as de Burscogh (from Burscough), de Ellerbek (from Ellerbeck), de Kirkeby (from Kirkby), de Leyland (from Leyland), and also names like le Salter (the Salter).

Intriguingly, in Wirral we find rental records recorded in St. Werburgh's Abbey in Chester for year 1398 for Richard Hondesson, Agnes Hondesdoghter, Johanne Hondesdoghter (Great Sutton), and Mabilla Raynaldesdoghter (Childer Thornton), indicating that people still used the patronymic 'son of' and 'daughter of' conventions of surnames still used in Iceland today (Harding 2002, p. 189).

Secondly, the possession of an *old* surname (present in an area for hundreds of years but without a requirement for Viking roots) in a particular area can be used as a criterion for volunteer selection in a search for genetic ancestry in a region since surnames are also passed along the paternal line (King et al. 2006; King and Jobling 2009a, 2009b).

* *Domesday Book's* coverage of north-west England is partial and uneven. Cheshire has a full survey that includes Lancashire south of the Ribble (Sawyer and Thacker 1987); the rest of Lancashire extending into southern Cumbria was included in the county inventory for Yorkshire (Farrer and Brownbill 1906). The northern parts of Cumbria that were not yet fully parts of England in 1086 were not covered at all.

Such a criterion was used for a recent survey of genetic ancestry in the male population of Wirral or West Lancashire where the possession of a surname that was present in those areas before 1600 was used as a requirement for participation in the survey (Bowden et al. 2008). A similar surname criterion had been applied for volunteer recruitment in a genetic survey of the Orkneys (Wilson and Goldstein 2000). The important link between surnames and genetics is considered further by Turi King later in Chapter 11.

Archaeology

Archaeology is the material record of the past in the forms of artefacts, structures, and evidence for the contemporary agriculture, landscape, and the environment. Bearing in mind that we are dealing with people whose cultural signatures changed and assimilated with those they settled amongst, we struggle at times to identify a clear Scandinavian signature in the material cultures of settlements.

Secondary indicators such as fragments of fine metalwork stolen in raids on Irish monasteries (implicitly by Vikings) become just as important as primary cultural references from the Scandinavian homeland. The great silver hoard of 7500 coins and around 1000 pieces of hack silver found at Cuerdale (Lancashire) in 1840, is emblematic of the Viking presence in north-west England (Graham-Campbell 1992, 2011), yet it contained only a minority of objects of unambiguously Scandinavian origin. Its contents show a combined monetary and bullion economy (Kershaw, Chapter 10) and their origins reflect Viking activity in Frankia, England and Ireland, along with links to markets in the Arabic world, extending as far east as modern Afghanistan.

Other contemporary silver hoards from north-west England and beyond echo this picture in less numerous but equally important ways. Directly imported Scandinavian material does exist in north-west England, for example, oval brooches from burials at Cumwhitton and Claughton Hall (Griffiths, Chapter 2; Lee, Chapter 4), but most metalwork objects including those found in burials are hybrids produced in the Viking settlements in Ireland and Britain, reflecting the convergent traditions of incoming and host cultures.

Perhaps the most distinctive object of this genre is the ringed pin, a slender bronze dress pin with a small hinged ring, of which 19 complete or partial examples were found at the Viking Age beach market of Meols in Wirral (Figure 1.14; Griffiths, Chapter 2) with further examples from Chester and from Viking burial sites at Aspatria and Cumwhitton, Cumbria.

Of course, we must remain mindful of how much evidence has not survived. Most wooden objects and architecture, for instance (that must have accounted for the vast majority of structures at the time), have decayed entirely. The glorious decorative schemes on the surviving late Viking Age wooden stave churches in Norway, at Borgund, Urnes, and Hopperstad give glimpses of what we have possibly lost in terms of Viking architecture.

Remarkably few Viking Age buildings have been documented in north-west England, and these tend to survive only as postholes and beam slots in the ground (Philpott, Chapter 7). Some structures from 10th and 11th century Chester such as the two-storey warehouse-type dwellings from Lower Bridge Street (near St. Olave's Church) may well have served the needs of Viking merchants but their detectable remains uphold few demonstrably Viking traits.

Stone sculpture presents our most graphic record of Viking culture in north-west England. Viking-period stone sculpture includes complete and fragmentary standing crosses, recumbent grave slabs, and the long-house-shaped monuments known as hogbacks that were probably grave markers although few when found were directly associated with burials. The depictions of Norse mythological scenes, most graphically at famous examples such as on Gosforth Cross 1 in Cumbria (Jesch, Chapter 3) give us vital insights into the ways in which Viking heritage was used to establish new patterns of authority and loyalty in the context of landholding and the conversion to Christianity in the 10th century.

Metal detecting, an important addition to the means of generating new archaeological evidence, has been available to the general public since the 1970s. Although illegal for use on protected monuments, metal detecting is a widely popular hobby and has almost certainly been attempted by someone at some stage on nearly all of the open farmlands, commons, and beaches across the region. The challenge that



FIGURE 1.14 Ringed pins from Meols. Photo: ©Meols Project, National Museums Liverpool.

metal detecting poses to archaeological knowledge relates to the completeness and veracity of reporting on the locations and contexts of discoveries.

Until 1997, reporting facilities for metal detectorists were limited, depending on the availability of local museum staff to identify any finds presented. Few had time for anything more than cursory responses. 1997 saw the beginning of a more organised and responsive national service, the Portable Antiquities Scheme (PAS) that has reached out to metal detectorists in an attempt to create a more sympathetic and constructive dialogue.*

The process of establishing mutual understanding between metal detectorists and archaeologists has not always been a smooth one. The locations reported by finders have sometimes been inaccurate, sometimes deliberately so. Attempts have been made to deceive experts with fake Viking objects. A silver Thor's hammer purportedly found in Cumbria was recently dismissed as a fake.

More convincing was a worn silver penny of Anlaf Guthfrithson of York, bearing a raven (ostensibly dating from 939 to 941), allegedly found on the edge of the Dee Estuary near Neston (Wirral). The forgery was so clever that it was not possible to discern by visual means alone any reason to doubt it was genuine. It was duly noted as a Viking find on national databases and a number of scholars (the present authors included) erroneously included it as such in several publications. It took laboratory-based metallurgical analysis in 2011 by scientists at Harwell, UK using a technique known as electron probe microanalysis (EPMA) to prove that the coin could only have been made in modern times.†

Despite these contradictions, metal detecting has produced some spectacular and genuine results as major discoveries such as the Huxley hoard of Viking silver arm rings (2004), and the Barrow and

* <http://www.finds.org.uk>

† http://www.nottingham.ac.uk/~sczsteve/WirralNews_2Mar2011.pdf

Silverdale hoards (2011 and 2012) have been reported and their find spots investigated (Kershaw, Chapter 10). Perhaps the most archaeologically rewarding amongst these reports was the discovery by metal detecting of two composite Scandinavian oval brooches in a field near Cumwhitton, Cumbria, in 2004. This led to an excavation, uncovering a richly furnished Viking cemetery with six graves (Paterson et al. 2014; Griffiths, Chapter 2).

Metal detecting has yet to lead us to discover a fully-fledged Viking Age settlement site in north-west England. However, this is by no means an improbable prospect if metal detectorists and archaeologists work together constructively. Just such a discovery was made in Anglesey, North Wales, in the early 1990s. A report of coins and Viking hack silver found by a responsible and knowledgeable metal detectorist in a field near Llanbedrgoch and Red Wharf Bay on the eastern side of the island led the National Museum of Wales to investigate the site archaeologically.

A defended enclosure of 1.2 hectares in extent was revealed, rich in Viking Age artefacts suggesting trading activity, with buildings, burials, middens, and metal-working hearths. The research project is ongoing 20 years later (Redknap 2000; NMGW 2012). The possibilities and priorities for the archaeology of north-west England are summarised in a recent publication of an English-Heritage sponsored Research Framework (Newman and Brennand 2007): this gives guidance to curators and developers in pursuing a well-informed and research-based strategy in planning and conservation. However, chance discovery will always be a major factor, and we can never rule out a surprise.

Human Sciences and Population Genetics

Archaeology gives conditional and limited access to the human and environmental remains of the past. This is highly dependent on preservation conditions. Radiocarbon dating can be used to provide absolute dates for any organic matter encountered in the course of excavation. Although it was invented in the 1950s, its utility has only recently become widespread due to the introduction of accelerated mass spectrometry (AMS), a technique that allows a date to be obtained from a much smaller sample of material than required previously. So far, very little relevant work of this type has been carried out on material from north-west England.

Isotope analysis is now gaining prominence in archaeological research (McCarthy et al., Chapter 9). The ratio of ^{87}Sr and ^{86}Sr strontium isotopes in teeth and rib bones and a proportion of the ^{18}O oxygen isotope were used to identify Viking Age remains from an excavation at Islandbridge, Dublin (Sikora et al. 2011). Four separate warrior-style male burials in central Dublin, excavated in the early 2000s, were subjected to isotope analysis, which suggested that two were of Scandinavian origin and the other two were more likely to have originated somewhere in northern Britain (Simpson 2005; Griffiths 2010, p. 76).

A similar approach was used also to identify the remains of a woman found near Doncaster in South Yorkshire as originating from Scandinavia (Speed and Walton-Rogers 2004; Budd 2004). O-isotope analysis has been at the cornerstone of an investigation of 37 mutilated skeletons recently discovered in the grounds of St. Johns' College, Oxford (Pollard et al. 2012). All the bodies discovered were males of fighting age. O-isotope analysis has shown a strong marine food diet commensurate with raiders from Scandinavia, with one man possibly from north of the Arctic Circle. AMS dating of the bodies suggests they probably date to the 10th century and may date to the early 11th century if the effects of their fish-based diet are taken into account (known as the Marine Reservoir Effect, this factor skews dates by several years or decades too early for humans and animals with high marine protein intakes). The Oxford burials have been tentatively linked therefore to the Saint Brice's Day massacre: the killing of Danes in England on 13 November 1002 ordered by King Æthelred the Unready, which is known to have produced a massacre in Oxford.

The past two decades have seen tremendous advances in our ability to use genetic methods to probe our past. Genetic methods have now become major tools in the search for the extent of Viking ancestry of populations (see, for example, Harding, Jobling and King 2010).

Until the development of modern genetic tools, genetic analysis had been limited to the study of the distribution of 'phenotypic' characteristics, that is, the distribution of physical characteristics that are

manifestations of the DNA of an individual. Such characteristics include blood group types that for years have been considered markers of population ancestry (Cavalli-Sforza et al. 1994).

Blood groups are genetically determined but unfortunately for ancestral studies are generally poorly discriminating and widespread in many populations. They are now regarded as not sensitive enough to use as markers for ancestry. Other such characteristics are skin pigmentation, stature, and facial shape, with oval faces supposedly representing people of Scandinavian origin (Geipel 1969; Figure 1.15). These features are, however, complex, poorly understood, and widely distributed across northern Europe.

Eye colour and hair colour have also been considered distinctive markers. The highest proportions of people with fair or blond hair and blue eyes appear to be found in central Sweden, Norway, Finland, the Baltic states, the northern parts of Poland, and the former German Democratic Republic with a reported 70 to 80% possessing these phenotypes (Beals and Hoijer 1965; Frost 2006; Figure 1.16). Particular physical impairments or diseases are more prevalent in Scandinavia than elsewhere in Europe but could be said to track the distribution of Scandinavian genetic influence.

One of these is Dupuytren's syndrome or digitopalmar contracture (Figure 1.17). This condition can affect people usually over 50 years of age and involves tightening of the elastic tissues in the palms of the hands, making it difficult and in some cases impossible to flex the fourth and fifth fingers. The distribution of people across Europe with this condition suggests a possible Viking origin. The Icelandic sagas even contain evidence of this connection. The *Longer Saga of Magnus of Orkney* tells about a man called Sigurdr who, after a pilgrimage to the shrine of Holy Magnus, allegedly had a complete recovery; his fingers became supple and flexible and could be put to any use (Whaley and Elliot 1993).

Although complex, the genetic bases behind all these traits are becoming much better understood (Sulem et al. 2007; Eiberg et al. 2008). For example, using only 24 targeted DNA variants, it is now possible to predict eye and hair colour; this test has already been useful in forensic casework (Walsh et al. 2013).

Although 'sporadic' cases of Dupuytren's syndrome occur, many are inherited in a simple way, suggesting a single causative gene acting in a dominant manner—if a person receives the gene for the contracture from one parent and the gene for non-contracture from the other, he or she will have the contracture. In other words, only one copy of the gene is needed to convey Dupuytren's syndrome. A recent study of one family has suggested that DNA on chromosome 16 is involved. Nonetheless, the detailed genetic cause of this condition is still largely unknown.

Because of the extra complexity of using genetic variation connected to physical differences among people, scientists commonly focus on the plentiful 'neutral' variations in DNA that have no discernible effects on a person who carries them but can provide evidence about ancestors. This technique considers characteristic features or 'markers' such as the occurrence of particular bases (G, A, T, or C) at particular locations within DNA. However, the patterns of such variants in most of individuals' DNAs are difficult to interpret because every generation undergoes reshuffling or recombination that blurs the signals of ancestry.

However, two parts of the DNA we receive from our parents are not reshuffled. Most of the DNA on the Y chromosome is passed down from father to son essentially unchanged except for rare mutations that can occur over the course of hundreds or thousands of years. Similarly, the DNA in the mitochondria is passed down the maternal line over very many generations with little or no change. Variation can occur only when there is a change or mutation and such changes are very rare. Thus by characterising the type of DNA a man has in his Y chromosome and in his mitochondria, we can obtain specific information about his paternal and maternal ancestry. With women we can also enquire about ancestry but only along the maternal line as women do not have Y chromosomes.

It is possible to characterise a person's Y chromosome DNA or mitochondrial DNA through patterns of the DNA sequence that determines his or her paternal Y chromosomal haplogroup or maternal mitochondrial haplogroup. The DNA is extracted (usually from a mouth swab taken from the inside the cheek; Figure 1.5) and is then transferred to a preservative solution. The sample is then analysed in a laboratory using a technique known as the *polymerase chain reaction* (PCR) followed by analytical procedures specific for detection of the presence of particular bases at characteristic locations.

A Dane from Jutland whose facial features according to Geipel “remind one irresistibly of his forerunner, Tollund Man”



An Iclander from Reykjavik



A Norwegian woman



A German innkeeper's daughter



A Holstein farmer



A Swedish Lap



FIGURE 1.15 ‘European facial types’ suggested nearly 50 years ago as a way of indicating ancestry. (Source: Geipel, J. (1969) *The Europeans: An Ethnohistorical Survey*. Longman, London. With permission.) Individual image captions as in original. Images reproduced with permission from Paul Popper Limited/Getty Images (top left, middle right, bottom left and right) and Mats Wibe Lund (top right). We have also reprinted (middle left) “A Norwegian woman” which was attributed to K.G. Rayson in Geipel’s original publication, having been unable, despite considerable effort, to find the copyright holder. Proper acknowledgment will be made by the editors for the use of the material to the copyright-holder, if such information comes to light in any future reprint of this work.

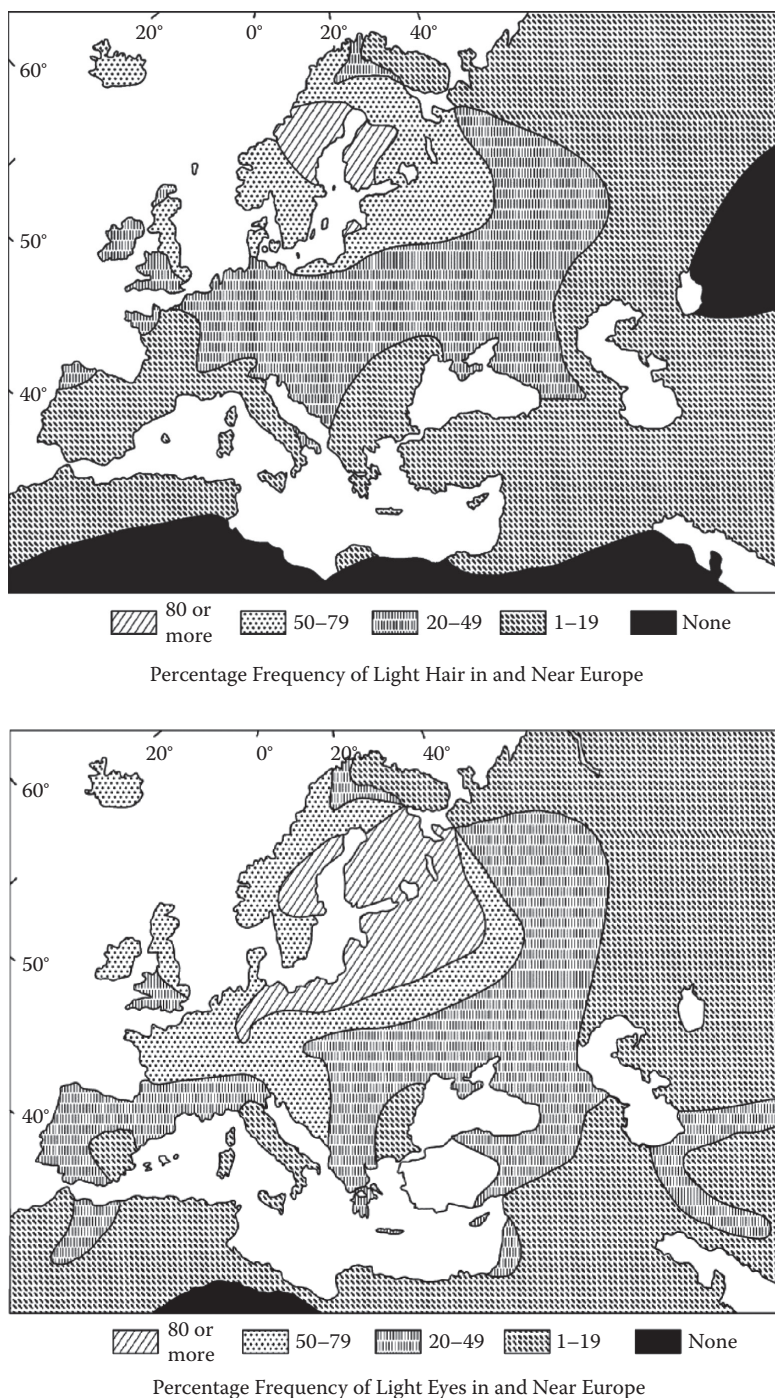


FIGURE 1.16 Distribution of people with light or fair hair (top) and light or blue eyes (bottom) in Europe, showing the highest densities for both in the Baltic Sea region. (Source: Beals, R.L. and Hoijer, H. (1965). *An Introduction to Anthropology*, 3rd ed. Reproduced with permission from Pearson Education.)



FIGURE 1.17 Dupuytren's contracture. A tightening of elastic tissue beneath the skin makes it difficult, sometimes impossible, to extend one or more of the fingers of a hand (commonly the fourth and fifth fingers). This condition is common in Scandinavia and in parts of Britain influenced by the Vikings. (Sources: www.med.und.edu/users/jwhiting/duprr.html and Dr. Jeff Whiting, St. Louis School of Medicine, US.)

The locations of bases allow a person's Y chromosome and/or mitochondrial haplogroup to be ascertained. These are represented by letters or letters and numbers, e.g., I1a, R1a1, KxR1^{*} for Y-chromosomal DNA and H1, J, etc., for mitochondrial DNA. Certain haplogroups are common in modern Scandinavia and the Baltic Sea region—and regions settled by the Vikings. These include Y chromosomal R1a1 and other subhaplogroups within the general haplogroup known as K (Chapter 11, Figure 11.4), and I1a.

Sometimes the notation can be confusing to the non-specialist as the convention used has undergone several changes. For example, the notations 1, R1b, R1b3, R1b1b2, and R-M269 have all been used to represent the same Y chromosome haplogroup. Even though a common consensus appears to have been reached (Jobling et al. 2013) the notation may change again as the resolution of the method improves.

The distribution of haplogroups in different regions will differ, and one can use statistical methods to compare populations. As the resolution of the method increases, an increasing number of 'hobbyists' seek to make conclusions about their own individual DNA haplogroups based on information obtained from the many commercial testing companies now in existence although at best this can give only an idea as most people have matches that spread over a wide area[†] – and it only tests for one (for women) or two (for men) ancestral lines among the tens of thousands an individual might have (Thomas 2013). As a tool for comparing *populations*, the method is by contrast considerably more powerful.

The best way—if it were possible—of assessing Viking ancestry would be to analyse populations of DNA haplogroups from bones and remains of people known from isotope dating or other methods to be from the Viking Age period (Hagelberg et al. 1989) and compare them with DNA from the bones of people dated to the Viking Age in Scandinavia. However this is currently impossible because sample sizes from regions of the British Isles are small or non-existent, the DNA may be of poor quality and prone to contamination, and there may well be no descendants of such people living today.

In the future it may, nonetheless, be possible to obtain a sufficient number of samples from Viking Age human remains in Scandinavia that could provide important control data for any modern-based population study. Erika Hagelberg, Maja Krzewinska, and coworkers have been exploring the possibilities based on the Schreiner collection of the University of Oslo (Krzewinska and Hagelberg 2013).

The complementary or alternative approach is to analyse the DNA from modern people from particular areas in the British Isles and compare the distributions of haplogroups of these areas with haplogroups from different regions of Europe and beyond. This is also not without difficulties as these distributions can be unrepresentative of past populations. This concept needs methods of inference, making use, for

^{*} The 'xR1' following the notation for haplogroup K means 'excluding' the large haplogroup within it known as R1; see, for example, Bowden et al. (2008) and King (Chapter 11).

[†] The resolution of the method is becoming increasingly more powerful as new SNPs continue to be discovered.

example, of the link between surnames and Y-DNA (King and Jobling 2009). As noted above, this link has been used to powerful effect for studies in Orkney (Wilson and Goldstein, 2000), Wirral, and West Lancashire (Bowden et al. 2008). Work is continuing across northern England following, for example, the trail of the Norse 'hogback tombstones' into North Yorkshire and the Northern Danelaw.

No modern assessment of Viking ancestry of a region would be complete without a full consideration of the genetic messages from the past. In the penultimate chapter in this volume, leading expert Turi King (Chapter 11) assesses in detail the present thinking—the balance between ancient and modern DNA analyses—describing the usefulness of how the Y-chromosome can be linked with surnames in Britain and how we can link genes with modern geography.

A detailed summary of the findings of the Bowden et al. (2008) study is also presented. Bowden found a significant pointer toward Norse ancestry with up to 50% of the total DNA mixture or 'admixture' in the sampled male populations of both Wirral and West Lancashire being Scandinavian in origin.

Since the publication of Bowden's work (2008), the resolution of the technique has improved considerably as more and many more mutations or single nucleotide polymorphisms (SNPs) are discovered; SNPs can define subhaplogroups within main haplogroups. Some particularly useful subhaplogroups and their relative distributions across Europe and Asia have been considered in two papers by Myres et al. (2011) and Busby et al. (2012). These studies appear to show, for example, a Germanic origin for the R1b subgroup known as R1b-U106 found in high levels in England but not in Wales, Scotland, or Ireland. Conversely there are high levels of the Celtic subgroups R1b-M222 and R1b-S145 in Wales, Scotland, and Ireland, but not in England. This appears to be consistent with substantial, if not overwhelming, settlement of Germanic invaders into what we now know as England during the early medieval period, and evidently addressing the debate we noted at the start of this chapter. Advances in the differential dating of the SNP mutations underlying haplogroups such as these should greatly assist historians in identifying when these migrations took place.

Indications of ancestry in terms of a person's 'whole DNA' including his or her autosomal DNA are now also possible and the *National Geographic Magazine*-based Geno 2.0 project* can assess the population 'group' to which a person's DNA from all his or her recent ancestors (going back several generations) is closest. Although Wirral and West Lancashire have been important test beds for a genetic search for Viking ancestry, Penrith in Cumbria (90 volunteers) was included in an earlier study (Capelli et al. 2003) along with the Isle of Man (62 volunteers), both areas with strong evidence of significant Viking presence from place-names and archaeology of significant Viking presence. Llangefni in Anglesey (80 volunteers) which had also yielded evidence of nearby Viking settlement at Llanbedrgoch (Redknap 2000).

The surname criterion was not used for volunteer recruitment in these earlier studies; only a two-generation criterion (paternal grandfather known to be from the region) was used instead. Significant ancestry was found in Penrith (approximately 37% of the DNA in the admixture of the modern population) and Isle of Man (approximately 40%) with a much smaller result (10%) in Llangefni.

Perhaps surprisingly, genetic studies in Ireland have thus far failed to find evidence of significant Scandinavian ancestry there (McEvoy et al. 2006), despite the acknowledged wealth and power of the Viking Kingdom of Dublin in the 10th and 11th centuries. Archaeological and place-name evidence for a Scandinavian presence in the Irish landscape surrounding Dublin is not unknown, but is surprisingly meagre compared to findings in the city itself (Griffiths 2010, pp. 58–59).

The Present and Future of Viking Studies

Human genetics research projects such as those described by Bowden et al. (2008) and the associated media coverage achieved prominence with the 2001 BBC2 *Blood of the Vikings* series and its popular accompanying book (Richards 2001). These events have given Viking studies a much greater public

* The Genographic 2.0 Beta Project, <https://genographic.nationalgeographic.com/>

profile than they attained previously. No longer merely the concerns of small numbers of academics, museum professionals, and local history societies, the Vikings have become the objects of enduring public and media fascination.

Because the most successful genetic surveys were conducted in north-west England, and notably in Wirral and south-west Lancashire (Bowden et al. 2008; Harding, Jobling and King 2010; King, Chapter 11) further raised the profiles of Viking genes and Viking heritage within the region. Major discoveries such as the Cumwhitton Viking cemetery (Cumbria) and the Huxley hoard in 2004, together with the Barrow-in-Furness and Silverdale hoards in 2011 (Kershaw, Chapter 10) have served to 'top up' and reinvigorate the general public's fascination with the ancient past, even as the previous discovery begins to fade a little from public consciousness.

Major finds from other archaeological periods, such as the highly ornate bronze Roman parade helmet found by a metal detectorist at Crosby Garrett (Cumbria) in 2010 and since sold at auction to a private buyer for over £2.3 million (despite a major public campaign to raise enough funds to buy it for the Tullie House Museum in Carlisle) further emphasise the importance and vulnerability of the region's archaeological heritage, contributing to a widespread hunger for more information.

Perhaps the most vibrant areas of Viking studies today result from the ways in which interdisciplinary research is being made available and accessible to the general public through reconstructions, exhibitions, re-enactments, and restorations of sites and monuments. A highly successful exhibition in 1990 at Liverpool Museum titled 'A Silver Saga: Viking Treasure from the North-West' gave an unprecedented platform to Viking studies in north-west England and made a focus of the Cuerdale hoard (Philpott 1990).

An associated academic conference addressed historical and archaeological issues on an interdisciplinary basis for the first time (Graham-Campbell 1992). More recently, major high profile events such as the voyage of the reconstructed *Sea Stallion of Glendalough* Viking warship from Denmark to Dublin in 2007–2008 attracted thousands of spectators, widespread media coverage, and was partnered by a major museum exhibition (Johnson 2004). Viking-themed exhibitions have become regular occurrences such as at the National Museums of Scotland (2012–2013), the National Museum of Denmark (2013), the British Museum (2014) and the Museum für Vor-und Frühgeschichte, Staatliche Museen zu Berlin (2014–2015).

The restoration and re-display of stone sculptures in churches provide a number of examples of local heritage initiatives (White, Chapter 12). The restoration of the neglected collection of Viking sculptured stones at the Charles Dawson Brown Museum at St Bridget's Parish Church in West Kirby (Wirral) is a case in point. The museum created in outbuildings used by the former parish school in 1892 in memory of a local antiquarian and benefactor was closed and neglected for many years and its contents gathered dust. A restoration and re-display project generated a marked upsurge of interest in the early history of West Kirby. The re-opening took place on the weekend of 12 July 2013* with nearly 1000 enthusiastic locals attending (Figure 1.18).

The Chester conference that gave rise to this volume was conducted with two future aims in mind. It sought to build a consensus around interdisciplinary studies for the Viking period in north-west England and beyond. It also sought to make Viking studies as accessible and welcoming to the widest range of public and professional interests as possible. This is far from being a watering-down of academic probity. There will always be a place for education, training, and higher research in our field, combating sometimes ill-founded theories based on a lack of genuine insight. Yet the editors believe fundamentally that without well-informed popular support there can be no future for Viking studies in this region or elsewhere. We therefore present the following chapters both as contributions to interdisciplinary research and as bases for better public understanding and enlightenment.

* <http://www.westkirbymuseum.co.uk/>



(a)



(b)

FIGURE 1.18 (a) Local people enthuse at the re-opening of the Charles Dawson Brown Museum at St. Bridget's Church, West Kirby (July 2013). St. Bridget's is the home of a significant collection of Viking Age stone sculpture including a hogback tombstone. (b) Hogback cake—a comestible replica of the St. Bridget's hogback stone made in November 2012 to mark the 120th anniversary of the opening of the museum in 1892.

REFERENCES

- Abrams, L. and Parsons, D.N. (2004). Place-names and the History of Scandinavian Settlement in England, in Hines, J., Lane, A. and Redknap, M., Eds. *Land, Sea and Home: Settlement in the Viking Period*. Society for Medieval Archaeology Monograph 20, Maney, Leeds, UK, 379–431.
- Armstrong, A.M., Mawer, A., Stenton, F. et al. (1950–1952). *The Place-Names of Cumberland*, English Place-Name Society XX–XXII, Cambridge, UK.
- Bailey, R.N. and Cramp, R. (1988). Cumberland, Westmorland, and Lancashire North-of-the-Sands, *British Academy Corpus of Anglo-Saxon Stone Sculpture* Vol. II, Oxford University Press, Oxford, UK.
- Bailey, R.N. (2009). The Sculptural Background in Cemetery, In Graham-Campbell, J.A. and Philpott, R., Eds. *The Huxley Hoard: Scandinavian Settlement in the North West*. National Museums Liverpool, UK, 24–28.

- Bailey, R.N. (2010). Lancashire and Cheshire, *British Academy Corpus of Anglo-Saxon Stone Sculpture* Vol. IX. Oxford University Press, Oxford, UK.
- Barnes, M. and Page, R.I. (2006). *The Scandinavian Runic Inscriptions of Britain*. Institute of Nordic Languages, Uppsala, Sweden.
- Beals, R.L. and H. Hoijer (1965). *An Introduction to Anthropology* (3rd edition). Macmillan, New York.
- Bersu, G. and Wilson, D.M. (1966). *Three Viking Graves in the Isle of Man*. Society for Medieval Archaeology Monograph 1, London.
- Bowden, G.R., Balaesque, P., King, T.E. et al. (2008). Excavating Past Population Structures by Surname-Based Sampling: The Genetic Legacy of the Vikings in North-West England. *Molecular Biology and Evolution*, 25, 301–309.
- Bradley, J., Ed. (1984). *Viking Dublin Exposed*. O'Brien Press, Dublin.
- Brink, S. (2008). Who were the Vikings? In Brink, S. and Price, N., Eds. *The Viking World*. Routledge, New York, 4–7.
- Budd, P. (2004). Combined O- and Sr-isotope analysis of dental tissues. *Medieval Archaeology*, 48, 61–63.
- Bu'lock, J.D. (1958). Pre-Norman Crosses of West Cheshire and the Norse Settlements around the Irish Sea. *Transactions of the Lancashire and Cheshire Antiquarian Society*, 68, 1–11.
- Bu'lock, J.D. (1960). The Celtic, Saxon and Scandinavian Site of Meols in Wirral. *Transactions of the Historic Society of Lancashire and Cheshire* XII, 1–28.
- Bu'Lock, J.D. (1972). *Pre-Conquest Cheshire*. Cheshire Community Council, Chester.
- Busby, G.B.J., F. Briseghehi, P. Sánchez-Díaz, E. et al. (2011). The peopling of Europe and the cautionary tale of Y-chromosome lineage R-M269. *Proceedings of the Royal Society London B*, 279, 884–892.
- Cavalli-Sforza, L.L., Menozzi, P., and Piazza, A. (1994). *The History and Geography of Human Genes*. Princeton University Press, Princeton, NJ.
- Cavill, P., Harding, S.E., and Jesch, J. (2000). *Wirral and its Viking Heritage*. English Place-Name Society, Nottingham, UK.
- Collingwood, W.G. (1927). *Northumbrian Crosses of the Pre-Norman Age*. Faber and Gwyer, London.
- Collingwood, W.G. (1928). Early Monuments of West Kirby. In Brownbill, J., Ed. *West Kirby and Hilbre: A Parochial History*, Henry Young, Liverpool, 14–26 (reprinted in Cavill et al. 2000).
- Coates, R. (1998). Liscard and Irish Names in Northern Wirral. *Journal of the English Place-Name Society* 30, 23–26.
- Dance, R. (2013). 'Tor for to telle': Words Derived from Old Norse in *Sir Gawain and the Green Knight*. In *Multilingualism in Medieval Britain (c. 1066–1520)*, J.A. Jefferson and A. Putter, Eds. Medieval Texts and Cultures of Northern Europe. Brepols, Turnhout, 41–58.
- Dodgson, J. McN. (1957). The background to Brunanburh. *Saga Book of the Viking Society* 14, 303–316 (reprinted in Cavill et al. 2000).
- Dodgson, J. McN. (1972). *The Place-Names of Cheshire Part IV*. The English Place-Name Society, Cambridge University Press, Cambridge, UK.
- Edmonds, F. (2009). History and Names. In Graham-Campbell, J.A. and Philpott, R., Eds. *The Huxley Hoard: Scandinavian Settlement in the North West*. National Museums, Liverpool, 3–12.
- Eiberg, H., Troelsen, J., Nielsen, M. et al. (2008). Blue eye color in humans may be caused by a perfectly associated founder mutation in a regulatory element located within the HERC2 gene inhibiting OCA2 expression. *Human Genetics*, 123, 177–187.
- Ekwall, E. (1922). *The Place-Names of Lancashire*. Manchester University Press, Manchester.
- Farrer, W. and Brownbill, J. (1906). *Victoria History of the County of Lancaster*, Vol. 1. London.
- Fellows-Jensen, G. (1985). *Scandinavian Settlement Names in the North West*. C.A. Reitzels Forlag, Copenhagen.
- Frost, P. (2006). European Hair and Eye Color: A Case of Frequency-Dependent Sexual Selection? *Evolution and Human Behaviour*, 27, 85–103.
- Geipel, J. (1969). *The Europeans: An Ethnohistorical Survey*. Longman, London.
- Graham-Campbell, J.A., Ed. (1992). *Viking Treasure from the North West: The Cuerdale Hoard in its Context*. National Museums and Galleries on Merseyside, Liverpool, UK.
- Graham-Campbell, J.A. (2011). *The Cuerdale Hoard and Related Viking-Age Silver and Gold from Britain and Ireland in the British Museum*. British Museum Press, London.
- Graham-Campbell, J.A. and Philpott, R.A., Eds. (2009). *The Huxley Hoard: Scandinavian Settlement in the North West*. National Museums Liverpool.
- Griffiths, D. (2010). *Vikings of the Irish Sea: Conflict and Assimilation AD 790–1050*. History Press, Stroud.

- Griffiths, D., Harding, S.E., and Jobling, M.A. (2008). Looking for Vikings in North-West England. *British Archaeology* 103, 18–25.
- Griffiths, D., Philpott, R.A., and Egan, G. (2007). *Meols: The Archaeology of the North Wirral Coast*. Oxford University School of Archaeology Monograph Series 68, Oxford.
- Hadley, D.M. (2006). *Vikings in England, Settlement, Society and Culture*. Manchester University Press, Manchester.
- Hagelberg, E., Sykes, B., and Hedges, R. (1989). Ancient Bone DNA Amplified. *Nature*, 342, 485.
- Harding, S.E. (2002). *Viking Mersey*. Countyvise, Birkenhead UK.
- Harding, S.E. (2007). The Wirral Carrs and Holms. *Journal of the English Place-Name Society* 39, 45–57.
- Harding, S.E., Jobling, M.A., and King, T.E. (2010). *Viking DNA: The Wirral and West Lancashire Project*. Countyvise, Nottingham University Press, Birkenhead.
- Harding, S.E. and Vaagan, S. (2011). *Vikingblod: spor av vikinger i Nordvest-England*. Genesis Forlag, Oslo.
- Higham, M.C. (1995). Scandinavian settlement in north-west England, with a special study of *Ireby* names. In Crawford, B.E., Ed. *Scandinavian Settlement in Northern Britain*, Leicester, 195–205.
- Higham, N.J. (1993). *The Origins of Cheshire*. Manchester University Press, Manchester.
- Higham, N.J. (2004a). Viking-Age Settlement in the North Western Countryside: Lifting the Veil? In Hines, J., Lane, A., and Redknap, M., Eds. *Land, Sea, and Home: Settlement in the Viking Period*. Society for Medieval Archaeology Monograph 20, Maney, Leeds, 297–311.
- Higham, N.J. (2004b). *A Frontier Landscape: The North West in the Middle Ages*. Windgather Press, Bollington, UK.
- Jobling, M.A., Hollux, E. Tyler-Smith, C. et al. (2013). *Human Evolutionary Genetics*, 2nd ed. Taylor & Francis, New York.
- Johnson, R. (2004). *Viking Age Dublin*. Irish Treasures Series, Town House, Dublin.
- Kenyon, D. (1991). *The Origins of Lancashire*. Manchester University Press, Manchester, UK.
- King, T.E., Ballereau, S.J., Schürer, K.E. et al. (2006). Genetic Signatures of Co-Ancestry within Surnames. *Current Biology* 16, 384–388.
- King, T.E. and Jobling, M.A. (2009a). What's in a name? Y chromosomes, surnames and the genetic genealogy revolution. *Trends in Genetics* 25, 351–60.
- King, T.E. and Jobling, M.A. (2009b). Founders, Drift, and Infertility: The Relationship between Y-Chromosome Diversity and Patrilineal Surnames. *Molecular Biology and Evolution*, 26, 1093–1102.
- Krzewinska, M., and Hagelberg, E. (2013). The Archaeogenetics of the North Atlantic Region. In Bill, J., Ed. *Returning to Gokstad: The Art and Science of Revisiting Monumental Burials in Scandinavia*. Århus University Press.
- Newman, R. and Brennand, M. (2007). The Early Medieval Period Research Agenda In Brennand, M., Ed. *Research and Archaeology in North-West England: An Archaeological Research Framework for North-West England*, Vol. 2. Archaeology North West, 73–94.
- NMGW (2012). <http://www.museumwales.ac.uk/en/blog/?month=2012-08>
- Paterson, C., Parson, A.J., Newman, R.M., Johnson, N., and Howard Davis, C. (2014). *Shadows in the Sand: Excavation of a Viking-age cemetery at Cumwhitton, Cumbria*, Lancaster Imprints 22, Lancaster.
- Peet, G. (1991). Inhabitants of Ormskirk, Scarisbrick with Hurlton, Bickerstaffe, Burscough with Marton, Westhead with Lathom and Skelmersdale who promised to contribute to the stipend of the priest of the altar of Our Lady of Ormskirk, 1366. *Ormskirk District Family Historian*, 1, 2–6.
- Philpott, F. (1990). *A Silver Saga*. National Museums and Galleries on Merseyside, Liverpool, UK.
- Pollard, A.M., Ditchfield, P., Piva, E. et al. (2012). *Oxford Journal of Archaeology*, 31, 83–102.
- Potter, T.W. and Andrews, R.D. (1994). Excavation and Survey at St Patrick's Chapel and St Peter's Church, Heysham, Lancashire 1977–1978. *Antiquaries Journal* LXXIV, 54–134.
- Redknap, M. (2000). *Vikings in Wales: An Archaeological Quest*. National Museums and Galleries of Wales, Cardiff.
- Richards, J.C. (2001). *Blood of the Vikings*. Hodder and Stoughton, London.
- Richards, J.D. (1991). *Viking Age England*. English Heritage, Batsford.
- Roberts, B.K. (1990). Late -by names in the Eden Valley, Cumbria. *Nomina* XIII, 25–40.
- Rogers, K.H. (1991). *Vikings and Surnames*. Ebor Press, York.
- Rogers, K.H. (1995). *More Vikings and Surnames*. Local History Press, Nottingham.

- Sawyer P.H. and Thacker A.T. (1987). Domesday Survey. In Harris B.E. and Thacker A.T., Eds. *A History of the County of Chester*, Vol. 1. Victoria History of the Counties of England, Institute of Historical Research, London, 293–370.
- Sikora, M., O'Donnabhain, B., and Daly, N. (2011). Preliminary Report on a Viking Warrior Grave at War Memorial Park, Islandbridge. In Duffy, S., Ed. *Medieval Dublin XI*. Four Courts Press, Dublin, 170–184.
- Simpson, L. (2005). Viking Warrior Burials in Dublin: Is This the Longphort? In Duffy, S., Ed. *Medieval Dublin VI*. Four Courts Press, Dublin, 11–62.
- Smith, A.H. (1967). *The Place-Names of Westmorland*. English Place-Name Society, Cambridge University Press, Cambridge, UK, 17–18.
- Speed, G. and Walton, R.P. (2004). A Burial of a Viking Woman at Adwick-le-Street, South Yorkshire. *Medieval Archaeology*, 48, 51–90.
- Sulem, P., Gudbjartsson, D.F., Stacey, S.N. et al. (2007). Genetic Determinants of Hair, Eye, and Skin Pigmentation in Europeans. *Nature Genetics* 39, 1443–1452.
- Thomas, M. (2013). To Claim Someone Has 'Viking ancestors' is No Better than Astrology, *The Guardian*, 25 February. <http://www.guardian.co.uk/science/blog/2013/feb/25/viking-ancestors-astrology>
- Townend, M. (2002). Viking Age England as a Bilingual Society, In Hadley, D.M. and Richards, J.D., Eds. *Cultures in Contact: Scandinavian Settlement in England in the Ninth and Tenth Centuries*. Brepols, Turnhout, 89–101.
- Townend, M. (2009). *The Vikings and Victorian Lakeland: The Norse Medievalism of W.G. Collingwood and His Contemporaries*. Cumberland and Westmorland Antiquarian and Archaeological Society, Carlisle.
- Victoria History of the Counties of England: Cumberland*, 2 vols. (1901–1905); *Lancashire*, 8 vols. (1906–1914); *Cheshire*, 5 vols. (1979–2005), London.
- Wainwright, F.T. (1943). Wirral Field Names. *Antiquity* 27, 57–66.
- Wainwright, F.T. (1946). The Scandinavians in West Lancashire. *Transactions of the Lancashire and Cheshire Antiquarian Society* 58, 71–116.
- Wainwright, F.T. (1948). Ingimund's Invasion. *English Historical Review* 63, 145–169.
- Wainwright, F.T. (1975). The Field-Names of Amounderness Hundred. In Finberg, H.P.R., Ed. *Scandinavian England*. Phillimore, Chichester, 229–279.
- Walsh, S., Liu, F., Wollstein, A. et al. (2013). The HIrisPlex System for Simultaneous Prediction of Hair and Eye Colour from DNA. *Forensic Science International: Genetics* 7, 98–115.
- Wawn, A. (2000). *The Vikings and the Victorians: Inventing the Old North in 19th Century Britain*. Brewer, Woodbridge.
- Whaley, D.C. and Elliot, D. (1993). Dupuytren's disease: A legacy of the north? *Journal of Hand Surgery (British and European volume)*, 18, 363–367.
- White, R.H. (1986). Viking Period Sculpture at Neston, Cheshire. *Journal of the Chester Archaeological Society*, 69, 45–58.
- Wilson, E. (1979). Sir Gawain and the Green Knight and the Stanley Family of Stanley, Storeton and Hooton. *The Review of English Studies*, 30, 308–316.
- Wilson, J. and Goldstein, D.B. (2000). Correlation between Y chromosomes and surnames in Orkney. *American Journal of Human Genetics*, 67, 926–935.
- Winchester, A.J.L. (1987). *Landscape and Society in Medieval Cumbria*. John Donald, Edinburgh.

