Offa's Dyke Journal

A Journal for Linear Monuments, Frontiers & Borderlands Research

Volume 7

Edited by Howard Williams

Aims and Scope

Offa's Dyke Journal is a peer-reviewed venue for the publication of high-quality research on the archaeology, history and heritage of linear monuments, frontiers and borderlands. The editors invite submissions that explore dimensions of Offa's Dyke, Wat's Dyke and the 'short dykes' of western Britain, including their life-histories and landscape contexts. *ODJ* will also consider comparative studies on the material culture and monumentality of land divisions, boundaries, frontiers and borderlands from elsewhere in Britain, Europe and beyond from prehistory to the present day. We accept:

1. Notes and Reviews of up to 3,000 words
2. Interim reports on fieldwork of up to 5,000 words
3. Original discussions, syntheses and analyses of up to 10,000 words

ODJ is published by JAS Arqueología, and is supported by the University of Chester and the Offa's Dyke Association. The journal is open access, free to authors and readers: http://revistas.jasarqueologia.es/index.php/odjournal/. Print copies of the journal are available for purchase from Archaeopress with a discount available for members of the Offa's Dyke Association: https://www.archaeopress.com/

Submissions: howard.williams@chester.ac.uk

Front cover: Detail of John Speed's map of Flintshire from 1610 showing the earliest cartographic depiction of Offa's Dyke (private collection)

Offa's Dyke Journal

A Journal for Linear Monuments, Frontiers and Borderlands Research

Volume 7 for 2025

Edited by Howard Williams

Rhwydwaith Clawdd Offa's Dyke Collaboratory

University of Chester

Offa's Dyke Journal

A Journal for Linear Monuments, Frontiers and Borderlands Research

Volume 7 for 2025

Offa's Dyke Journal 7 2025, 30–60

The Welsh Marches and the PAS: Possible 'productive' sites and their significance

Pauline M. Clarke

The Portable Antiquities Scheme has resulted in the recording of over 1.8 million artefacts, predominantly of metal and from all archaeological periods, which have been found across England and Wales. This corpus has contributed greatly to academic research, one strand of which is the identification of early medieval 'productive' sites. These are potential areas of activity, and this data is particularly pertinent for the identification of early medieval sites, as other evidence – for structures and ceramic use, for example – is scarce. This article seeks to identify such sites across modern borders in the Welsh Marches, an area of little developer-led archaeology. This cross-border approach is still relatively uncommon in archaeology but one which is called for in many current Research Frameworks. The article identifies the sites and discusses their possible purpose and significance, including their relationship to Offa's and Wat's Dykes.

Keywords: Marches, early medieval, site, artefact, border, Wales, Dykes

Introduction

The Portable Antiquities Scheme (PAS) has generated a repository of 1.8 million recorded items (at the time of writing), and this database has been used extensively in many research projects; currently there are over 1000 of these listed by the PAS. This largely voluntary scheme, created in 1997 and administered now by the British Museum through local officers, encourages anyone who has found artefacts to report them to a local Finds Liaison Officer (FLO) and thus have them added to this freely available database. While the scheme is open to all, in practice most of the items are reported by metal detectorists, who actively seek artefacts: in 2023, 95% of finds came from this group (Lewis 2024: 5). Research utilising this data has resulted in, for example, the Viking and Anglo-Saxon Landscape and Economy project (VASLE), which used detected finds to develop a new national database for finds from the early medieval period across the country, from which 65 'productive' sites were identified and discussed (Richards *et al.* 2008). VASLE used selective data which was additional to the PAS information for specific sites, which this study does not. Some studies use the PAS data to create typologies, such as Martin's (2015) work on early medieval cruciform brooches, of which over half of the examples were drawn from PAS records. Many studies support the identification and exploration of specific sites such as the Viking burial ground at Cumwhitton, Cumbria, excavated following the finding and responsible reporting of a pair of Viking-style oval brooches (Paterson *et al* 2014: 2).

For western Britain in the early medieval period particularly, evidence for structures, burials and occupation sites is scarce, particularly due to the acidic nature of the soils.

Offa's Dyke Journal volume 7 2025
Manuscript received: 5 June 2025
accepted: 16 August 2025

Carver (2019, 77) considered that there was no evidence at all available for the period in Wales, while at the same time highlighting the potential contribution of the PAS data to the understanding of this period. Set against these challenges of survival and recovery, is it then possible to use the PAS data for an area of the Welsh Marches to identify 'productive' sites from the early medieval period? Is the study of such sites indeed valid in the area, as most of the work to date has been undertaken on sites in the south and east of England, with limited studies also on Continental sites (Pestell and Ulmschneider 2003)?

This article seeks to identify early medieval sites in the west and discuss their potential character and relevance, and any relationship that they may have to the major linear earthworks of the region. Offa's and Wat's Dykes are important features in the landscape of the Marches, and there are still many unanswered questions relating to their purpose and construction. One such question is that of who constructed them: Cyril Fox, for example, considered that local labour was conscripted by minor thegns as part of their obligation to the Mercian overlord (Feryok 2013: 185). Others considered a labour force and supporting suppliers that moved in from outside of the area, such as Hill, who envisaged a civilian force, and others who considered that this may have been an army at rest in a relatively peaceful period (see Ray and Bapty 2016: 216). Does analysis of the finds provide any evidence towards resolving this question?

Using the PAS data only, five sites have been identified on the English side of the modern border, and a further three sites in Wales are considered. These were identified originally as part of work undertaken for a doctoral thesis, but are considered here in light of their contribution to the broader debate on the character and function of 'productive' sites (Clarke 2023a and b). These sites displaying characteristics of occupation, burial and commerce across the early medieval period but remain a focus of debate regarding their significance and function.

The data used in this study is drawn only from the PAS database, as was the doctoral research. It is acknowledged that artefacts are found under other conditions, but most work on 'productive' sites has been driven by the activity of metal detectorists (Ulmschneider and Pestell 2019: 1). Each site is discussed below and considered in light of their contribution to understanding populations in the early medieval period in an area often underrepresented in research.

'Productive' sites

First identified as part of studies into the distribution of coins across the country, 'productive' sites were originally defined as those which yielded a particularly high number of early medieval coin finds (Blackburn 2003: 20). This period has little material culture in comparison to, for example, the Roman era, and concentrations of coins were seen as one of few reliable indicators of activity (Blackburn 2003: 20). This definition was later to be expanded to cover any artefact from the period. It has been problematic

from the start, not least in the terminology, as the sites are 'productive' to metal detectorists and others today, rather than 'productive' in original purpose (Willmott and Wright 2021: 183). Probably the best accepted definition, and the simplest, is one proposed by Ulmschneider – that they are 'places... that produce large quantities of coin and metalwork finds' (Pestell 2012: 562). Further, it is not possible to use the absolute numbers of objects as a measure of activity in the west.

Many other sites have been identified only after considerable numbers of artefacts have been recovered; the detectorist working at Little Carlton, for example, found over 800 small finds which they correctly reported to the FLO; a previous detectorist operating in the same area had not done this, delaying investigation of the site and removing data from the study (Willmott and Wright 2021: 183). He had also, unlike many detectorists, collected all materials, including iron and non-metallic items such as glass, forming a useful and complete record (Willmott and Wright 2021: 183). Perhaps the best-known site identified in this way is the Viking winter camp at Torksey, Lincolnshire. The 'amazing quantity' – thousands after eventual excavation - of pieces found by two detectorists was the first indication that the site may have been significant when hundreds of these detected finds were first reported to the PAS (Hadley and Richards 2021: 89, 91). This scale may be appropriate in parts of the country which were more heavily populated in the period; however, a lower level of proof may be appropriate when considering less well researched areas, or those in which preservation is not as favourable. As an example, Shropshire has 9,397 PAS records for all periods, compared with Lincolnshire which has over 82,000[1].

There are many reasons for this disparity; the success of the PAS in different areas, the geography, topography and agricultural regimes of the Marches, popularity of detecting and so on. In response to this apparent lack of artefacts in the west, Redknap (2022) has recently identified early medieval sites of importance in South Wales which had yielded as few as two finds. His approach was to consider the value of the finds themselves as opposed to just the sheer volume of them. It should be remembered too that the site at Cumwhitton, mentioned above, was identified following the detection of just two brooches (Paterson *et al* 2014: 2, 5).

It should be mentioned though that Griffiths (2003) debated the validity of the concept of 'productive' sites in the west. The majority identified to date are in the south and east of the country, and are often located inland, whereas those few which are known from the west tend to be in coastal locations (Griffiths 2003: 62–3). However, in a study of 'productive' sites in East Anglia, Pestell (2004: 35; 2012: 560) did identify some coastal areas which he tentatively considered may be 'Type A' *emporia*, (seasonal, gateway locations) or alternatively early *monasteria*, considering the type of material found in some cases to be evidence for literacy. In contrast, Willmott (2022: 33) did not consider that ecclesiastical

[1] These are records which are amber or green flagged on the PAS database and are therefore visible to researchers, while those with red flags are only accessible to those working for the scheme. Theoretically the red records should be comparatively low in number

activity has a defined material culture. Willmott and Wright (2021: 2) stated that the period during which Little Carlton was fully occupied – the seventh to ninth centuries AD – was one that should be primarily approached through the material remains as little other evidence exists. Griffiths (2003: 72) contends too that there are fewer candidates for such sites in the west overall as a result of the lower circulation of metalwork from the seventh to tenth centuries: this study will though identify some inland sites, contrary to what is known currently about 'productive' sites in the north-west. The identification of any such sites is a valuable contribution to knowledge of settlement and other activity in the period set against the current low level of understanding.

The sites identified in the east of England also seem to exist for a relatively short period of time. In Blackburn's (2003) study, much of the coinage was concentrated across a period covering AD 700–750 at sites such as Hollingbourne and 'South Lincolnshire'. It is worth noting too, that this study identified sites from with as few as twelve or fourteen coins, not large numbers (Blackburn 2003: 35–6). Indeed, *emporia* in particular were considered to have been a short-lived part of the development of the economy, succeeded after a gap of a century by *burhs*, and smaller market sites were thought to be of no value in their eventual development (Palmer 2003: 48). Do areas with no visible evidence for a large economy still have markets in the west and are they important to the area?

The question here is thus twofold. Firstly, is it valid to look for 'productive' sites in the Wales and the west of England? The work of Redknap would suggest that this is possible, albeit at a much lower threshold than has been used in the south and east of England to date. Given the overall scarcity of artefacts, this is an approach that is possible and valid given supporting evidence such as place names and adjacent sites. Secondly, do these sites exist for a short period, as they seem to in the east, or are they persistent here? Evidence will be presented for longevity of some of the areas identified.

The Welsh Marches

The Welsh Marches, a term that has been in use for centuries, is not a homogenous region, and was not in the past any more than today. The exact shape of this liminal area along the border between modern England and Wales fluctuated greatly through the fifth to eleventh centuries, according to the prevalent polities in action at any one time. The western border with Wales was subject to many redefinitions over the period under consideration, although it is not always clear by how much. Even Offa's Dyke, the most obvious territorial marker in the landscape, was possibly only relevant for a comparatively short period of time in its original form (Ray and Bapty 2016: 250–251). Cheshire, a key component of the Marches landscape, actually shows variance between the east and west of the county, displaying characteristics which differ markedly, enough to conclude that the county faced towards Wales in the west and away from it in the east (Sidebottom 2020: 25). For simplicity here, though, the whole of the 1974 county is included, as are Shropshire and Herefordshire, for which similar arguments could

probably be made. The Welsh counties adjacent to the modern border – Flintshire, Denbighshire and Powys, along with Wrexham Borough, will also be included in the study. The southern counties of Worcestershire and Gloucestershire again display considerable variance and are better understood historically; thus, they will not be included in this survey.

Much of the area is high land – the Clwydian Range and the Shropshire Uplands are over 300m high in many places, generally considered to be the limit of viable agriculture and therefore metal detecting (Brown 2004: 5–6; Rowley 1972: 22). While most of Cheshire consists of the low, fertile area known as the Cheshire Plain, in the east of the County are the foothills of the Peak District. The underlying geology of Shropshire and Herefordshire is complex, resulting in varied soil types, although, like Cheshire, most are better suited to grazing rather than arable production (Stanford 1980: 33; Stoertz 2004: 10). This limits detection as practitioners generally prefer to search on ploughed soils, and this may be a contributing factor to the lower number of overall finds from the area (Robbins 2014: 30). These are also not soils which facilitate the preservation of organic remains, building wood and bone, that may indicate settlements in other areas in the south and east of England. The Marches today are sparsely populated, characterised by small, dispersed settlements with the exception of a few larger towns, and lower overall development (DEFRA 2021: 10). Thus, developer-led archaeology is not undertaken on the same scale here as in other, more populated areas of England and Wales, and the use of artefact data to support investigation is therefore essential. Using the distribution of finds categorised by the PAS as early medieval, that is produced from approximately AD 410–1066, it is possible to identify 'productive' sites from this period throughout the Marches, and provide an initial interpretation as to their function.

Table 1 is a summary of records (not number of artefacts) against each period on the PAS database: the low values for the lithic periods are perhaps to be expected, due to the dominance of metal detected finds, and as the PAS does not routinely record modern (post 1900) items, the weight of evidence may well be reduced in these periods. Of the remaining periods the early medieval is considerably underrepresented, especially when considered against high volumes of Roman and Medieval finds. The national picture too is differential, for example, the number of finds from the period in Cheshire is currently 153, but for Norfolk is 7,380 (as of June 2025). As hinted above, there are a variety of factors which explain this discrepancy. The agriculture in the west of England and the east of Wales is not generally arable, and ploughing is attractive to the detectorist because of the propensity for new objects to be brought within range of the detector after each ploughing event. Much of the land in the area is high, which further limits agricultural activity, and the soils are not generally conducive to preservation. It is human nature to return to areas which yield rewards, and the east of England is more likely to do this, for the reasons above and perhaps also because the population at the time was greater – the Domesday Book records that East Anglia was the most densely populated area at the time (Pestell 2004: 16). The author notes that the detectorists of

the north-west of England considered a rally in the east to be the 'Holy Grail' of metal detecting. The VASLE project, outlined above, mapped the 'hard' constraints in land access, such as National Trust land and National Parks, all of which feature in the study area. There are less tangible affects, such as the willingness of the detectorist to record, the staff that the FLO has available, and their areas of interest, which all play a part in an object being recorded (Robbins 2014: 35).

Table 1: Number of records by period on the PAS database for the study area

PAS Period	Number of records	Percentage of total
Palaeolithic	1659	<0.2
Mesolithic	10,971	1.02
Neolithic	23,281	2.17
Bronze Age	14,356	1.34
Iron Age	59,569	5.26
Roman, Greek and Roman Provincial and Byzantine	413,279	38.46
Early Medieval	43,261	4.04
Medieval	258,844	24.09
Post Medieval	227,768	21.19
Modern	6736	0.64
Unknown	16,992	1.59
TOTAL	1,074,716	100

Studies vary immensely in the number of finds that are considered criteria for further exploration. As already highlighted, the Viking Camp at Torksey was identified when metal detectorists declared hundreds of finds from a dense concentration, while Mark Redknap's (2022) recent study utilised as few as two finds to support the identification of sites in South Wales, considering that the conditions and lower overall material count in the west meant that even two finds indicated activity in some form in South Wales. Daubney (2022: 74) developed a criteria based on number of artefacts, where 0–10 finds indicates an area of low activity, 11–20 medium and over 21 as high: the type of finds in his study was a significant factor in decoding and understanding their importance, rather than mere numbers which are known to be low in Wales for the reasons discussed, and this approach will be adopted here for the areas in modern Wales (Redknap 2022: 77).

Methodology

The data for the early medieval period in the counties to be studied was downloaded from the PAS database in March 2025, see Table 2. The lower number of finds from

the modern Welsh counties is apparent in this list. When compared with the eastern counties, as hinted at already, even the English counties recorded low numbers of finds for the period. This is, as discussed, a function of many factors including the higher ground and lack of ploughed land; in Cheshire, for example, grazing pasture is the dominant land use (DEFRA 2018). Of course, there is always the occurrence of non- or under-reporting, but this a factor common to all areas, and does not affect the identification of the areas considered here, although it may mean that other sites cannot be similarly identified (Robbins 2014: 34–35). It is possible to demonstrate that, in spite of the low numbers of finds, in percentage terms the study area is comparable to other Counties on the east of England, and in similar adjacent areas such as Derbyshire, which also has mixed land use and geology (Clarke 2023a: 80–84).

Table 2: Number of records and artefacts recorded for each PAS area in the Marches (* includes the contents of two hoards)

County	No. of records	No. of finds
Cheshire West and Chester, Cheshire East, Warrington	156	186*
Shropshire with Telford and Wrekin UA	211	215
Herefordshire	102	131
Flintshire	12	12
Denbighshire	12	12
Wrexham Borough	14	14
Powys	9	9
TOTAL	516	579

The identification and interpretation allocated to the artefacts by the FLO is used here, except if there is a specific reason for not doing so, perhaps new scholarship which may revise a date given for an object type. Generally, though, a review of the data gives little reason to revise the FLO's entry. The cultural style of the find is a broad categorisation, used only for early medieval finds; the applicable groups here, from the list of controlled vocabulary on the PAS database, are Anglo-Saxon, (Anglo)-Scandinavian or British. In addition, the terms 'Anglo-Saxon' and 'Viking' will be used here, merely as a convenient and recognisable shorthand for two groups of people of differing geographical origin and temporal impact on Britain.

There are two further notes about the data that should be presented. Firstly, the locations used by the PAS are often the actual find location, accurate in some cases to a 1m square. However, in order to protect some sites, a 'known as' location can also be given, which is often a nearby settlement or a parish, and this is used here. Although this prevents close identification of the actual location, it does not affect the theoretical basis of the study. Any maps here, in which finds are plotted to their accurate location, are

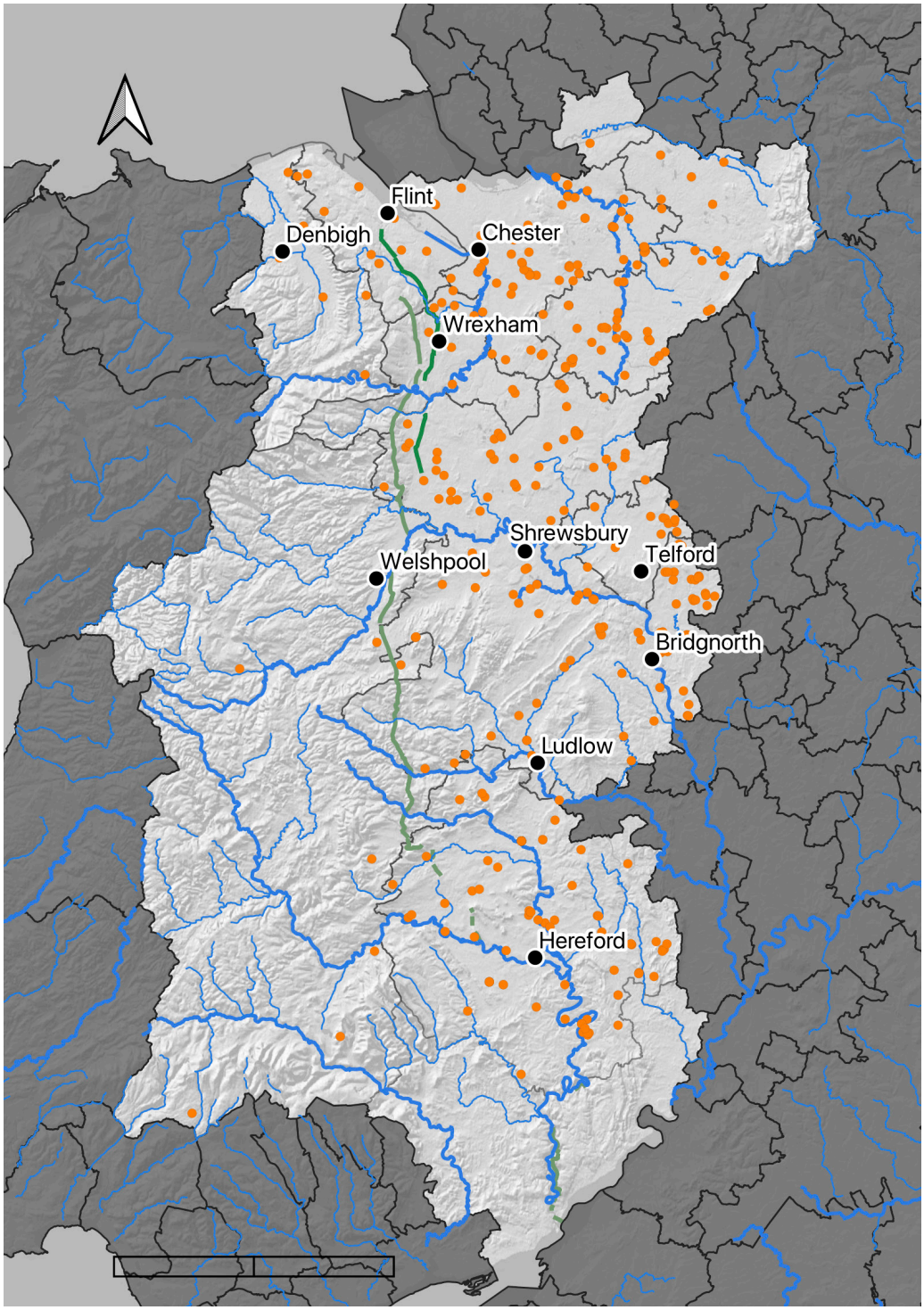

Figure 1: The Welsh Marches, showing Offa's Dyke (light green) and Wat's Dyke (dark green), and the general distribution of early medieval finds (orange dots)

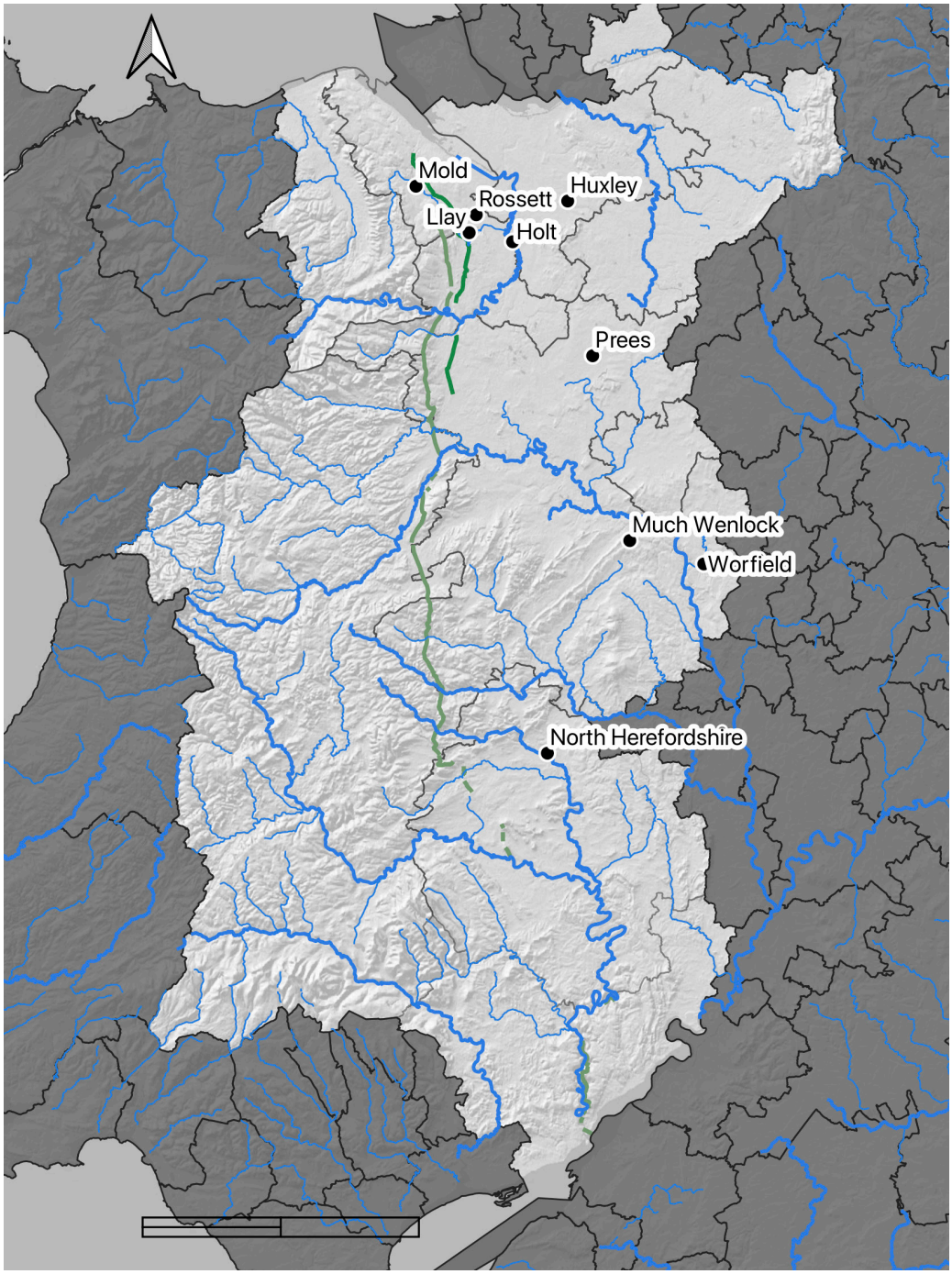

Figure 2: Location of the postulated 'productive sites' discussed in the article

designed to avoid revealing exact locations. Also, the number of finds that will be used as indication of a productive site will have different thresholds for the counties either side of the modern English/Welsh border. In the now English counties, any area which contains more than 5% of the total for the county will be considered as 'productive'. However, in line with the discussion about the lower overall objects from Wales, and Redknap's work, noted above, Welsh sites will only need to have two or more artefacts in association.

Distribution

Figure 1 illustrates the study area and the general distribution of finds throughout it. This is reasonably even, with the exception of a swathe of land running east-west across southern Shropshire. It is unclear as to why this occurs; it may be a feature of the prevalence of higher land, or differential detecting or reporting, and is found across multiple periods: possible reasons for this difference have been addressed elsewhere (Clarke 2023b). The boundaries of early groups of British such as the Magonsæta (Hereford) and Wreconsætna (Wroxeter, although a base in the area of the Wrekin is also a possibility) may meet at such places (Stanford 1980: 173). The influence of the early medieval dykes on material distribution has been discussed in a previous article, and will not be further covered here (Clarke 2023b: 170–207).

Despite this reasonably even distribution, there are still a number of areas of concentration of finds. These are, however, more closely identified from consideration of the number of finds listed to an area from the data than by mapping. Thus, in Cheshire there are numerical concentrations around Huxley, and one near Marbury. In Shropshire there are four potential sites; Prees and Whitchurch in North Shropshire, Much Wenlock and another near Bridgnorth (Worfield) in the south. In Herefordshire, one site is dominant - known as North Herefordshire, it has twenty-two finds, over a fifth of the total for the county. Wales is represented by clusters in Mold, Holt, Llay and Rossett (Table 3).

The finds in Marbury are an exceptional case. One entry is incomplete and therefore no conclusions can be drawn from that. Another three are probably from the same hoard, located on different occasions. Therefore, Marbury actually only numbers four identifiable finds and will not be discussed further. Detailed mapping of the finds listed as being from Whitchurch are in fact scattered around at some distance apart and do not form a coherent cluster, again they will not be discussed further here. Finally, although two finds are listed for Llay and this would normally bring it into the discussion under the criteria used, in fact one of them is likely to be modern, and so Llay will not be considered in this study either. The areas to be examined are shown in Figure 2.

Table 3: Location of clusters in the study area. The locations marked with an asteriks do not fulfill the critiera for a site, see text for expalantion

Location	County	Number of finds
Huxley	Cheshire	12
Marbury*	Cheshire	7
Whitchurch*	Shropshire	8
Prees	Shropshire	12
Much Wenlock	Shropshire	9
Worfield area	Shropshire	21
North Herefordshire	Herefordshire	22
Mold	Flintshire	3
Holt	Wrexham	2
Llay*	Wrexham	2
Rossett	Wrexham	4

The productive areas in Marches

Huxley, Cheshire

Huxley is first recorded in the Cheshire Court Rolls of 1260, and the name may derive from Hôc's lēah, suggesting an Old English (OE) language origin (Ekwall 1960: 260). It lies approximately 6km south of Tarvin, the name of which in turn derives from the Welsh terfyn, meaning a boundary. Dodd (1986: 14) saw this juxtaposition of language in surviving names as an indication of the 'changing relationship between the Welsh and the Angles'. The River Gowy, which forms part of the boundaries of each parish, was probably an important marker in the early landscape. It is possible too that the Gowy was navigable in the period, emptying into the River Mersey (its OE name also meaning 'boundary' (Mills 2011)); this would have facilitated access to Viking Dublin (Mills 2011; Garner 2009: 50).

A total of twelve objects have been recorded for Huxley, all within a small area (Table 4) Of these, the most well-known and researched is the Huxley hoard, a collection of twenty-two pieces of Hiberno-Scandinavian Viking silver found adjacent to the Gowy at a metal detecting rally in 2004 (Ager and Graham-Campbell 2009: 45, 47). In contrast to the probable hoard at Marbury, this is reported as one record on the PAS database. Deposited in the early tenth century, at a time when there was political and social tension in the area characterised by the Viking occupation of, and prompt removal from, Chester in AD 873. The eviction of the Vikings from Dublin in AD 902 caused an exodus, and Scandinavian settlement in the north west of England increased (Edmonds 2009: 5). These uncertain territorial arrangements may have contributed to the deposition of the Huxley hoard (Edmonds 2009: 6). This is part of a wider landscape of deposition of such non-coin caches, including one from Chester and two ingots found in Eccleston, both within 12km of Huxley (Griffiths 2003: 13; Williams 2009: 73–74).

Table 4: Finds from Huxley, Cheshire

Find ID	Artefact	Date from AD	Date to AD	Style
LVPL-BFBC1E	Buckle, Marzinzik type I.6	450	600	Anglo-Saxon
LVPL-1E1E51	Pin/strip brooch?	700	850	Scandinavian?
LVPL-4B8655	Strap end, Thomas Class B, Type 4	750	1100	Anglo-Scandinavian
LVPL-123B9B	Strap end, Thomas Class A Type 1	800	900	Anglo-Saxon
LVPL-D1295B	Strap end, Thomas Class E, Type ?	800	1000	Scandinavian
LVPL-4B46A3	Strap end, Thomas Class E, Type 1	800	1100	Scandinavian
LVPL-C63FBA	Hoard	850	950	Scandinavian
LVPL-AEEE02	Pencil, Biddle Class I	850	1100	
LVPL-71C370	Bell, hexagonal	900	1100	Scandinavian
LVPL-74EDA0	Stirrup strap mount	1000	1100	Scandinavian
LVPL-1DCD95	Coin, halfpenny of Cnut	1029	1036	
LVPL-EDD2BA	Coin, penny of Edward the Confessor	1046	1048	

Other finds from Huxley include an early (AD 450–600) Marzinzik Type I.6 copper alloy buckle, and part of a trapezoidal brooch or pin, decorated with a Greek key design. The buckle has, at one time, had garnets or other stones mounted in it, they have been removed or lost at some point. A similar find in Coddenham, Suffolk where the stones had been removed in antiquity was thought to indicate the possible presence of a Viking workshop, recycling older objects, in some cases as hacksilver such as the objects in the Huxley hoard (Newman 2003: 104, 106; Ponting 2023). The hoard was unusual in that all of the armbands had been folded and flattened and Sheehan (2009: 68–69) postulates that this is the output of a metals workshop; if so the treatment of the buckle supports this and would indicate a more permanent settlement. Redknap (2022: 77) considered that hacksilver was to be found in zones of occupation.

Two of the strap ends noted are generally considered to be Anglo-Saxon in design and are therefore earlier than the other two, which are Scandinavian in design, although the Class B type, usually considered to be Anglo-Saxon has been categorised as Anglo-Scandinavian by the FLO. A strap fitting is recorded as being of Anglo-Scandinavian style, while a stirrup mount is one which would have been fixed to a metal stirrup, an innovation introduced

by Scandinavian settlers (Williams 1997: 58–67). The bell is of a type known as a Norse bell, and is hexagonal in section; these are considered to be a tenth-century phenomena and are widely distributed in areas of Scandinavian settlement, found on the Isle of Man and Anglesey, as well as the area of the Danelaw (Griffiths 2007: 70–71; Shoenfelder and Richards 2011: 160, 164–165). The two coins date to the reigns of Cnut and Edward the Confessor, from the first half of the eleventh century AD. Coins were widely recycled by the Viking peoples and may not necessarily indicate a trading place.

The artefacts span the early medieval period, but there is perhaps a concentration around the later part, from AD 800–1100, in line with the date of the hoard. They are predominantly Scandinavian in style, and 'domestic', rather than military. This can be a feature of detecting, as detectorists tend to 'dial out' iron in their searching, this is done in an attempt to avoid spending time excavating 'modern' farm equipment, for example (Oksanen and Lewis 2020: 111). It does however mean that swords, knives and so on are consequently scarce finds. What these known finds suggest is a market site or settlement, rather than a place where an army may have gathered. The earlier finds may have been destined for recycling as indicated by the work on removing gems from the buckle.

Prees, Shropshire

The first of the Shropshire sites, the Parish of Prees, which has been used as the location for these finds by the PAS, encompasses the hamlets of Sandford, Darliston and Fauls and Mickley. The finds are spread throughout these but in still a relatively concentrated area (less than 2km^2) and therefore, in view of the low amounts of artefacts found in the Marches, worth analysis. The name Prees is first documented in AD 1255 and is Welsh in origin, meaning a covert or area of brushwood (Ekwall 1960: 373). It is one of only two surviving Welsh names in the wider area and is said by Gelling (2006: 144, 194) to be a 'pre-English linguistic survival' and evidence of Welsh and 'English' integration. The Church of St Chad at Prees is a late fourteenth-century building located on a pre-Conquest site; the Domesday Book mentions a priest and the large size of the Parish may suggest that it was a minster (HE 1213100). The A49 and A41 trunk roads pass either side of the parish, and local sections of these follow (respectively) the Roman Roads with Margary numbers RR6A, which ran from Wroxeter to Chester, and RR19, which followed a route from Whitchurch to join with Watling Street (the modern A5) near Stretton; the finds are located closer to RR19 (Margary 1967: 316; Burnham and Davies 2010: 316). Darliston originates as *Déorláfs Tun*, *Déorláf* possibly being an Anglo-Saxon monyer operating post AD 925, and '*tun*' being the most common form of 'settlement' in Old English, while Sandford (unsurprisingly, 'sandy ford') appears in the Domesday Book as Sanford (Ekwall 1960: 13, 404; Gelling 1984: 318; Lias 1991: 57). There are the remains of a motte at Sandford, but no dating evidence for this is presented (HER 7087911). The Historic Environment Records thus demonstrate that across Prees parish there seems to have been activity in the area from both the Roman and Post-Conquest periods. This would suggest the possibility of ongoing activity in the area throughout the early medieval period as well, especially given the status of the church.

Table 5: Finds from the Parish of Prees

Find ID	Artefact	Date from AD	Date to AD	Style
WMID-73E745	Brooch, cruciform, Martin's Type 2	475	550	Anglo-Saxon
LANCUM-AB9693	Coin, sceatta	675	740	Anglo-Saxon
LVPL-D1CA29	Coin, primary sceatta	655	680	Anglo-Saxon
LVPL-D7E3A4	Pin	400	1066	
HESH-1BEDA8	Pin	700	850	
WMID-1DCC87	Pin	700	900	Anglo-Saxon
LVPL-C14513	Vessel, bucket mount	700	1066	
WREX-58DB2D	Strap end, Thomas Class A	750	950	Anglo-Saxon
LVPL-7EE655	Strap end, Thomas Class A, Type 1	800	900	Anglo-Saxon
LVPL-D6F7E1	Hooked tag	400	1066	
HESH-24A9D4	Hooked tag	800	900	Anglo-Saxon
LVPL-A65F43	Hooked tag	800	900	Anglo-Saxon
LVPL-ED08B6	Stirrup strap mount	1000	1100	Anglo-Scandinavian

The thirteen finds lie to the east of Prees village, mainly within the hamlets of Sandford and Darliston, in two clusters with one outlying artefact (Table 5).

From the evidence above, it is clear that the area around Prees did indeed see activity through the early medieval period, which is reflected in the artefacts, particularly the early sceattas. It would be easy to conclude that the area was one heavy in passing traffic, moving along the Roman roads. However, there is a curious occurrence here – two of the hooked tags form an identical pair. Additionally, one of the strap ends was found in the same field, and all three are Treasure cases, being made of silver, and are well preserved. This then possibly represents a manufacturing site or a high-status settlement of some description. The cluster centred around Sandford comprise the three pins, a strap end and one of the hooked tags. They have a range of dates but all encompass AD 400–700, and are objects typical of those found in an early burial ground. The proximity of the church may support the evidence for a 'pagan' burial ground or field cemetery, which was later supplanted by the churchyard, although the area is not located on a boundary as may be expected (Brookes 2020; Sayer 2013: 134). The continuity of the site could be understood through the presence of a later stirrup strap mount, by this period the church at Prees was possibly at the apex of its importance. If indeed it was a minster

church before Domesday, it is possible that this was site of trade associated with an important church; such a conjunction has been identified at Deerhurst, Gloucestershire, where two annual fairs were granted in AD 1318, formalising a practice which originated in much earlier centuries (Hare 2021: 297). This is a possibility for the development of Prees, although a high-status site associated with the minster is also to be considered.

Much Wenlock, Shropshire

The first seven items on Table 6 are found within a close area near to the town, while the last two are approximately 9km away from Much Wenlock; therefore, the more distant finds will not be discussed here. The grouped finds, south of the town and up to 1.5km from the centre, are all (with the exception of the Edward penny) early–mid period; this is not surprising as the Priory in the centre of the modern town was founded in the AD 680s, possibly in reused Roman buildings (HE 1004779). This distribution pattern reflects one 'permission', i.e. a detectorist has access to one farmer's land, which follows a minor road and has resulted in this closely located cluster. The condition of the copper-alloy brooches and the buckle make it difficult to draw conclusions about them, but these objects are often found in graves – Martin (2015: 191) considered the cruciform brooch (LVPL-7070E4) to be 'numerous' in grave contexts. Capper (2025: 63) also suggests the presence of a small Anglo-Saxon cemetery, predating the founding of the Abbey, much as may be the case at Prees, above.

Table 6: Finds from Much Wenlock
*These finds are not associated with the others

Find ID	Artefact	Date from AD	Date to AD	Style
LVPL-A557C1	Brooch, cruciform	450	600	Anglo-Saxon
LVPL-7070E4	Brooch, small long	401	600	Anglo-Saxon
LVPL-B32C32	Buckle, zoomorphic	500	700	Anglo-Saxon
LVPL-AD366F	Strap end, Thomas Class A, Type 2	750	950	Anglo-Saxon
LVPL-AD8858	Strap end, Thomas Class A, Type 2	750	950	Anglo-Saxon
LVPL-A4C81F	Strap end, Thomas Class A, Type 2	750	950	Anglo-Saxon
LVPL-951268	Coin, penny of Edward the Confessor	1048	1050	
HESH-6CF669*	Coin, sceatta	680	765	
HESH-167369*	Strap end, unknown	850	1100	Scandinavian

To date the only early medieval cemetery excavated in Shropshire is to be found at Bromfield, 4km north-west of Ludlow in the south of the county. The thirty-one graves there were excavated in the 1970s and were identified by soil morphology as little bone survived (Stanford 1995: 132). Grave goods were limited to two knives, one amber bead pendant and part of a penannular brooch, the cemetery was thus dated to the period AD 650–750 (Stanford 1995: 136, 140). The strap ends from Much Wenlock are well preserved, one even has the rivets present. Thomas (2000: 131) associates these with market sites, tracks, and manuring activity, in that they are redistributed with the general refuse from nearby settlements; the preservation of these may eliminate the latter option. It is known too that many markets were held near minsters and other ecclesiastical sites, and did not necessarily go on to develop into central places but remained seasonal (Bassett and Hare 2023: 225; Wilmott and Wright 2021: 27). It could also be a route with a link to the RR193 that passes to the south, but there is no obvious surviving evidence for this, and the idea that it was a cemetery is probably more viable. Possibly the most likely scenario is that the important monastic double house was the focus for a high-status settlement with a burial ground; it is increasingly recognised that, especially later in the period, such sites were exploited and developed into centres of 'lordly power' (Gould et al 2024: 72).

Worfield, Shropshire

Worfield is a small village 3km from Bridgnorth, which is on a major river, the Severn. Worfield is noted by Eyton (1856: 105) as a 'pre-Conquest manor' and the Domesday Book records the presence of a priest, although it is accepted that the presence of a church does not necessarily follow. A medieval cross in the churchyard provides evidence for its continuing importance into the later period (HER 01938). Although Worfield is listed as the finds area, in fact the twenty–one finds are found in three groups, up to 3km from Worfield. These are in Chesterton to the north east of Worfield, which lies on a tributary to the River Worfe; in Bromley, west of Worfield, between the Worfe and the River Severn and at Oldington to the north, also on the Severn. Thus, the wider area seems to be one of significant activity and is worth discussing as one entity.

A Danish army overwintered at Quatford (OE: *Cwatts ford*), approximately 3km downstream of Bridgnorth and 5km from the site under discussion, in AD 895–896; there is a further reference to their crossing the Severn at 'Cantbricge', location unknown but probably also Quatford, in AD 910 (HER 114799; Horovitz 2010: 9). Bridgnorth is hence the 'north bridge', distinguishing it from the crossing in the south at Quatford (Ekwall 1960: 64). The burh established at *Brycge* by Æthelflaed in AD 912 is usually associated with Bridgnorth, although the possibility remains that it may have been located at Quatford (National Trust 1789308; Ekwall 1960: 377; Horovitz 2010: 9). A mint was also established at Bridgnorth or Quatford, from which coins were issued from AD 979 to AD 985 and again from AD 1009 to AD 1016 (HER 1078718). St. Andrews church in nearby Quatt contains remains of early medieval fabric, predating anything currently known from Bridgnorth. Excavations at the foot of Panpudding Hill, a medieval ringwork and

bailey castle which is in the town itself, have revealed only finds from this later period (Horovitz 2010: 2, 9; Holland 2012: 15). The evidence would then suggest that Quatford was the pre-Norman settlement.

Table 7: Finds from Worfield

Find ID	Artefact	Date from AD	Date to AD	Style
WMID-FE6EAB	Button	580	650	Anglo-Saxon
HESH-110A96	Coin, sceatta	680	710	
HESH-543615	Pin	700	900	
WMID-DF2AD5	Pin	700	900	
WMID-AFE646	Hooked tag	700	1000	
HESH-A5C584	Unidentified object, bracelet terminal (?)	750	1100	Anglo-Scandinavian
DENO-2150DA	Coin, penny of Offa	765	792	
WMID-C4E5D8	Strap end, Thomas Class B, Type 1	750	1050	Anglo-Saxon
WMID-DFCCD4	Strap end, Thomas Class A, Type 1	800	900	Anglo-Saxon
WMID-221D28	Strap end, Thomas Class A, Type 1	800	900	Anglo-Saxon
WMID-E6951A	Strap end, Thomas Class A, Type 2	800	900	Anglo-Saxon
WMID-B8BEBD	Strap end, Thomas Class A, Type 1	800	1000	Anglo-Saxon
WMID-A58487	Strap end, Thomas Class A, Type 2	800	1000	Anglo-Saxon
WMID-5ABF5E	Strap end, Thomas Type G	900	1200	Anglo-Scandinavian
WMID-E0C914	Mount	850	1066	
WMID-E195A0	Mount	850	1500	
WAW-C104D7	Sword, pommel	900	1100	
WMID-637852	Stirrup terminal	1000	1100	
WMID-43A0F2	Stirrup terminal	1000	1100	
HESH-150405	Stirrup strap mount	1000	1100	
WMID-097191	Stirrup terminal	1050	1100	

Worfield (OE '*field on the River Worfe*) place-name comprises two elements. The river name Worfe, '*Wor*' meaning 'wandering' or 'tired' (Ekwall 1960: 534) and *feld*, which Gelling (1984: 240, 243) suggests is indicative of land brought under cultivation, in this case

possibly within woodland. The village lies in a bend of the River Worfe. Here also is a Romano-British enclosure, and St. Peter's church may have been founded in 'Saxon days' and have been the original minster church for the area (HER 114722; HER 114492). Also, just south of the village is a place known as the Lowe. Gelling (1997: 138) states that this is a development of the Old English *hlāw* indicating a possible burial mound. Roman Road 193 from Greensforge, Staffordshire (near modern Kingswinford) to Newton, Powys passes through Worfield (HER 1358747; HER 1326559; Margary 1967: 296). Further, Chesterton, 8km north-east of Bridgnorth, has a name which suggests a *tün* by a *CAESTER* or Roman fort (OE). Here too a large, multi-vallate Iron Age hillfort known as 'The Walls' and finds of Roman period coins support possible continued use (HE 1021065). There may also be a Roman Road which passes Chesterton Walls, a nineteenth century antiquarian noted a ford crossing a brook as part of the route of a road from Droitwich, an important source of salt (Watkins 1879:359). The meaning of 'Bromley' is not definitive, but the lēah element would suggest an OE language origin (Ekwall 1960: 68). Between Claverley and Quatt are what the HER record describes as 'five tumuli in quincinx', in which human remains, and a sword were found in the early nineteenth century; the barrows are not visible today (HER 114590). These areas are all close to the rivers Severn, an important routeway, and Worfe, which is fed by the wonderfully named 'Mad Brook' in the north and flows into the Severn north of Bridgnorth. There is good evidence then for occupation from the Iron Age onwards in the area.

The twenty-one finds are given in Table 7, and date across the early medieval period. The early button in the Bromley group could also be a brooch or other fitting, it comprises gold cells, which would have perhaps contained garnets at some point. This group is the most widespread in dates, from the button to the later stirrup fittings. If it was the scene of Viking activity, it is not unknown to find objects which have been dismantled for rework or for melting into bullion; see the discussion above about Huxley. The sword pommel in this group is of a style which has been attributed to Viking use, as well as later Anglo-Saxon. There is also the later, Viking-style, strap end in this group, as well as earlier examples. There is also evidence for the first time for use of horses and weaponry, metal stirrups were introduced by the Vikings but were likely widely adopted later – it is of course known that Vikings were in the area. In all the finds are perhaps typical of settlement – the high numbers of copper alloy strap ends would support this, tending toward the second half of the period. With the known Viking activity in the area, it is likely that this was at least a seasonal site, later disturbed by the creation of the *burh* at Bridgnorth, although Zaluckyj (2002: 212) considers this to have been a fort defending the river crossing, rather than a place which developed into a town. In this case though, Worfield, in spite of being the site of the early minster, was eventually overtaken by Bridgnorth.

North Herefordshire, Herefordshire

The twenty-two finds from this site, which is within 100m of a river, were all located within a small area, and some form a cluster which are closer in date than objects from

many of the other sites here – Table 8. In particular the three fragments of brooches are finds of an early date. The sleeve clasps too are generally thought to be artefacts brought as heirloom objects by the earliest Anglo-Saxon settlers, exclusively worn by women in England, possibly with a different style of dress to that of the incumbent population (Owen-Crocker 2004: 56; Walton-Rogers 2007: 123). These are rare finds in the west of Britain; Mileson and Brooks (2014: 21) considered them rare even in the better populated Thames Valley area, and to be confined mainly to East Anglia and the East Midlands. These then are significant objects, used by people with new ideas of dress and identity, perhaps earlier in the west than is often considered.

Table 8: Finds from North Herefordshire

Find ID	Artefact	Date from AD	Date to AD	Style
HESH-B8FE61	Unidentified	400	900	
HESH-B8F058	Brooch, cruciform	430	550	Anglo-Saxon
HESH-B90BC0	Brooch, cruciform, Martin type 3	480	550	Anglo-Saxon
HESH-B90507	Brooch	480	600	Anglo-Saxon
HESH-927418	Vessel	500	700	Anglo-Saxon
HESH-85E083	Sleeve clasp, Hines form B18c	500	600	Anglo-Saxon
HESH-926A22	Sleeve clasp	550	800	Anglo-Saxon
HESH-F3BC94	Sword (pommel)	600	850	Anglo-Saxon
HESH-85CC82	Pin	650	900	
HESH-85C3B3	Pin	650	900	
HESH-85ADC8	Pin	650	900	
HESH-859D01	Pin	650	900	
HESH-5B1DB2	Coin, sceatta	695	715	
HESH-1F9457	Finger ring	700	1200	
HESH-1F8A76	Mount	700	1200	
HESH-5AD183	Coin, Northumbrian styca	800	900	
HESH-85D871	Strap end	800	1000	
HESH-85D275	Strap end, Thomas Class A, Type 1	800	1000	
HESH-5AFD80	Coin, Northumbrian styca	830	855	
HESH-9296F6	Strap end, Thomas Class C	850	1000	
HESH-928C27	Harness fitting	1000	1100	
HESH-1F7483	Buckle	1000	1200	

Capper (nd.: 204–205) largely based on the evidence outlined above characterises this site as 'the damaged remains of a small Anglian-style cemetery', see also above. It may have been in use until the ninth century, past the date proposed by Hines as that of the end of

the furnished burial period of c. AD 680 (Capper n/d: 206). A cemetery of this size would represent a single family, as does the one at Bishops Cleeve to the north of Cheltenham with 26 graves, of which only 7 were furnished. This is Reynold's (2006: 144, 146) 'western margin' of Anglo-Saxon burial; this one in North Herefordshire and the site at Bromfield pushes that boundary 50km further west. Reynolds (2006: 146) states that the lack of sword or shield at Bishops Cleeve rules out a pioneering group advancing the Anglo-Saxon territories. If so, the presence of a sword from North Herefordshire may then suggest that these were actually pioneers. Brookes (2019: 67)argued for a continuation in use of a cemetery at Loveden Hill, Lincolnshire, an extensive area which functioned later as a hundredal meeting place focussed on the cemetery. Langlands (2019: 37) notes that meeting places or muster points form part of the 'landscape of governance', as we have evidence for here in the surrounding 'lenes' of Kingsland, Monkland and Eardisland, which define a territorial area of the period (Lovell 2004: 4). If indeed Capper's assertion is correct, and the finds are typical of grave goods, the sherd of ceramic being very characteristic of a cremation urn, then it can be asserted with reasonable confidence that this was an early cemetery and then perhaps a meeting place, albeit not necessarily a hundredal one. As stated, Bromfield has been the only other cemetery excavated in Shropshire, which Stanford (1995: 137–140) dated to AD 650–750, but the presence of early sleeve clasps and brooches (AD 430–600) at North Herefordshire may indicate an earlier founding for this cemetery than that at Bromfield.

Mold, Flintshire

Starting at the most northern and western of the study area, on the Welsh side of the current border, Mold lies to the west of Wat's Dyke, the only one of the sites reviewed here which does. The Welsh name for Mold, Yr Wyddgrug, means 'prominent mound' although it is unlikely that this refers to the Norman motte and bailey, rather a natural feature (Silvester *et al.* 2012: 41). This lies 200m to the northwest of the Church of St. Mary, which is probably an early foundation (Silvester and Hankinson 2004: Appendix 3). Additionally, the early shrine to St Winifride at Holywell, founded in the seventh century AD, is only 14km to the north, and a Roman road to Chester may run within 4km of Mold (Silvester and Hankinson 2004: 7, 13; Wynne 1855: 238). Swallow (2016: 312, 336) identified two further medieval motte and bailey structures in the area, both overlooking the River Alyn, and it may be that Mold was strategically important in guarding and monitoring the river and the Roman road until much later.

There are three finds from Mold (Table 9). The coin and strap end have the same map reference, although the designation 'from a paper map', reported perhaps before GPS functions on telephones became more commonplace, implies an amount of inaccuracy. The coin is late, the strap end early, and is made from silver inlaid with niello and, like the one from Rossett, decorated in Trewhiddle style. The book mount is of gilded copper alloy, decorated with a triquetra knot, a common insular design, and thus has a wide date range, from AD 600–900. The two artefacts are of high status and would certainly support the presence of a strategic settlement or an important early religious house, the book mount

being the sole artefact discussed here that could suggest literacy. It might be that the river, with a safe crossing place, was already being guarded before the Norman Conquest.

Table 9: Finds from Mold

Find ID	Artefact	Date from AD	Date to AD	Style
LVPL-5EAC05	Strap end	400	1066	
LVPL-918135	Mount	600	900	Insular/British
LVPL-7D2F34	Coin, Edward the Confessor	1056	1059	

Holt, Wrexham

Possibly best known as the site of the Roman tile works and settlement, Holt lies on the Welsh bank of the River Dee. This facilitated transport between the tilery and then other locations at Chester and along the wider North Wales coast, where much of the product was utilised (Matthews 2018: 7). Roman Road RR 660 links to further roads which also go on to Chester and the coast. There is thus much evidence for Roman occupation, but early medieval settlement has to be inferred from the layout of the village, with a green opposite the church, and later monuments such as the impressive medieval bridge (CPAT n/d: 101261).

Table 10: Finds from Holt

Find ID	Artefact	Date from AD	Date to AD	Style
WREX-C232E2	Brooch	450	750	Anglo-Saxon
LVPL-20C747	Coin, sceat	700	710	

The gilded annular brooch and the sceat shown in Table 10 are rare finds for Wales, in fact at the time of recording the coin was only the second to be recorded in the Country – there are still only three on the database. It seems then that this was another area with high status people moving through it if not residing there, the later bridge obviously signifies an important crossing point, protected by a contemporary castle (Coflein 2002). Certainly, the settlement immediately opposite Holt on the other bank, Farndon, is the site of an early minster (Shaw and Clark 2003: 3). Holt though retained its importance as a river crossing; a castle was built between 1282 and 1311 to facilitate the ongoing war by Edward I against the Welsh, which was still in use during the English Civil War, the Church in Holt dates to a similar period (CPAT 101258; CPAT 101260). Once again the finds, although few, provide evidence for continuity over a long period.

Rossett, Wrexham

Rossett, Yr Orsedd in Welsh, and thus 'the throne' could perhaps then be a royal centre, but it is far more likely that this designation is a Bardic tradition, based perhaps on the tumulus which is noted on the OS maps (Lias 1991: 66). Domesday notes a settlement here, and there is mention in a document of AD 1562 of an early medieval chapel, although no trace of this remains today (Silvester and Hankinson 2004).

Table 11: Finds from Rossett

Find ID	Artefact	Date from AD	Date to AD	Style
CPAT-4AAF81	Coin, penny Coenwulf	796	805	
NMGW-D75B2B	Strap end	n/d	n/d	Anglo-Saxon
WREX-4975C9	Coin, penny Æthelred II	997	1003	
HESH-ABE884	Harness fitting	1000	1200	

There have been four finds declared from Rossett, Table 11. The early coin, potentially minted in Canterbury, is listed by the PAS as 'a very rare find for Wales'. There are fifty-one coins noted for the entire study area, so two within in small location is significant. Coenwulf seems to have spent his time mainly in the south of England, apart from forays into Northumberland and Powys, and possibly had little impact on North Wales (Venning 2013: 117–8). The same applies to the later coin, that of Æthelred II, minted at York. Another monarch with other things on his mind, this time serious Viking incursions, he probably had little impact on the Marches. Coins are more important as a representation of trade and therefore people to trade with. The silver strap end is very fine and it is allocated a broad date in the PAS commentary of the second half of the ninth century, based on its Trewhiddle design. There are 102 strap ends noted in the PAS data for the area under discussion and while most of them are of copper-alloy, approximately 10% are of silver or have been silver plated. Copper strap ends are the more common, and those made of silver must have been made for a high-status individual. Finally, the copper alloy harness fitting fragment is listed on the database as being 'Anglo-Scandinavian', not surprising as they were probably widely adopted post-tenth century AD.

Discussion

After the decline of the Roman military and administrative system and the attendant decline in their administration in the early fifth century AD, it is generally accepted that Germanic settlers started to settle in parts of lowland Britain (see, for example, Cunliffe 2012: 401; Naismith 2021: 22–3). Their settlement and activity in the south and east of

England is well researched, facilitated by the excavation of a number of large cemeteries, and the identification of contemporary settlements. As already discussed, this in turn is supported by better soil conditions than are encountered in the west of England and the east of Wales, and more developer-led archaeology, amongst other factors. The evidence here demonstrates though that it is possible to identify potential early sites in the west, even with low numbers of finds. Eight sites have been identified here through the examination of the PAS data for the area. Many of them show evidence for continuity over a number of centuries – Prees and Holt both have strong Roman period signatures in their proximity to Roman roads and a large tileworks respectively. Holt was also sited on the River Dee, allowing access to the North Wales coast along which much of the production was delivered. It was to retain its importance into the seventeenth century, seen by the construction of the castle and the church, the evidence here bridges a gap exposed by a lack of other archaeological evidence for continuity through the early medieval period. This too is the case at Mold, which may have been an important route in the Roman period, being relatively near to a road and also an important river which was again defended into the Medieval period. On major rivers also are Huxley (Gowy) and Worfield (Worfe and Severn), both of these would allow access to the Irish Sea, and this is reflected in their Viking-period finds. Three are each near to a minster church – Prees, Much Wenlock and Worfield – and all show the possibility of having been the site of a pre-Christian field cemetery outside the later churchyard. All of these locations survived as church sites into the medieval and modern periods, even if the current church architecture dates from the medieval period with no remaining earlier fabric. The proximity to a minster church though does not, from the evidence here, produce artefacts associated with literacy, giving substance to Willmott's argument (2022: 33).

It is not possible at this stage to definitively characterise the type of activity in the area, indeed Willmott and Wright (2021: 2) cautioned against applying blunt labels to sites which often are more nuanced in purpose; there are, however, some clues. Huxley has long been known as the site of the hoard, but the surrounding objects move the site from a remote one in which a hoard was hidden to one of much more Scandinavian activity. It is near a river that may have been navigable, offering passage onto the Irish Sea – was Huxley then a seasonal camp or meeting place? The one early find has already been discussed and might be a residual item ready for reworking. The date distribution of the other finds suggests a place of persistent activity but not a site with longevity – there is no evidence for church founding, for example, and today it is a small ribbon settlement. Prees offers the possibility in an otherwise unexamined landscape of settlement which may have taken advantage of the two nearby Roman Roads, the church also being part of this early development. It is possible that the church was an economic force, many productive sites analysed by Ulmschneider were in proximity to a later medieval church (Pestell 2012: 565). There is also a possibility that Prees represents a pre-Christian field cemetery.

Worfield is less straightforward to ascribe a definition to, as the finds are dated across the early medieval period. Known Viking activity nearby though would perhaps indicate

another seasonal camp or even longer-term rural settlement. Water, always important in influencing settlement locations, was readily available and the Severn would have allowed access to the wider Irish Sea landscape, as well as other areas of Britain. Indeed, the role of rivers and Roman roads in the movement of goods is accepted, and all of the sites are near rivers or are located on Roman roads (Palmer 2003: 51). The early button found at Worfield could have been indicative of a workshop, as postulated at Huxley, and the strap ends and stirrup mounts found there are of Scandinavian style. This may have been an early site which was later populated by Scandinavians, perhaps an integration of the cultures rather than a takeover, although there is no evidence from the finds for either scenario. At North Herefordshire, the presence of the early medieval sherd, and the nature of the finds, along with the fact that they are clustered over a very small site, would point to this being an early cemetery, later perhaps a meeting place while the settlement developed nearby – the modern village is 1.5km to the north-west of the site, presumably above a floodplain. The coin may indicate the later use of the site as a meeting place or even market; there are precedents for the reuse of burial grounds in this way such as at Bidford-on-Avon (Baker and Brookes 2013: 150). Pestell (2004: 33) too, notes that coins are a feature of early ecclesiastical sites, although the presence of only one coin is inconclusive. The possibility that a site changes its character over time has major implications for understanding early medieval society (Willmott and Wright 2021: 26). Pestell states that (twelfth-century) churches often appear near productive sites – more evidence that they are not isolated moments in the landscape. Sites here do indeed change or to shift in focus.

Some of the conjectured land use is supported in some cases by the place name-evidence and later, such as in the case of the Viking occupation of Quatt, by documentary evidence. However, place names do not always signal occupation – *lēah* for example, as in Huxley, might indeed be an area cleared of woodland, but it does not automatically follow that this was then occupied. The meaning of the term has been challenged, as it was thought to have been a name attributed to a settled area of cleared land, but is can also be considered to be a topographical term denoting an area of wood pasture (Lennon 2009: 185–186). Prees – 'brushwood' – is an even more opaque name when considering occupation. Overlaying the evidence of the PAS demonstrates that activity – settlements, markets or temporary camps, happened in these places. Mapping the PAS finds offers areas to investigate further, occasionally, as in North Herefordshire, a very precise location which could be verified by excavation.

The sites located in modern Wales are more problematic. In spite of the assertion that a small number of finds can provide information, all that can reasonably be asserted here is that there was activity of some description in the early medieval period. Holt is the best served and has been discussed above, but Rossett and Mold are less transparent. The items found at Rossett could easily be accidental loss and are dated (reliably) to a span of over two hundred years, which does not offer evidence for continuity. It is encouraging though that the number of finds here has doubled since 2023, and may continue to increase (Clarke 2023a: 151). Mold, west of Wats's Dyke, also has a temporal

spread of finds, but the book fitting is interesting, suggesting literacy and therefore the presence of clergy – although the view that only the clergy had access to books is by no means universally accepted. This would accord with an early church founding, and again, the finds bridge the Roman-medieval gap.

The area around Offa's and Wat's Dykes, built around the end of the eighth century and the early part of the ninth century respectively, is particularly rural in character and under-researched (Williams 2021: 152). The presence of such large monuments in the landscape must suggest that there was territory to be protected but this territory would also provide a source of labour. It can be argued that not all of the sites reviewed here are relevant to or affected by the building of Offa's and Wat's Dykes, but the furthest one from the Dykes, Worfield, is less than 50km away, 2 days travel on foot and was therefore in all likelihood affected by whatever control the Dyke's were designed to exercise (Carver 2019: 8). All of the locations were all under the aegis of Mercia, and if the Dykes regulated the flow of trade, which some commentators consider to have been their purpose, then the occupants of the wider landscape would also have been affected by this. It has already been stated that David Worthington considered that labour may have been moved into the area from greater distances than this to build the Offa's Dyke (Feryok 2013: 185). It might be that in light of the increased activity shown by the sites identified here that Fox's idea of a local workforce under central control is more probable. The Dyke's were built with manual labour which obviously leads to the necessity for tens, if not hundreds of people not only building but in support of these workers (Ray and Bapty 2016; 215). Ray and Bapty (2016: 224) considered that diverse Mercian forces were recruited to build during a relatively peaceful time in the territories, but it is also a possibility that a local workforce was involved, as Fox postulated. The evidence from the PAS distribution suggests more occupation, and therefore population, than could be considered from the paucity of evidence for buildings and this perhaps gives new momentum to Fox's idea. While these may be seen as random finds, their presence in such a denuded landscape garners significance, as seen in Redknap's (2022) examination of extremely low number of objects in a landscape. There are a considerable number of high-status finds too; this is significant if we were to consider that the labour was raised by local *earles* or *ducs* as part of their levy to the Mercian overlords (Ray and Bapty 2016: 224). There is documentary evidence from the late eight century that holding book-land brought with it obligations such as the building and maintenance of bridges and fortification – it is not unreasonable to consider the building of Dykes as a form of fortification (Ray and Bapty 2016: 222).

Conclusion

It is, of course, imaginative to speculate that any settlement in the area housed the people who built the Dykes, although it may at least admit the possibility of a local labour force. What is shown here is that the PAS data can be utilised to start to pinpoint areas of interest to those studying the early medieval period in the north-east of Wales

and the wider Welsh Marches. It provides a stream of evidence for occupation that can then be examined along with other sources such as place names, landscape survey and so on. It can be supported too with evidence for occupation before and after the early medieval period; these are more material rich eras with more written evidence. What all of these sites have in common is that the evidence for continuity of use is within the artefact record. Even at the lower numerical threshold, they are 'productive' sites, inland and with evidence for their use, and indeed their changing use. In Wales, the evidence threshold has to be lower than in England, because of the lower numbers of detected objects overall, and here it has been used to confirm known early medieval sites at Holt and Mold. Rossett has less evidence for early occupation so the presence of four objects merits further investigation, possibly as part of a wider examination of the character of north-east Wales in the period. On both sides of the modern border, there are a number of sites which are approaching the threshold for occupation and further study of this important resource is thus necessary and desirable.

Acknowledgments

The author wishes to extend her thanks to the Editorial Board of the *Offa's Dyke Journal* and to the anonymous reviewers for their constructive and encouraging thoughts and advice. Also, Professor Howard Williams and Dr Caroline Pudney who have offered unwavering support throughout my adventures, for which I thank them.

Bibliography

Ager, B. and Graham-Campbell, J. 2009. Discovery and contents, in J. Graham-Campbell and R. Philpott (eds) *The Huxley Viking hoard: Scandinavian settlement in the North West*. Liverpool: National Museums Liverpool: 45–50.

Baker, J. and Brookes, S. A. 2013. Monumentalising the political landscape: a special class of Anglo-Saxon assembly site. *The Antiquaries Journal* 93: 147–162.

Bassett, S and Hare, M. 2023. A pre-Conquest market place at Deerhurst? *Transactions of Bristol and Gloucestershire Archaeological Society* 141: 225–231.

Blackburn, M. 2003. 'Productive' sites and the pattern of coin loss in England, 600–1180, in T. Pestell and K. Ulmschneider (eds) *Markets in Early Medieval Europe: Trading and 'Productive' Sites, 650–850*. Oxford: Windgather: 20–36.

Brookes, S. 2020. Domesday Shires and Hundreds of England. York: Archaeology Data Service https://orcid.org/0000-0002-1124-4890

Brown. I. 2004. *Discovering a Welsh landscape: Archaeology in the Clwydian Range*. Macclesfield: Windgather.

Burnham, B.C. and Davies, J.L. 2010. *Roman Frontiers in Wales and the Marches*. Aberystwyth: Royal Commission on the Ancient and Historical Monuments of Wales.

Capper, M. nd. St. Guthlac and the 'Britons': a Mercian context, in S. Tyas (ed.) *Guthlac of Crowland: Celebrating 1300 Years*. Stamford: Paul Watkins: 181–213.

Capper, M. 2025. A meeting of peoples: PAS metalwork, material and documentary evidence for cultural exchange in Anglo-Saxon Shropshire and the Mercian West Midlands, in R. White (ed.) *Floreat Salopia.* Oxford: Oxbow: 55–88.

Carver, M. 2019. *Formative Britian: An Archaeology of Britian, Fifth to Eleventh Century AD.* London: Routledge.

Clarke, P.M. 2023.a The Early Medieval Material Culture of the Welsh Marches: An Analysis of the PAS Database. Unpublished PhD thesis. Chester: University of Chester.

Clarke, P.M. 2023b. Evaluating the early medieval Portable Antiquities Scheme data for the Welsh Marches. *Offa's Dyke Journal* 5: 170–207.

Coflein. 2002. Holt Castle NPRN 307202. https://coflein.gov.uk/en/site/307202/

CPAT. nd. Holt Church (St Chad). PRN 101258. https://archwilio.org.uk/her/chi3/arch.php?county=Denbighshire&lang=eng

CPAT. nd. Holt Castle PRN 101260. https://archwilio.org.uk/her/chi3/arch.php?county=Denbighshire&lang=eng

CPAT. nd. Holt Bridge PRN 101261. https://archwilio.org.uk/her/chi3/report/page.

Cunliffe. B. 2012. *Britain Begins*. Oxford: Oxford University Press.

DEFRA. 2018. Agricultural Industry in Shropshire, summary report and analysis. https://shropshire.gov.uk/media/10640/survey-of-agriculture-report-july-2018.pdf

DEFRA 2021. Statistical Digest of Rural England, Feb 2021 edition. Government Statistical Service.

Dodd, J.P. 1986. Early settlement in West Cheshire. *Cheshire History* 17: 14–20.

Edmonds, F. 2009. History and names, in J. Graham-Campbell and R. Philpott (eds.) *The Huxley Viking Hoard; Scandinavian Settlement in the North-West*. Liverpool: National Museums Liverpool: 1–12.

Ekwall, E. 1960. *The Concise Oxford dictionary of English Place-Names* (4th ed.). Oxford: Oxford University Press.

Eyton, R.W. 1856. *Antiquities of Shropshire*, Volume III. London: Russell Smith.

Feryok, M. 2013. Offa's Dyke, in S. Zalukyj (ed.) Mercia: The Anglo-Saxon kingdom of Central England. Almeley: Logaston Press: 163–192.

Garner, D. 2009. The finding of the Huxley Hoard, in J. Graham-Campbell and R. Philpott (eds) *The Huxley Viking Hoard; Scandinavian settlement in the North-West.* Liverpool: National Museums Liverpool: 49–50.

Gelling, M. 1984. *Place-Names in the Landscape.* London: Dent.

Gelling, M. 1997. *Signposts to the Past.* Chichester: Phillimore.

Gelling, M. 2004. *The Place-Names of Shropshire, Part 5, the Hundreds of Pimhill and Bradford North*. Nottingham: English Place-Name Society.

Gould, D., Creighton, O., Chaussee, S., Shapland, M. and Wright, D. 2024. Where power lies - the archaeology of transforming elite centres in the landscape of medieval England c. AD 800–1200. *Medieval Settlement Research* 39: 80–92.

Griffiths, D. 2003. Markets and 'productive' sites: A view from Western Britain, in T. Pestell and K. Ulmschneider (eds) *Markets in Early Medieval Europe: Trading and 'Productive' Sites*, 650–850. Oxford: Windgather: 1–11.

Griffiths, D. 2007. Early medieval material: AD 400–450 to 1050–1100, in D. Griffiths, R.A. Philpott, G. Egan (eds.) *Meols: the Archaeology of the North Wirral Coast*. Oxford University School Archaeology Monograph 68 Oxford: Oxford University: 58–77.

Griffiths, D. 2009. The archaeological background, in J. Graham-Cambell and R. Philpott (eds) *The Huxley Viking Hoard: Scandinavian Settlement in the North West*. Liverpool: National Museums Liverpool: 13–23.

Hadley, D. and Richards, J. 2021. *The Viking Great Army and the Making of England*. London: Thames and Hudson.

Hare, M. 2021. The fairs of Deerhurst. *Transactions Bristol and Gloucestershire Archaeological Society* 139: 297–300.

Historic England. nd. Roman road running from the Roman fort at Greensforge to Newtown (Wales) via Bridgenorth, Halford and Bishop's Castle Monument number 1358747. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=ada870bc-039e-4b41-add7-18c4e8e5cfde&resourceID=19191

Historic England. nd. Brycge Monument number 114799. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=114799&resourceID=19191

Historic England. nd. Saxon mint at Bridgnorth Monument number 1078718. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=1078718&resourceID=19191

Historic England. nd. Church of St. Chad Monument number 1213100 https://historicengland.org.uk/listing/the-list/list-entry/1213100?section=official-list-entry

Historic England. nd. A possible Roman road running from Greensforge to, possibly, Oakengates. Monument number 1326559. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=f79df360-a8a3-4392-8554-c59bcbd06232&resourceID=19191

Historic England. 1960. Tumuli Monument number 114590. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=6663188e-9c39-4174-8d66-198bd891ddf1&resourceID=19191

Historic England. 1960. Cropmark of a possible Romano-British Monument number 114722. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=114722&resourceID=19191

Historic England. 1979. Mound at Sandford Hall Monument number 7087911. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=288520df-65c0-4bb8-a857-00133642e72e&resourceID=19191

Historic England. 2003. The Walls: A large multivallate hillfort Monument number 1021065. https://historicengland.org.uk/listing/the-list/list-entry/1021065?section=official-list-entry

Historic England. 2004. St. Peters Church and Well Monument number 114492. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=114492&resourceID=19191

Historic England. 2015. Wenlock Priory Monument number 1004779. https://historicengland.org.uk/listing/the-list/list-entry/1004779?section=official-list-entry

Historic England. 2025. Medieval cross in St Peters churchyard, Worfield Monument number 01938. https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=MSA1444&resourceID=1015

Holland, M. 2012. *An Archaeological Survey of Land around Hanbury Cottage for the Severn Valley Railway*. Wolverhampton: Wolverhampton Archaeological Group.

Horovitz, D. 2010. A tale of two bridges: Cwatbrycge and Bridgnorth revisited. *Transactions of Shropshire Archaeological and Historical Society* 83: 1–17.

Lennon, B. 2009. Lēah names in the Anglo-Saxon charters of Wiltshire. *Wiltshire Archaeological and Natural History Magazine* 102: 175–187.

Lewis, M. 2024. The Portable Antiquities Scheme Annual Report 2023. London: British Museum.

Lias, A. 1991. *Place Names of the Welsh borderlands*. Ludlow: Palmers Press.

Lovell, C. 2004. Kingsland Primary School, Kingsland, Herefordshire; archaeological monitoring. Fownhope: Archenfield Archaeology.

Margary, I.D. 1967. *Roman Roads.* London: John Baker.

Martin, T.F. 2015. *The Cruciform Brooch and Anglo-Saxon England.* Woodbridge: Boydell.

Matthews, C.M. 2018. Holt Roman tile works: Geophysical Investigations 2018. Bronygarth: Archaeological Survey West LLP.

Mileson, S. and Brookes, S. 2014. A multi-phase Anglo-Saxon site at Ewelme. *Oxoniensia* 79: 1–30.

Mills, A.D. 2011. *A Dictionary of British Place Names.* Oxford: Oxford University Press. https://www.oxfordreference.com/display/10.1093/acref/9780199609086.001.0001/acref-9780199609086-e-9282?rskey=GFRODM&result=9388

Naismith, R. 2021. *Early Medieval Britain c. 500–1000.* Cambridge: Cambridge University Press.

National Trust. nd. Burgh (site of?), Quatford 1789308. https://archaeologydataservice.ac.uk/archsearch/record?titleId=1789308

Newman, J. 2003. Exceptional finds, exceptional sites? Barham and Coddenham, Suffolk, in T. Pestell and K. Ulmschneider (eds) *Markets in Early Medieval Europe: Trading and 'Productive' Sites, 650–850.* Oxford: Windgather: 97–109.

Oksanen, E. and Lewis, M. 2020. Medieval commercial sites: as seen through Portable Antiquities Scheme data. *The Antiquaries Journal* 100: 109–140.

Owen Crocker, G.R. 2004. *Dress in Anglo-Saxon England.* Woodbridge: Boydell.

Palmer, B. 2003. The hinterlands of three southern English emporia: Some common themes, in T. Pestell and K. Ulmschneider (eds.) *Markets in Early Medieval Europe: Trading and 'Productive' Sites, 650–850.* Oxford: Windgather: 1–11.

Paterson, C., Parsons, 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: Oxford Archaeology North.

Pestell, T. 2004. *Landscapes of Monastic Foundation: The Establishment of Religious Houses in East Anglia c. 650–1200.* Woodbridge: Boydell.

Pestell, T. 2012. Markets, emporia, wics and 'productive' sites: Pre-Viking trade centres in Anglo-Saxon England, in H. Hamerow, D.A. Hinton and S. Crawford (eds) *The Oxford Handbook of Archaeology*. Oxford: Oxford University Press: 556–579.

Pestell, T. and Ulmschneider, K. (eds) 2003. *Markets in Early Medieval Europe: Trading and 'Productive' Sites, 650–850.* Oxford: Windgather.

Ponting, M. 2023. Viking show their metal! National Museums Liverpool https://www.liverpoolmuseums.org.uk/stories/vikings-show-their-metal

Redknap, M. 2022. Early medieval metalwork from south-east Wales: Patterns and potential. *Archaeologia Cambrensis* 171: 73–114.

Reynolds, A. 2006. The early medieval period, in N. Holbrook and J. Juřica (eds). Twenty five years of archaeology in Gloucestershire: A review of new discoveries and new thinking in Gloucestershire, South Gloucestershire and Bristol. Cirencester: Cotswold Archaeology: 133–160.

Richards, J.D. and Naylor, J. 2009. The real value of buried treasure. VASLE: The Viking and Anglo-Saxon Landscape and Economy project, in S. Thomas and P.G. Stone (eds) *Metal Detecting and Archaeology*. Woodbridge: Boydell: 167–180.

Robbins, K. 2014. Portable Antiquities Scheme; A Guide for Researchers. London: British Museum.

Rowley, T. 1972. *The Shropshire Landscape.* London: Hodder and Stoughton.

Sayer, D. 2013. Christian burial practice in the early middle ages: rethinking the Anglo-Saxon funerary sphere. *History Compass* 11(2): 133–146.

Shaw, M. and Clark, J. 2003. *Cheshire Historic Towns Survey:* Farndon, Archaeological Assessment. Chester: Cheshire County Council.

Sheehan, J. 2009. The Huxley hoard and Hiberno-Scandinavian arm rings, in J. Graham-Cambell and R. Philpott (eds) The Huxley Viking hoard: Scandinavian settlement in the North West. Liverpool: National Museums Liverpool: 58–69.

Sherley-Price, L. (trans.) and Farmer, D. H. (ed.) 1990. B*ede's Ecclesiastical History of the English People.* London: Penguin.

Shoenfelder, M. and Richards, J. D. 2011. Norse bells – a Scandinavian colonial artefact, in H. Hamerow (ed.) *Anglo-Saxon Studies in Archaeology and History* 17 Oxford: Oxford University School of Archaeology: 151–168.

Sidebottom, P. 2020. *Pecsaetna: People of the Anglo-Saxon Peak District.* Oxford: Oxbow.

Silvester, R. and Hankinson, R. 2004. Early medieval ecclesiastical and burial sites in mid and north-east Wales: CPAT report 612. Welshpool: Clwyd-Powys Archaeological Trust.

Silvester, B., Martin, C.H.R. and Watson. S.E. 2012. Historic settlements in Flintshire CPAT Report 1142. Welshpool: CPAT.

Stanford, S. C. 1980. *The Archaeology of the Welsh Marches*. London: Collins.

Stanford, S. C. 1995. A Cornovian farm and Saxon cemetery at Bromfield, Shropshire. *Transactions of the Shropshire Archaeological and Historical Society* LXX: 95–142.

Swallow, R. 2016. Cheshire Castles of the Irish Sea cultural zone. *Archaeological Journal* 173(2): 288–341.

Stanford, S.C. 1980. *The Archaeology of the Welsh Marches*. London: Collins.

Stoertz, C. 2014. *The Marches Upland Mapping Project: A report for the National mapping programme.* Swindon: English Heritage.

Thomas, G. 2000. A Survey of late Anglo-Saxon and Viking Age strap ends from Britian. Unpublished PhD thesis, University College London.

Ulmschneider, K. and Pestell, T. 2003. Introduction: early medieval markets and 'productive' sites, in T. Pestell and K. Ulmschneider (eds) *Markets in Early Medieval Europe: Trading and 'Productive' Sites, 650–850.* Oxford: Windgather: 1–11.

Venning, T. 2013. *The Kings and Queens of Anglo-Saxon England*. Stroud: Amberley.

Walton Rogers, P. 2007. *Cloth and Clothing in Early Anglo-Saxon England*. Council for British Archaeology Research Report 145. York: Council for British Archaeology.

Watkin, W.T. 1879. Roman Shropshire. *Transactions of the Shropshire Archaeological and Natural History Society* 2: 317–363.

Williams, D. 1997. *Late Saxon Stirrup-Strap Mounts: A Classification and Catalogue*. CBA Research report 111. York: Council for British Archaeology.

Williams, G. 2009. Viking hoards of the Northern Danelaw from Cuerdale to the Vale of York, in J. Graham-Cambell and R. Philpott (eds) *The Huxley Viking Hoard: Scandinavian Settlement in the North West*. Liverpool: National Museums Liverpool: 73–83.

Willmott, H. 2022. Re-evaluating the landscape of early ecclesiastical foundation in the kingdom of Lindsey. *Church Archaeology* 21: 33–52.

Willmott, H. and Wright, D. W. 2021. Rethinking early medieval 'productive sites': Wealth, trade, and tradition at Little Carlton, East Lindsey. *The Antiquaries Journal* 101: 181–212.

Wynne, F. W. 1855. Roman remains in Wales No. VI. *Archaeologia Cambrensis* 1:4: 238–241.

Zaluckyj, S. 2002. *Mercia: The Anglo-Saxon kingdom of Central England*. Almeley: Logaston.

Pauline Clarke, Visiting Research Fellow, University of Chester
Email: p.clarke@chester.ac.uk