

## RESEARCH FRAMEWORK FOR THE ARCHAEOLOGY OF EARLY MEDIEVAL WALES c. AD 400–1070

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### **1. BACKGROUND**

It is now over a decade since the first publication of the *Research Framework for the Archaeology of Wales*. The early medieval section of the document reviewed the current state of knowledge and understanding of Wales in the period c. AD 400–1070 (Edwards *et al.* 2005). It also highlighted both the strengths and weaknesses in our knowledge and understanding as they were perceived at the time, as well as research issues and opportunities for the future. It concluded with a set of recommendations, which are still relevant, and are therefore restated here. It was proposed that the following should be given priority:

- 1.** Identification of potential early medieval sites, particularly secular settlements, through collation and assessment of new and existing information sources.
- 2.** Confirmation of potential early medieval sites through fieldwork, trial excavation and the application of dating techniques.
- 3.** Full archaeological investigation and characterisation of a sample of identifiable early medieval sites, both secular and ecclesiastical, in different regions, through fieldwork and excavation, and an understanding of their location in the wider landscape, both physical and temporal.
- 4.** Detailed analysis of early medieval artefacts and their contexts and characterisation of site assemblages.
- 5.** Identification and analysis of environmental evidence from excavated samples and increased pollen sampling.
- 6.** Analysis of human remains for information on origins, demography, health, nutrition and transfer of pathogens.
- 7.** Improving understanding of the chronological framework for the period through the application of all available methods and increased use of radiocarbon dating, especially on multi-period sites.
- 8.** Engaging with relevant research on early medieval material culture elsewhere in Britain and Ireland thereby setting the evidence from Wales within a broader context.

It was also argued that if there were significant advances in these areas, there would be increased opportunities to address broader issues including:

- a. Establishing a hierarchy of secular settlement types in a broader landscape, analysing regional and chronological differences and considering the implications for an increased understanding of early medieval society in Wales.
- b. Constructing a better understanding of the economy: organisation and exploitation of land and resources, the impact of climate and other changes on the landscape, craft-working and mechanisms of exchange and trade.
- c. Gaining insights into the chronology and process of Christian conversion, the evolution and changing functions of religious sites and the broader impact of these on the landscape and early medieval society in Wales.
- d. Building increased understanding of the changing relationships and mechanisms of contact between different parts of Wales with England, the Irish Sea zone and further afield, as well as the survival of Romano-British culture and the Viking impact (Edwards *et al.* 2005, 43).

It was observed at the time that, because so many fundamental questions remained to be answered about this iconic period in the evolution of Wales between the end of Roman control and the coming of the Normans, this had serious funding implications. Nevertheless, it was envisaged that aid for modest start-up projects would, if successful, result in further grant capture from a wider range of sources. The importance of partnerships, which might also embrace both heritage and tourism as well as other bodies, and the potential of community participation were also mentioned (Edwards *et al.* 2005, 43).

In 2010–11, the *Research Framework* was updated. The early medieval section reviewed the evidence and developments during the intervening period and concluded that, although modest advances had been made in the meantime in some areas, the recommendations set out in 2005 should remain unaltered (Edwards *et al.* 2011, 1). However, some additional recommendations were made:

- i. It was suggested that a research project to review the history, character and results of early medieval archaeological excavations in Wales, including those in the 'grey literature', and an analysis and synthesis of the results would be valuable as a basis for future work.

- ii. Attention was drawn to the growing importance of radiocarbon dating in identifying and establishing chronologies for all early medieval sites. It was further emphasised that multiple dates from secure contexts, which might enable Bayesian statistical analysis, should be obtained wherever possible.
- iii. The value of stable isotope analysis of human remains was highlighted, indicating the potential for future research. (Edwards *et al.* 2011, 17–18)

It was also noted that 'the lack of financial resources in the current economic climate would make major advances in the short term much more difficult' (Edwards *et al.* 2011, 19).

As a result of the UK Government policy of financial austerity, the period since has seen an ongoing decline in Welsh Government funding available via Cadw for targeted archaeological work linked to a better understanding and protection of the archaeological resource of the type which resulted in, for example, the Welsh Archaeological Trusts' *Early Medieval Ecclesiastical Sites* project completed in 2004, which made significant advances in our understanding of the archaeology of the early church in Wales (Silvester and Evans 2009; Davidson 2009a; Ludlow 2009; Evans 2009; Longley 2009). Scheduling enhancement projects, such as those on fields in Gwynedd (Kenney 2015) and the Whitford Dyke, Flintshire (Jones 2013; 2015), have, however, continued, though comparatively little attention has been directed to the early Middle Ages specifically. Similarly, the partnership which began between the now defunct University of Wales Board of Celtic Studies, National Museum Wales and the Royal Commission which initiated the *Corpus of Early Medieval Inscribed Stones and Stone Sculpture in Wales* project (Redknap and Lewis 2007; Edwards 2007; 2013) enabling further successful research funding applications would no longer be possible today. In this increasingly tough economic climate academic grant capture, especially for excavation, has also become much more competitive. However, small sums have funded excavations to reassess the dating of the hillfort at Dinas Powys, Vale of Glamorgan (Lane and Seaman 2013; Seaman 2013), and (alongside Cadw funding) the context of the Pillar of Eliseg, Denbighshire (Edwards, Robinson and Williams 2015; forthcoming), whilst grants from the Nineveh Trust charity, and the University of Sheffield facilitated the analysis of human remains excavated from the cemetery of St Patrick's Chapel, St Davids, Pembrokeshire (Hemer forthcoming).

Therefore, the current focus on community archaeology projects remains a life-line and these, together with more and a greater range of public engagement, will be vital to the success of projects in the future.

Over the past five years community participation has enabled, for example, small-scale excavations of an early medieval settlement at Rhuddgaer, Anglesey (a Communities First area) (Hopewell 2016), and the total rescue excavation of the threatened part of an early medieval cemetery at St Patrick's Chapel, St Davids, Pembrokeshire, both Cadw funded (Murphy, Page, Crane and Wilson 2014; Murphy, Shiner and Wilson 2015). Similarly, there has been a Cardiff University Arts and Humanities Research Council funded Communities First project which has examined the multi-period hillfort at Caerau, Ely, Cardiff, though the possible early medieval refortification of the site remains to be confirmed by scientific dating (Davis, Sharples and Wyatt 2015; Davis et al. 2015). The value of community Heritage Lottery Grants has been demonstrated in the redisplay of early medieval sculpture at Llantwit Major Church, Vale of Glamorgan. It is therefore important that, with the aid of start-up grants, funding is sought from as wide a range of sources as possible to enable the initiation of new community projects focusing on the early medieval archaeology of Wales with research agendas capable of attracting more ambitious grant capture. Crucial to the success of this, however, will be taking on the challenge of explaining why this research is significant to as wide a range of audiences as possible in both Welsh and English.

Although not specifically linked to the research framework, in the current financial climate developer-funded rescue excavations, though fewer in Wales than in many parts of England, have taken on an even greater importance in increasing the number of early medieval sites recognised and investigating them. Even so, too often the significance of sometimes ephemeral remains is only identified after excavation with the return of early medieval radiocarbon dates, if they are sought. Furthermore, all too frequently there are insufficient dates to allow a proper chronology to be constructed and in some instances, especially where Roman ceramics are found, the assumption is that the site is Roman rather than later and so no samples for dating are taken. Equally, agreed strategies need to be put in place consistently for the proper analysis of environmental data. Moreover, developer-funded 'grey literature' reports are of varying quality and seldom allow for much analysis or contextual discussion and potentially important results often fail to be sufficiently disseminated. Nevertheless, steps are now being taken to improve the situation and these need to be actively supported. 'Grey literature' reports are now increasingly becoming available on *Archwilio* and, although only a fraction relevant to Wales are currently available on the Archaeology Data Service (ADS) website, negotiations

are underway to ensure that they will be available when the on-line Index of Archaeological Investigations, *OASIS* project is relaunched (pers. comm. Marion Shiner).

The results of extensive research excavations and large infrastructure projects have been particularly prone to delays in reaching final publication. Nevertheless, over the past five years the outcomes of an important series of developer-funded excavations (1999–2000), including sites with early medieval activity, along the line of the A55 across Anglesey have finally been published (Cuttler *et al.* 2012). However, early medieval sites discovered as a result of excavations carried out along the immense 216km length of the South Wales Gas Pipeline running from Milford Haven, Pembrokeshire, to Brecon, Powys, in 2005–7 (carried out by Cotswold Archaeology and Cambrian Archaeological Projects), are only now reaching the 'grey literature' report stage and these are now being made available on *Archwilio*. The excavations at Parc Cybi, Holyhead, Anglesey (2006–8), included an early medieval cemetery and were financed by the Welsh Government (Kenney 2007, 77; Kenney *et al.* 2011, 103–9). However, owing to financial austerity, there has not so far been the funding to complete the post-excavation phase.

In the future there are serious implications for archaeology, not only because of ongoing austerity resulting in a serious funding cuts affecting all aspects of heritage in Wales and increasing competition for research funding, but also as a result of leaving the European Union, particularly for Category 1 funded areas. Large infrastructure projects in Wales, such as road schemes, which provide important opportunities for rescue excavations, have frequently received European funding, as have heritage schemes, which sometimes have an archaeological input.

Therefore, the financial climate has seriously deteriorated over the last five years and is set to become still bleaker. Although, during that time piecemeal advances have been made in our knowledge and understanding of the archaeology of early medieval Wales, larger projects which might have gone further towards answering some of the questions posed in the original research framework, have been lacking. This is not helped by continuing difficulty in the recognition of characteristic early medieval settlement sites in particular. Furthermore, in a non-rescue situation, the frequent lack of diagnostic artefacts, especially ceramics, which makes recognition of many early medieval sites so difficult, may have led to a perception that the potential gain involved in investigating them was not worth the risk. As a result the research agenda put forward in 2005 remains as relevant today as it was eleven years ago.

## 2. AIMS AND OBJECTIVES

The following discussion will first review the significance of recent research and discoveries to our understanding of the archaeology of early medieval Wales c. 2010–16, taking broadly the same headings as those in previous reviews for ease of use. It will also identify where possible how recent work relates to the present research agenda and the point(s) to which it relates are shown using numbers and letters in **bold** in square brackets in the text. A summary of the main conclusions is followed by recommendations and an addition to the 2005 research agenda, as well as a brief discussion of where the early medieval research framework has been used over the last five years as a means of justifying research and funding. Finally, there is a separate bibliography of publications relevant to the archaeology of early medieval Wales published c. 2010–16.

## 3. RESEARCH AND DISCOVERY: THE ARCHAEOLOGY OF EARLY MEDIEVAL WALES, c. 2010–16

It is important that the results of archaeological research and discovery concerning Wales c. AD400–1070 should, wherever possible, be considered within a wider historical as well as archaeological framework and a multidisciplinary approach can also be of considerable value. In this context, therefore, the publication of Thomas Charles-Edwards's *Wales and the Britons 350–1064* (2013) should be regarded as a landmark. Focused on close scrutiny of the written sources, it has the potential to cast light on many aspects of life in early medieval Wales. It is also the first major historical analysis since Wendy Davies's *Wales in the Early Middle Ages* (1982) and only the second since J. E. Lloyd's *History of Wales from the Earliest Times to the Edwardian Conquest*, first published in 1911. In contrast, despite some local studies, the potential of research on place-names, which might act as a significant aid in the identification of early medieval sites, is yet to be realised and research in this field remains many years behind that in England. The recent Welsh Government initiative to establish and maintain a *List of Welsh Historic Place-Names* under the aegis of the Royal Commission is therefore to be welcomed as a means to encourage further academic research that would include work on the significance of place-names relevant to the early medieval period.

### 3.1 Settlement Archaeology

More than a decade on from the first *Research Framework*, it remains remarkably difficult to locate and identify settlements and dwellings

datable to the period c. AD400–1070, not only across Wales but also in much of the rest of western and northern Britain (Edwards and Lane 1988; Edwards 1997; Blair 2013, 4–14). Overall, although the number of early medieval settlements recognised in north-west and south-west Wales is increasing very slowly, there remain very few indeed in the south-east whilst none at all have been identified in recent years in north-east Wales or the Marches. It is also important to recognise that there are likely to be significant regional and chronological variations in settlement types and building materials in different parts of Wales.

Kate Waddington (2013) has reviewed the evidence for settlements in north-west Wales from the Late Bronze Age through to the early medieval period emphasising the importance of the *longue durée* and, though early medieval settlements frequently lack visibility, their locations appear to indicate a continuing sense of place within ancient settled landscapes [1.]. This may be seen, for example, at Cefn Graeanog, Gwynedd, where an important, intermittent, ongoing programme of rescue excavations has been conducted since the late 1950s in advance of gravel quarrying. The soils are free-draining and the sequence of use and sometimes reuse of agricultural settlements spans the Later Iron Age, Roman, as well as the early and later medieval periods (Kelly 1982; Fasham *et al.* 1998; Waddington 2013, 223–30). In the Vale of Glamorgan, however, Andrew Seaman (2010a; 2010b) has taken a very different approach. He has argued for the value of using GIS to create a predictive model in order to locate early medieval settlements in relation to those of the Roman and later medieval periods and has identified the potential significance of lowland ‘core settlement zones’ with free-draining soils [1.]. Although there are potentially major cost implications, a multidisciplinary approach is clearly needed to give the best chance of establishing criteria for locating early medieval settlements as an element in the wider landscape. This should make use of an integrated approach employing documentary and place-name evidence where possible, as well as GIS, air-photography and LiDAR together with interrogation of the wider archaeological context and identification of finds scatters, followed up by appropriate geophysics, trial trenching and, where it is warranted, more sustained excavation.

In south-east Wales in particular there are major questions concerning the fate of Roman period settlements from around the middle of the fourth century onwards when coins and ceramics, which still provide the major form of dating evidence, become less common. A recently published promontory site at Sudbrook Road, Portskewett, Monmouthshire (Brett *et al.* 2015), demonstrates this well. Midden

material and enclosure ditches were found indicative of Roman period high-status occupation nearby and it was assumed that the site was abandoned in the mid-fourth century when the coin sequence ends. A small amount of shell-tempered ware, which post-dates the mid-fourth century, was recovered from an earth and rubble bank and there was a burial radiocarbon dated to the seventh or eighth centuries AD overlying later alluvium and colluvium deposits. There are, however, no other radiocarbon dates which might help to establish the chronology more precisely. Excavations at the hillfort of Caerau, Ely, Cardiff, have also indicated that the inner rampart overlay layers containing Roman grey-ware pottery suggesting possible reconstruction of the hillfort boundary in the late or post-Roman period and this now needs to be clarified by radiocarbon dating (Davis, Sharples and Wyatt 2015, 41–2).

Ray Howell (2012) has also reviewed the growing evidence for early medieval activity in and around the legionary fortress at Caerleon, though the implications of these discoveries are harder to discern. Excavations (2007–10) in Priory Fields in the south-eastern part of the fort revealed a military warehouse occupied into the later fourth century with a subsequent phase of unmortared stone buildings which are probably early medieval, though closer dating is now needed as part of the post-excavation stage (Gardner and Guest 2010, 11–12, fig. 4). It is therefore essential that sufficient samples for radiocarbon dating are obtained during all excavations of Roman sites, especially those occupied in the latter part of the period, in order to verify the chronological sequence and identify sometimes ephemeral post-Roman activity.

There has been comparatively little work on early medieval high-status settlements since 2010. Excavations of the Later Iron Age and Romano-British roundhouse settlement at Cefn Cwmwd, Anglesey, where post-Roman high-status artefacts were found in overlying rubble spreads, have finally been published (Roberts *et al.* 2012, 30–65) and post-excavation analysis has finally been completed on the key site of Llangors crannog, Powys (Redknap and Lane 1994; 1999). At the post-Roman and Viking Age settlement at Llanbedrgoch, Anglesey (Redknap 2004), there was further excavation in the south-western area of the enclosure in 2012 revealing internal midden and earlier sequences, another extra-mural burial and early medieval artefacts, including a penannular brooch, hacksilver and glass. Post-excavation has now begun and further radiocarbon dates have been obtained (Redknap 2016b; pers. comm.)

In addition, there has been a review of defended early medieval sites (Seaman 2016) and a small but significant project focused on the multivallate promontory fort of Dinas Powys and the adjacent Ty'n y Coed

earthworks. The latter has begun to re-evaluate Leslie Alcock's discoveries in the late 1950s and use targeted excavation to retrieve short-life charcoal samples for radiocarbon dating [2.]. Those from under Bank 1 (Phase B) span the second half of the sixth and first half of the seventh centuries AD, thereby confirming dating suggested by the imported ceramics (Alcock 1963; Campbell 2007, 96–7, figs 67–8; Lane and Seaman 2013; Seaman 2013, 6–7). There have also been potentially important trial excavations on a triangular promontory fort at Glanfraid, Geneu'r Glyn, Ceredigion, carried out as a result of the S4C television series *Olion*. This was shown up as a crop-mark in aerial photography by the Royal Commission and assumed to be Iron Age until radiocarbon dates were returned identifying early medieval activity, including iron-working (DAT Archwilio PRN 241; pers. comm. Iestyn Jones). This confirms therefore the long-held assumption that a considerable number of early medieval defended sites have wrongly been identified as Iron Age, though at present recognising them only appears possible through trial excavation accompanied by radiocarbon dating.

At the very end of the period there are some indications of an increased interest in the construction of defended sites, though whether this was simply in response to unsettled times or inspired more specifically by Norman incursions is impossible to say. Excavations of a previously undated site at Hen Gastell, Llanwnda, Gwynedd, revealed a small, sub-rectangular, banked enclosure with a deep ditch within which there was a timber building of post-hole construction which was interpreted as a high-status site. Radiocarbon dates suggest it was constructed and occupied for three or four generations during the eleventh or twelfth centuries (Kenney 2016). On a smaller scale, trial excavation of a sub-rectangular crop-mark enclosure near St Mary's Church, Llanfairpwll, Anglesey, discovered by aerial photography, uncovered evidence for a defended site of similar date (Smith 2012).

There have been some important breakthroughs regarding the recognition of lower status settlements of early medieval date which may ultimately provide important markers in identifying characteristic early medieval site types and building a chronology, though these sites were only recognised as a result of radiocarbon dating. Firstly, at Rhuddgaer, which is located on fertile soils in south-west Anglesey but is now covered in sand, geophysical survey revealed a series of field-systems, the earliest of which is associated with several sub-rectangular structures. This was followed up by exploratory excavation of one of these structures, which was directly associated with a field wall. It consisted of a sub-rectangular building with substantial drystone wall footings and opposed entrances in

the long sides. Dating evidence was provided by four early medieval radiocarbon dates, two of which suggest that the building was probably in use during the seventh or eighth centuries (Hopewell 2016) [2., 7.]. Although there is a Romano-British settlement nearby and the sub-rectangular shape of the building has Roman origins, the layout of the settlement with its field-system would seem to be very different from the pattern of continuity and reuse seen at Cefn Cwmwd and Cefn Graeanog, thereby suggesting a major change in the settlement pattern in this period (Edwards and Hopewell forthcoming). However, this potentially important hypothesis requires further larger-scale excavations in order to confirm or refute it. The plan of the building also suggests that some similar lowland structures, which have been assumed to be later medieval, might in fact be earlier or have earlier origins, again emphasising the need for excavation and radiocarbon dating. At Carrog, Llanbadrig, Anglesey, part of a rectangular dwelling indicated by stones, interior paving, post-holes and stake-holes was excavated overlying the ditch of a Late Prehistoric hilltop enclosure. A single radiocarbon determination dated it to the second half of the eighth or ninth centuries AD (Smith 2014, 60–1, 81, fig. 2.5).

Turning to the south-west, the important publication of rescue excavations at South Hook, Herbranston, Pembrokeshire, a nucleated settlement, includes at least two probably domestic, sub-rectangular, wooden buildings set in hollows, together with evidence of crop-processing and iron-working (Crane and Murphy 2010). Radiocarbon dates suggest occupation from the late eighth to the mid-twelfth centuries AD and it is possible that we are seeing a settlement similar to Rhuddgaer but using different building materials. Another similar building has recently been recognised on the site of an earlier hill-top enclosure at Conkland Hill, Wiston, Pembrokeshire, as a result of radiocarbon dates which span the mid-seventh to early eleventh centuries AD (Hart 2014).

In other instances, however, finds of crop-processing evidence, particularly corn driers, and iron-working debris continue to be made which are strongly suggestive of activities being carried out on the periphery of early medieval settlements which remain undiscovered (see below). For example, the publication of small-scale excavations of an early medieval cemetery with a possible chapel at West Angle Bay, Pembrokeshire, also revealed a large rectangular enclosure. Charred cereals were recovered from the ditch fill and a corn-drier or hearth radiocarbon dated to the seventh or eighth centuries AD was found in the annexe. These suggest settlement within the enclosure prior to and/or contemporary with the cemetery and there are also the remains of a

largely destroyed undated promontory fort nearby (Groom *et al.* 2011, 167–82, 193–4). Further excavation and radiocarbon dating would help to clarify these associations and sequences. At Cefn Du, Gaerwen, Anglesey, late Iron Age and Romano-British structures included evidence of later activity. Cereal from an adjacent spread was radiocarbon dated to between the late fourth and early eighth centuries AD and it was suggested that a corn-drier radiocarbon dated to the eleventh or twelfth centuries might have been preceded by ephemeral structural evidence, possibly of early medieval date (Cutler *et al.* 2012, 19–20, 228–31). Therefore, in the future it is important to look beyond evidence of this kind for the remains of dwellings and other structures which stood nearby. Equally, the wider contexts of metal-detected early medieval finds reported to the Portable Antiquities Scheme need to be systematically assessed and investigated where appropriate in order to locate potential sites.

Therefore, some progress is being made in the identification of potential early medieval secular settlements [1.], largely through aerial photography and geophysics followed up by trial excavation, but some discoveries are also being made as a result of rescue archaeology. It is therefore vital that sufficient radiocarbon dates are obtained from often insubstantial structures on all excavations, including those which are developer-funded, in order to identify early medieval dwellings [2.], especially since diagnostic finds are rare and seldom survive in acidic soils. Although progress has been limited it has, nonetheless, enabled some movement towards 'establishing a hierarchy of secular settlement types in a broader landscape, [and] analysing regional and chronological differences' [a.]. Significantly, however, over the last decade there has been no full archaeological investigation and characterisation of a sample of such sites [3.]. Rescue excavations, notably at South Hook, have also played an important role and, until more, larger-scale, research investigations are also carried out, it is unlikely that significant breakthroughs will be made thereby enabling an 'increased understanding of early medieval society in Wales' [a.].

### **3.2 Economy, Land-use and the Exploitation of Landscapes and Natural Resources**

In the 2005 *Research Framework* some very basic questions were set out with the aim of directing work to enable a better understanding of the early medieval economy in Wales as well as land use and the exploitation of landscapes and natural resources (Edwards *et al.* 2005, 38). These were reiterated in 2011:

What was the wider environmental context of the early medieval landscape? What was the detail and nature of early medieval patterns of industrial activity, exchange and trade? How were local systems of agricultural production organised, and what did they consist of? What use – for both subsistence and other aspects of economic production – was made of the range of different environments across Wales? (Edwards *et al.* 2011, 4)

It was also recommended that there was consistent 'identification and analysis of environmental evidence from excavated samples and increased pollen sampling' [5]. However, in some developer-funded excavations likely to be of early medieval date, the former has not moved beyond the assessment stage while the number of new well-dated pollen cores over the last five years relevant to the early medieval period remains at around the same level as a decade ago. The current lack of a Cadw scientific advisor in Wales similar to those in Historic England is also likely to have a detrimental effect on the co-ordination and development of such work in the future.

Over the past five years there have been a number of major research projects and publications concerned with exploitation of the land and the changing economy in Anglo-Saxon England which has also contributed to an ongoing debate on the continued exploitation of prehistoric field-systems (Banham and Faith 2014; Oosthuizen 2011; 2013; Rippon *et al.* 2014; 2015; Williamson 2016). There has also been a thorough review of archaeological evidence for farming and the wider economy in early medieval Ireland (McCormick *et al.* 2011; Kerr *et al.* 2012; 2013; O'Sullivan *et al.* 2014, 179–281). Although there have been significant advances in environmental archaeology in Wales over the last thirty years, including key developments for the early medieval period (Caseldine 2015), recent progress has largely been piecemeal. Despite a couple of larger research projects aimed at answering bigger questions (Davies 2015; Rippon *et al.* 2015) and smaller scheduling enhancement exercises (e.g. Silvester and Hankinson 2013; Kenney 2015), work has mainly focused on individual pollen diagrams, analysis of environmental material, particularly charred grain, from rescue or exploratory excavations and the continuing importance of metalwork discoveries reported to the Portable Antiquities Scheme.

### 3.2.1 Pollen Analysis and other Palaeoenvironmental Studies

Pollen analysis aids our understanding of the environmental contexts of individual sites as well as the reconstruction of landscapes and how they developed over time in response to environmental change and human

interventions enabling wider comparisons. In Wales, however, site-based pollen analysis has only rarely been undertaken on early medieval samples. The analysis of ditch deposits at Arddleen (Grant and Shimwell 2004) and the buried soil from Rhuddlan (Tomlinson 1987) still represent the only reliably dated, published work. Research on the environmental context of the short dykes in Powys is in progress (Caseldine forthcoming) and is likely significantly to improve our understanding of the environmental context of these monuments.

More generally, Rippon *et al.* (2015, 295–304) have commented on the relatively rich upland pollen record for Wales but the comparative lack of other types of environmental evidence for establishing the extent of continuity or discontinuity between the late Roman and early medieval periods compared with England. Nevertheless, our understanding of the wider environment of early medieval Wales has been enhanced by a review of pollen studies with well-dated early medieval environmental sequences across Wales (Davies 2015). Although there are gaps in the distribution of relevant sampling sites for this period (especially in lower lying regions where the focus on arable farming and settlement might be expected), some observations on regional environmental changes can be made. During the transition into the early medieval period in the fifth and sixth centuries, a major downturn in the farming economy is suggested by declining arable and pastoral pollen indicators. Woodland and heath levels in south Wales increase implying the abandonment of some farming or settlement areas. However, in the north-west, sampling sites exhibit a mixture of deforestation and reforestation, which challenges traditional interpretations of a 'retreat from the margins' at the onset of the early medieval period. During the seventh and eighth centuries, a reversal of this farming decline is suggested by increased arable and pastoral pollen indicators and greater numbers of woodland clearances across Wales. The evidence for an expansion in farming at this time may be related to archaeobotanical evidence for changes in crop types observed at West Angle Bay and South Hook, Pembrokeshire (see below). This could be representative of developments in settlement (see above), changes in society and the growing power of the Church observed in Wales and across northern Europe at this time. Palynological changes in the closing centuries of the early medieval period across Wales show increased regional diversity. There are, as yet, no clear patterns relating to woodland levels or arable farming practice, though there is a generally higher level of pastoral indicators from the ninth to the mid-eleventh century. It is suggested, however, that spatial differences in arable output in north Wales may be representative of strategic intervention in farming

activity initiated by the rulers of Gwynedd (Davies 2015, 218–34). These hypotheses now need to be tested and refined by further palaeoenvironmental work across Wales.

Despite a number of palaeoenvironmental studies relating to lakes, peat bogs and river systems in Wales, few conclusions have been drawn concerning the early medieval period. This is largely the consequence of a lack of targeted research, but also stems from a deficient number of radiocarbon-dated profiles from the historic period. Some useful observations can, however, be made in relation to the development of the early medieval environment, thereby highlighting the need for future research. For example, examination of the Severn floodplain at Welshpool, Powys, suggests decreased sedimentation rates with the onset of the early medieval period, and a subsequent rise c. AD 800 (Taylor and Lewin 1996), which is consistent with studies of other floodplain systems in Britain (Lewin 2010). Recent work by Davies (2015) has examined the palaeolimnological and pollen record of Llyn Tegid, Gwynedd, in combination with peat deposits from Cwm Lliw, identifying spatial variation in farming activity consistent with the pollen signature expected from transhumance farming. At Erglodd, Llangynfelyn, Ceredigion, pollen and other palaeoenvironmental sampling during excavation of a Roman lead-mining site and early to mid-eleventh century wooden trackway on the edge of Cors Fochno, have proved particularly fruitful in reconstructing landscape change (Caseldine *et al.* 2012, 330–1, 334). Other significant local pollen studies have been carried out in the Aber Valley, Gwynedd, and at Craig y Dullfan, near Plynlimon, Powys (Woodbridge *et al.* 2012; Caseldine 2013, 275–90). To begin to redress the upland bias, a pilot project has also been done in the eastern Vale of Glamorgan (where Dinas Powys and Caerau hill-forts and the monastery at Llandough are all located). This should now be followed up by more detailed pollen sampling and analysis of well-dated cores (Davies *et al.* 2015) [5.]. Examination of charcoal, as for example, at South Hook (Challinor 2010), is also beginning to build up snap-shots of woodland, hedges and uncultivated land in the vicinities of sites.

The uplands potentially hold some of the most intact and undisturbed archaeological remains in Wales. Nevertheless, our knowledge and understanding of the extent of early medieval exploitation of upland environments and changes in this over time, remains woefully inadequate. For example, to what extent were these landscapes used for transhumance during the early Middle Ages and what archaeological remains might survive? Although the RCAHMW *Uplands Archaeology Initiative* (Browne and Hughes 2003) has now ceased due to lack of

funding, this identified over 42,000 sites from all periods across Wales. However, as there has been very little excavation, almost no early medieval examples have been recognised. We thus need to know to what extent this may be due to their lack of typologically recognisable features and their incorrect assignment to other periods, rather than their non-existence. Because of their remote locations, these are the least likely to be affected by developer-led excavations and therefore any detailed investigation of potential early medieval sites is likely to be research driven. Again, where excavations are undertaken, sufficient radiocarbon dates are imperative, as these may lead to the recognition of early medieval activity and thereby a better understanding of potential early medieval phases on upland sites.

### 3.2.2. *Field-systems, Archaeobotanical Remains, Animal Bone and Related Evidence*

Compared with England, we still know remarkably little about late Roman and early medieval field-systems in Wales (Edwards *et al.* 2005, 37; Rippon *et al.* 2014, 295). In relation to the downturn in the fifth and sixth centuries AD noted in some regions in the pollen record, to what extent was there continuity of land-use and field-systems, perhaps from the later prehistoric and Roman periods onwards into the early medieval and later? Can the establishment of new field systems be recognised during the early Middle Ages and, if so, when and what is the significance of this? When do we begin to see ridge and furrow commensurate with the adoption of a plough with a mould-board to turn the sod? What are the origins of Welsh *rhandiroedd* ('sharelands') and other terms mentioned in the later Welsh laws and to what extent are the origins of open field systems in eastern Wales a product of Anglo-Norman conquest rather than earlier Anglo-Saxon infiltration and influence? A start has been made with recent reviews of surviving evidence for medieval and earlier field systems in northern and eastern Wales, though little specific to the early medieval period has emerged (Smith *et al.* 2011; Silvester and Hankinson 2013; Kenney 2015). Nonetheless it has been suggested that in the north-west some later prehistoric field-systems may continue in use with little alteration into the later middle ages (Kenney 2015, 13–19), but precise dating is difficult and now needs to be pursued wherever possible. The geophysical survey of a series of field-systems at Rhuddgaer, Anglesey, and the exploratory excavation of a building of probable seventh- or eighth-century date with a directly associated field wall (see above) is therefore of considerable interest (Hopewell 2016, 12–13, 17,

figs 2–3, pl. 2) and work of this kind now needs to be carried out elsewhere.

Van der Veen *et al.* (2013, 154) have recently drawn attention to the comparative lack of available archaeobotanical data relevant to the Middle Ages in northern and western Britain, including Wales, compared with the south-east. Nevertheless, charred plants represent the most abundant environmental remains of early medieval date found on archaeological sites in Wales and the discovery of corn-driers and pits containing charred grain assemblages is becoming increasingly common since they are clearly visible in rescue excavations, even if their date is often only recognised following radiocarbon determinations. Our understanding of these structures and archaeobotanical remains has greatly benefited from publication of several excavation reports over the last five years. These include sites excavated along the A55 on Anglesey at Cefn Du and Melin y Plas (Ciaraldi 2012), Buttington Cross, Powys (Mann and Hurst 2014) and South Hook and West Angle Bay, Pembrokeshire (Carruthers 2010; Caseldine and Griffiths 2012). Relevant reports are also beginning to emerge on several sites excavated along the route of the South Wales Gas Pipeline in 2005–7, such as Conkland Hill, Pembrokeshire (Hart 2014).

Charred cereal assemblages from domestic and other early medieval contexts frequently contain barley, oats and bread wheat, although the dominant crop often varies significantly both between and across sites. Of particular note is the work at South Hook and West Angle Bay, where a possible shift in preference from club type to bread type wheat, barley and oats has been identified in the latter part of the period (Carruthers 2010, 172, 178–80; Caseldine and Griffiths 2012, 181). Arising from this, it is important to examine further the chronology and possible reasons – environmental, climatic, technological and cultural – which may lie behind changes in the exploitation of particular cereal crops: from spelt, which dominated during the Roman period, to free-threshing bread wheat during the early medieval, and the increasing importance of oats (which is easier to grow in difficult environmental circumstances), as the period progresses (Caseldine 2016). Examinations of the weed species accompanying charred cereal grains at South Hook (Carruthers 2010, 173), Cefn Du and Melin y Plas (Ciaraldi 2012, 238) suggest cultivation of heavy clay soils, possibly indicative of the adoption of the heavy mouldboard plough during the early medieval period. However, as yet there is no direct evidence in the form of cultivation ridges of definite early medieval date. Other, non-cereal food remains include low frequencies of hazelnut and berries found, for example, at

South Hook and Melin y Plas (Carruthers 2010, 180; Ciaraldi 2012, 238). However, the scarcity of these suggests that they were supplementary to early medieval diets. The use of seaweed, as a component of the human diet, as animal fodder or as a fertiliser is also a possibility, particularly in south-west Wales, in light of the discovery of charred seaweed at Brownslade, and recent results from the isotopic analysis of human remains from Pembrokeshire (Hemer *et al.* 2016).

Animal bone assemblages dating to the early medieval period in Wales remain exceptionally rare and therefore it is particularly important that early medieval sites with good bone preservation are given the highest priority for investigation in the future. The analysis of the animal bones retrieved from Dinas Powys remains the only publication of a large assemblage to date; yet, given the sampling bias of the original excavation, its value is very limited (Seaman 2013, 8). However, the forthcoming reports on the animal bone, both domestic and wild, from Llangorse crannog and Llanbedrgoch by Jacqui Mulville and Adrienne Powell, and the analysis of animal bone excavated from St Patrick's Chapel will undoubtedly contribute to our understanding of both husbandry and diet. It is, however, uncertain how representative these sites may be in relation to early medieval Wales as a whole, even if possible geographical variation is considered, since they are from either high-status or ecclesiastic contexts with evidence for a range of external contacts. The potential of the faunal remains from post-Roman features at Priory Fields, Caerleon, offers the prospect of comparison with earlier assemblages from the fort as well as with animal bone assemblages from other Roman and later sites, including Wroxeter (Hammon 2011).

Crescentic mounds of burnt stone associated with troughs where water was heated using hot stones and fire sites are common structures found in Wales, as well as in Ireland. Though their functions are keenly debated, cooking meat still seems the most likely in many cases. Most have been radiocarbon dated to the Bronze Age, but there are a small number with earlier and later dates, including early medieval, for example, Pentrefelin, Gwynedd. This is indicative of a very long-lived site type and underlines the importance of sufficient radiocarbon dates to refine their chronology (Kenney 2012; Kenney *et al.* 2014, 9, PRN 34906).

There has yet to be any significant study of early medieval mollusc and fish-bone assemblages in Wales owing to the lack of evidence. Therefore the identification and investigation of suitable sites and the recovery and analysis of such assemblages in the future is very important. Nevertheless, some research on molluscs was carried out at

Brownslade (Bell and Brown 2011). Likewise the significance of fishing amongst at least some coastal communities is indicated by the discovery of the remains of a small number of fish-weirs and traps radiocarbon dated from the late eighth century onwards. These have been found at Sudbrook Point, Monmouthshire, and elsewhere on the English side of the Severn estuary and inner Bristol Channel (Brown *et al.* 2010; Chadwick and Cathchpole 2010).

In addition, carbon, nitrogen and sulphur isotope analysis of human skeletal material provides an important indication of the dietary resources consumed by each sampled individual, and from this the use of particular resources by wider populations. Such evidence can shed important light on the use (or otherwise) and consumption of natural resources, such as seaweed for manuring, and thereby wider agricultural practice in early medieval Wales. Furthermore, isotope analysis of skeletons from coastal sites at Brownslade, West Angle, St Patrick's Chapel and Porthclew, Pembrokeshire, suggest that marine protein was not a significant contributor to the diet, though small amounts of coastal fish and shellfish may, nevertheless, have been consumed in addition to freshwater species (Hemer 2011, 186–7; Hemer *et al.* 2016; see below).

### 3.2.3. *Exploitation of Natural Resources, Craft-working, Artefacts and Trade*

Our understanding of the exploitation of a range of natural resources, the manufacture of artefacts and the mechanisms of the wider economy and how it changed over the course of the early medieval period in Wales is severely hampered by the lack of material evidence with the notable exception of a small number of high-status sites. Indeed, the small assortment of quernstones, hones and other worked stones from South Hook is a fairly typical assemblage (Redknap and Horák 2010). Evidence for iron-working is, however, gradually increasing. Publication of an iron-smelting workshop with two slag-tapping furnaces from South Hook, as well as the smithing of raw blooms from another source, is particularly important since it demonstrates iron-working on a considerable scale radiocarbon dated between the late eighth century and c AD 1000 (Crane and Murphy 2010, 125–8, 185–6; Young 2010). In the north-west there is also important iron-smelting evidence of seventh- to ninth-century date from Cefn Graeanog, Gwynedd, possibly involving both tapped and non-tapped slags (pers. comm. Tim Young). Further well-dated evidence is now needed from other sites to enable a closer understanding of technical change and more comparison both within and beyond Wales and the construction of a broader picture. In addition, evidence has been

published for early medieval lead smelting at Banc Tynddol, Cwmystwyth, Ceredigion (Anguilano *et al.* 2010).

Although the need for detailed artefact studies was noted in the 2005 *Research Framework* [4.], there have been few over the past five years. Maria Duggan (2016) has reviewed aspects of the trade in Mediterranean imported pottery from the Atlantic seaboard to Britain during the fifth and sixth centuries. Mark Redknap (forthcoming) has reviewed discoveries of Byzantine artefacts and coins in England and Wales and analysed the evidence for ornamental harness mounts and other equestrian metalwork indicative of the importance of the horse in early medieval Welsh society (Redknap 2013). Several of the coins and artefacts discussed were metal detector finds recorded by the Portable Antiquities Scheme, which in Wales is funded by *Amgueddfa Cymru* – National Museum Wales, the Museums and Libraries Division (formerly CyMal) and Cadw and is based in the National Museum. Discoveries are recorded by Mark Lodwick, the Finds Co-ordinator for Wales, and National Museum curators, some of which are initially reported to the four Archaeological Trusts. The PAS officers in north-west England and the English Marches also play an important role in recording discoveries, particularly in the border areas. Community engagement with the scheme is currently being encouraged by the National Museum, Heritage-Lottery funded project *Saving Treasures, Telling Stories*. Though the number of early medieval artefacts discovered in this way annually in Wales is low compared with most regions of England, they are particularly valuable in increasing our knowledge and understanding of the economy, cultural contacts and regional differences, especially where the context is understood. It is therefore essential that funding is maintained for such recording throughout Wales and that the contexts of significant discoveries and clusters of finds continue to be properly investigated where appropriate. Some of the most significant recent finds are related to exchange and trade. For example, three Anglo-Saxon sceattas of late seventh- or early eighth-century date are now known from the Welsh borders (Naylor 2011; PAS nos HESH-33C368; NMGW-9A4808; LVP-20C747). Further evidence of a Viking Age silver bullion economy has also emerged, predominantly in north-west Wales, most significantly the discovery of a late mixed hoard from Llandwrog, Gwynedd, with ingots, Hiberno-Scandinavian coins of Sihtric Anlafsson and Anglo-Saxon pennies of Cnut dating its deposition to c. 1025 (PAS no. NMGW-038729; Redknap 2016a, 19; pers. comm. Edward Besley and Mark Redknap).

### 3.2.4 Summary

Therefore, progress in our knowledge and understanding of and ability to reconstruct the early medieval economy in Wales, land use and the exploitation of landscapes and natural resources [5., b.] has been patchy at best. The most significant advances over the last five years have been in the expert analysis of pollen records, charred plant remains and the debris of iron-working, all of which have led to a better understanding of likely developments over time as well as contributing hypotheses to test in future work. However, comparatively little headway has been made in other areas, particularly in our understanding of early medieval animal husbandry, undoubtedly an important element in the economy.

### 3.3. Ecclesiastical Sites and Stone Sculpture

In the first *Research Framework* various fundamental research questions were set out and these were repeated in the revised document.

Firstly, what are the origins, patterns of development and chronology of early medieval ecclesiastical sites in Wales and how do these relate to the emergence of the parish system? Secondly, what can archaeological excavation tell us about structures and other features associated with individual early medieval ecclesiastical sites in Wales, their layout, spatial patterning and associated functions? Thirdly, how do individual sites fit into the broader picture – not only ecclesiastical hierarchies and landscapes, including estates, but also the relationship between church sites and the pattern of secular settlement? (Edwards *et al.* 2005, 39; 2011, 10)

It was also noted in 2005 that over the next decade there should be 'carefully focused research programmes directed towards answering these questions' (Edwards *et al.* 2005, 39) and that in order to achieve this a small number of ecclesiastical sites and their environs should be targeted for programmes of non-destructive archaeological exploration using geophysics, aerial photography (and now LiDAR). Where there were promising results it was recommended that these should be followed up with trial excavations to determine the nature of the deposits and, if appropriate, further, larger-scale investigations should be carried out.

During the intervening period major new research projects have been initiated beyond Wales to investigate the important, well-documented, Anglo-Saxon monasteries at Lindisfarne, Northumberland (Petts 2013), and Lyminge, Kent (Thomas 2013), and excavations at the Pictish site of Portmahomack, Ross and Cromarty, have just been published (Carver *et al.* 2016). In contrast, comparatively little progress

has been made in Wales and more archaeological investigation on carefully targeted sites suggested by the Welsh Archaeological Trusts' *Early Medieval Ecclesiastical Sites* project is clearly needed. There have, nonetheless, been various reviews of the evidence for the early medieval Church in Wales, national (Petts 2009; Edwards 2015), regional (Knight 2013; Edwards 2016a) and thematic (Cross 2010). In addition, there have been exploratory excavations on the site outside Caerleon mentioned in a Llandaff charter which is associated with the cult of the Roman martyrs, Julius and Aaron (Seaman 2015; pers. comm.) and a report has been prepared on the archaeology of Ynys Enlli (Bardsey Island), the site of an important early medieval foundation (Kenney and Hopewell 2015, 9–11, 19–21). However, there has only been one major excavation on an ecclesiastical site: St Patrick's Chapel, near St Davids, Pembrokeshire. Here excavations (2014–16) on the seaward side of the later medieval chapel were precipitated by serious coastal erosion and were focused on part of the cemetery which was found to have several layers of graves with well-preserved bone (see below). Near the bottom was part of a large rectangular stone enclosure and beneath this evidence of prehistoric activity suggesting that, like many early medieval burial sites, it had a long history of site use and reuse (Murphy *et al.* 2014; 2015; 2016) [**3.**, **6.**, **7.**].

The final volume of *A Corpus of Early Medieval Inscribed Stones and Stone Sculpture in Wales* covering monuments in the north has now been published (Edwards 2013). Nevertheless, new finds continue at the rate of one or two a year. They comprise the rare discovery of a fifth- or sixth-century inscribed stone from Llanfihangel Ysgeifiog, Anglesey, an important cluster of monuments from St Patrick's, three of which were found *in situ* during the excavations, as well as other cross-carved stones from Pembrokeshire and Anglesey (Edwards 2016b; Murphy *et al.* 2014; 2015). Excavations at the Pillar of Eliseg were completed in 2012 (see below). More archaeological investigations now need to be carried out on the contexts of a selection of other early medieval stone monuments in order to determine more about their functions and the evolution and hierarchy of the ecclesiastical and other sites on which they are found (Edwards *et al.* 2005, 40). Furthermore, many early medieval stone monuments remain vulnerable and it is therefore important that the *Early Medieval Stones at Risk Register* compiled in 2010 by the *National Committee for the Recording and Protection of Early Medieval Inscribed Stones and Stone Sculpture* (now the *National Welsh Medieval Sculpture Advisory Panel*) is maintained and that these carved stones are safeguarded for the future. The conservation and redisplay of the fine

collection of monuments at Llantwit Major (<http://www.llanilltud.org.uk/visit/galilee-chapel-visitors-centre/>) and the cross-shaft fragment from Llanancarfan, Vale of Glamorgan (Redknap and Lewis 2007, G35, G63–71), provide examples of good practice, which are outcomes of large community initiatives funded by Cadw, the Heritage Lottery Fund and other grants. In many other instances, however, church redundancy represents an increasing threat.

### **3.4 Cemeteries and Osteological Analysis**

It was noted in 2011 that archaeological investigations of early medieval cemeteries, many of which are not associated with ecclesiastical sites, had continued apace, especially in the north-west and south-west, in Anglesey and Pembrokeshire, where these sites are easier to detect because of the presence of long-cist graves and, largely in the former, square-ditched enclosures (Edwards *et al.* 2011, 10–11). This pattern has persisted, mainly as the result of an important series of rescue excavations, several of which were Cadw-funded owing to coastal erosion. In the north-west excavations at Tywyn-y-Capel, Trearddur Bay, Anglesey, are now published and revealed two phases of well-preserved burials, long-cists under stone-edged mounds radiocarbon dated to the seventh and eighth centuries and dug graves between the eighth and twelfth (Davidson 2009b). Two other Anglesey cemeteries, both important examples because of their association with prehistoric monuments, have likewise been published: Tŷ Mawr, Holyhead, with a Late Neolithic or Bronze Age ring-ditch, and Arfryn, Bodedern (which also had an early inscribed stone), with a Middle Bronze Age enclosed settlement (Kenney and Longley 2012; Hedges 2016). Recent rescue interventions on Anglesey have recorded and/or excavated further early medieval cemeteries at Llanbedrgoch (pers. comm. Andrew Davidson) and Llaniestyn (Evans *et al.* 2015), both of which are located beyond the present churchyards, as well as an undeveloped example with unusually well-preserved skeletal remains at Coleg Menai, Llangefni (pers. comm. Iwan Parry). In addition, excavations at Llanbeblig, Caernarfon, Gwynedd, examined a cemetery with several square-ditched enclosures in the environs of the Roman fort (Kenney and Parry 2012).

Turning to Pembrokeshire, publication of significant rescue excavations on the sites of cemeteries at Brownslade and West Angle Bay has already been mentioned. The former was associated with a Bronze Age barrow and dated to between the sixth and eleventh centuries whilst the latter demonstrated more than one burial focus within a rectilinear and curvilinear enclosure, indicative of a complex sequence spanning the

mid-seventh to early twelfth centuries (Groom *et al.* 2011). The cemetery excavation at St Patrick's Chapel (see above) is also revealing important results (Murphy *et al.* 2014; 2015; 2016). In contrast, we still know much less about early medieval burial practices in Carmarthenshire and Ceredigion and parts of Gwynedd. Furthermore, a review of the evidence for early medieval burial in north-east and mid Wales has indicated that only twelve sites are known. There were exploratory excavations at two of these: Meusydd, Llanrhaeadr-ym-Mochnant, Powys, and Druid, Corwen, Denbighshire, where a series of square-ditched enclosures were located beside a Roman road, but in both instances radiocarbon determinations were unable to confirm an early medieval date (Jones *et al.* 2013). In the south-east radiocarbon dating of the human bone assemblage from Lesser Garth Cave, Glamorgan, has demonstrated that there was intermittent burial during the early medieval period (Madgwick *et al.* 2016). Other potential cemetery sites now need to be identified and targeted for investigation in parts of Wales where we know less in order further to determine regional and chronological similarities and differences.

In 2005 it was noted that, despite the growing number of excavated sites, long-standing research questions remained to be answered and a better understanding of dating and chronology was needed in particular (Edwards *et al.* 2005, 40). The potential problems of assigning long-cist burials to the early Middle Ages without corroborative radiocarbon or other dating evidence have recently been underlined by excavation of a stone-built grave at St Mary's Church, Nefyn, Gwynedd. The skeleton was radiocarbon dated to the late twelfth or first half of the thirteenth century AD thereby indicating the continuation of this burial practice into the later Middle Ages in north-west Wales (C. R. Archaeology 2015). Therefore, in order to make progress, it is crucial that sufficient radiocarbon dates are obtained, wherever suitable samples are available, to enable both Bayesian statistical analysis and an understanding of cemetery development. This would make it easier to address other questions concerning cemetery organization and enclosure, continuity and change in the use of particular forms of burial and associated structures, such as square-ditched grave enclosures, the significance of associated artefacts, practices such as the deposition of white quartz pebbles, variations in the treatment of different individuals and groups, conversion to Christianity and belief. It is also particularly important to examine the spatial relationship between cemeteries and the wider early medieval landscape, including settlement sites. It has already been suggested that the existing dataset needs to be reassessed by the compilation of an on-line database

similar to the *Mapping Death* project for early medieval Ireland (Bhreathnach and O'Brien 2010; Edwards *et al.* 2005, 40; 2011, 10–11), and this certainly remains the case. A recent important analysis of early medieval cemeteries across Scotland has likewise revealed interesting chronological and regional differences in burial practices (Maldonado 2013).

There continues to be a need in Wales for a more holistic approach to the study of early medieval cemeteries whereby evidence from the wider funerary, archaeological and historical record is integrated with the growing body of scientific data in order to understand its wider significance as per Hemer (2010). Interest has increased in evaluating particular cemetery groups. For example, there has been discussion of the representation of infants and children in early medieval cemeteries in Wales, as well as the significance of grave elaboration on the basis of age, gender and place of origin (Hemer 2010; 2014; Page 2011). However, over the last decade the most important developments relating to early medieval cemetery excavations internationally have undoubtedly been in the field of bioarchaeology. By comparison, such research in Wales is in its early stages but palaeopathological and isotope analysis of skeletons from a number of early medieval cemeteries across Wales is now producing interesting results. Osteological examination of human skeletal populations from Wales, for example Tywyn-y-Capel (Adlam and Wysocki 2009), Brownslade (Hemer 2010; Coard 2011) and ongoing work at St Patrick's Chapel, as well as of childhood death at Llandough, Vale of Glamorgan (Manifold 2014), remains vital to understanding population demography and health [6.]. Stable isotope analysis has also now been undertaken on eight cemetery populations, Brownslade, Porthclew, St Patrick's Chapel and West Angle Bay, Pembrokeshire, Llandough, Atlantic Trading Estate and Lesser Garth Cave, Glamorgan, and the small number of individuals associated with the Viking Age settlement at Llanbedrgoch, Anglesey, where at least some seem to have met violent deaths (Hemer 2011; Hemer *et al.* 2013; 2014; 2016; forthcoming; Redknap 2016b; Madgwick, Redknap and Davies 2016) [6.]. This has included strontium and oxygen isotope analysis indicating where individuals spent their early years thereby allowing investigation of patterns of population mobility, and carbon, nitrogen and sulphur isotope analysis to reconstruct palaeodiet.

The results shed light on key aspects of the early medieval past. Firstly, strontium and oxygen isotopes have shown the localised mobility of populations around the Welsh landscape, the movement of people between England and Wales, contact and mobility between Wales and

Ireland as well as further afield between Wales and Scandinavia, Europe and the Mediterranean Sea region (Hemer *et al.* 2013) [d.]. This evidence allows us to explore broader questions surrounding contact between Wales and the wider medieval world and the implications of this, including involvement in trade networks, local and long-distance, which could, for instance, build upon the work of Campbell (2007) and Duggan (2016) on French and Mediterranean imports (see above). Such evidence likewise allows us to consider the political implications and negotiations of power which arose from these contacts as is suggested, for example, by the use of ogham-inscribed stones in Dyfed (Edwards 2007). It is also important to consider *who* was moving. Focus is now being placed on the involvement of women and children in this process, demographics which have been overlooked in the past in Wales, particularly in comparison to work undertaken on Anglo-Saxon populations (Hemer 2014). Secondly, carbon, nitrogen and sulphur isotope analysis provides an indication of the dietary resources consumed by each sampled individual, and from this the use of resources by the wider population. Such evidence can shed light on the consumption or otherwise of natural resources and agricultural practice in early medieval Wales, for example, the use of seaweed as a consumable resource by people and animals as well as a fertiliser (Hemer *et al.* 2016). In the future it is also important that isotope analysis of animal bone is considered to complement that undertaken on human skeletal remains.

Therefore, though significant progress continues to be made in examining individual cemeteries, largely in north-west and south-west Wales and often as a result of rescue excavations, notably in reaction to coastal erosion, there has been much less emphasis on answering important research questions concerning chronology, regional differences, the burial of different groups and changing practices and beliefs [c.]. Further work, however, needs to be carried out in mid-Wales and the Marches. Major scientific developments in the analysis of human remains are also having an increasing effect on our understanding of demography, population movement, health and nutrition of early medieval populations [6.]; it is therefore essential that their potential in Wales is also realised. There also needs to be a proactive shift towards the identification and excavation of sites as part of larger research projects with thorough post-excavation analyses factored in, though funding is always going to be the issue for such work.

### **3.5 Power and Authority, Social and Cultural Continuity, Change and Conflict**

A decade ago the research questions posed were still framed by the surviving written sources. They were primarily concerned with 'the pattern of relationship and interaction between different political and cultural groups in the early medieval period' and with gauging the extent and influence of Irish, Scandinavian and Anglo-Saxon incursions and/or settlements, as well as evidence for 'the nature of the transition to Norman administration' (Edwards *et al.* 2005, 40–1) [d.]. By 2011 there was also an increased interest in 'the transition from Roman control to the emergence of early medieval kingdoms in Wales' (Edwards *et al.* 2011, 14).

All these questions clearly remain relevant. Debates about the end of Roman Britain highlighted in 2011 have continued leading to the development of a new model relevant to Wales. This suggests that the idea of a complete collapse is misleading. It is argued that there was, instead, a process of adjustment, whereby the removal of Roman control and taxation resulted in less need for surpluses, which resulted in economic decline, especially amongst the elite, and the gradual emergence of more personal power structures materially expressed in new ways, eventually leading to kingdom formation (Gerrard 2013). There have also been pertinent discussions of items of personal adornment during the fourth and fifth centuries, notably penannular brooches (Collins 2010), the later scavenging and recycling of Roman artefacts and materials (Swift 2012; Fleming 2012) and the nature and extent of post-Roman occupation in Wroxeter (Lane 2014). In Wales we also need to gain a greater understanding of the complexities of change during the fourth and fifth centuries as seen in the archaeological record, not only on military sites, like Priory Fields, Caerleon (see above), towns, notably Caerwent, and villas, such as the new discovery at Abermagwr, Ceredigion (Driver and Davies 2012), but also on a range of native settlements. As already indicated, in order to achieve this, the use of radiocarbon dates to aid the establishment of site chronologies rather than relying on Roman pottery and coins, is crucial (see above).

There have been no new developments in our understanding of the Irish and Scandinavian impacts on early medieval Wales other than stable isotope analysis and new Portable Antiquities Scheme discoveries (see above). Conversely, a major reassessment of the archaeology and significance of Offa's Dyke is of considerable importance to our understanding of the changing relationship between the Welsh kingdoms and Anglo-Saxon England from the late eighth century onwards (Ray and Bapty 2016). It argues, broadly in line with Fox (1955) but *contra* Hill and Worthington (2003), that, although there are gaps, the dyke is a single

entity which stretched from near the Dee estuary to the Sedbury Cliffs overlooking the Severn estuary rather than effectively terminating at Rushock Hill near Old Radnor. This thesis now requires further testing and the lack of scientific dating of the dyke remains a major problem, as excavations following destruction of a section at Chirk, Wrexham, have demonstrated (Grant 2014; Grant and Jones 2014). It is sobering to note that the only part of the Dyke which has been systematically surveyed is the well-preserved stretch across Dudaston fields, Shropshire, near Montgomery (Ray and Bapty 2016, 194–8). Therefore, in order to extend our knowledge and understanding of the landscape and cultural context, construction and engineering of Offa's Dyke, as well as its functions, detailed surveys of further key stretches are required and these need to be set within their broader landscape contexts. A strategy also needs to be put in place to take advantage of opportunities for radiocarbon and OSL dating wherever they arise. Building on work already done, this strategy should likewise be applied to Wat's Dyke which, using OSL dating, has previously been shown as in use in the early ninth century (Malim and Hayes 2008); its landscape relationship to Offa's Dyke also demands further attention. Equally, more work is needed on other undated and likely early medieval short dykes in Wales (Hankinson and Caseldine 2006). Although there have also been recent investigations along the line of the Whitford Dyke, Flintshire, which is thought to be an early medieval boundary earthwork, its context remains uncertain and no evidence of date was forthcoming (Jones 2013; 2015).

In addition, over the last decade early medieval archaeologists across northern Europe have become increasingly interested in how early medieval power and authority, and the judicial and other processes which stem from this, are evidenced in the archaeological record, principally through the identification of assembly and royal inauguration sites and landscapes (e.g. Pantos and Semple 2004; Gleeson 2012; Semple and Sanmark 2013; O'Grady 2014). In Wales the identification of such sites has proved particularly difficult because of the limitations of both the archaeological and written evidence as well as the comparative lack of detailed research on place-names. Nevertheless, such a multi-disciplinary approach alongside landscape analysis using GIS has recently led to the tentative identification of a likely area of assembly and its associated landscape at Bayvil, Pembrokeshire, which includes Early Bronze Age barrows with probable early medieval graves at Crugiau Cemmaes (Comeau 2014; Murphy and Murphy 2015). The landscape context of the Pillar of Eliseg, Denbighshire, including its siting on an Early Bronze Age cairn, as well as the nature of the inscription, also makes it a very strong

contender, though the limited archaeological excavation did not reveal any other evidence of early medieval activity (Edwards, Robinson and Williams 2015; forthcoming). The identification of these sites has also resulted in the establishment of a pilot project on the *Assembly Sites of Wales* with the aim of locating further sites and their associated landscapes which should then be investigated using the full range of non-invasive techniques prior to exploratory excavation. Nevertheless, it should be acknowledged that excavation of assembly sites may bring few tangible results since activity may often be ephemeral and episodic and is likely to be especially so in Wales where acidic soils often lead to poor artefact preservation. It is also pertinent to note that the foci of assembly activity can be scattered across a localized landscape, which includes the re-use of older sites. This makes use of a multi-disciplinary approach integrating archaeological, written and place-name evidence together with detailed analysis of the landscape and its resources all the more important for the recognition of further sites and this should now be applied elsewhere.

Therefore, over the last five years, apart from the potential of stable isotope analysis to determine movement of people (see above), the main advances have been in two areas. Firstly, the reassessment of Offa's Dyke, has important implications for our understanding of the changing relationship with England before and after its construction [d.]. Secondly, if more assembly sites could be identified, this would have considerable potential to illuminate a range of aspects concerning early medieval society in Wales, including the harnessing of prehistoric monuments in the development of early medieval power structures, elite exploitation of resources and the relationship between rulers and the church.

#### **4. CONCLUSION**

Though undoubtedly much remains to be done, this review of the early medieval section of the *Research Framework for the Archaeology of Wales*, initiated in 2005 and previously reassessed in 2011, has demonstrated continuing progress in addressing the original research priorities (see above) in most areas but not all. Although a very small number of new early medieval sites, including non-elite secular settlements, has been identified and their potential confirmed [1., 2.], owing to lack of funding, the only ones being investigated more extensively are those subject to developer-funding, though the research excavations at Priory Fields, Caerleon, have turned up post-Roman structures in addition to the Roman remains [3.]. The continuing lack of any full archaeological investigations of ecclesiastical sites, other than the

rescue excavation at St Patrick's Chapel, St Davids, is particularly notable and the emphasis on cemeteries in the north-west and south-west has continued, making it more difficult to address wider issues [c.]. Detailed analysis of early medieval artefacts and their contexts, other than the stone sculpture, has also been very limited [4.]. Developments in our understanding of power and authority have focused on the relationship with Anglo-Saxon England, mainly as a result of research on Offa's Dyke, though assembly sites have also emerged as an important area of enquiry [d.]. Scientific analyses of environmental and human remains continue to demonstrate very considerable potential and are now having a greater impact on our understanding of the early medieval economy of Wales, as well as health and mobility [5. 6.], but much more could be done, if increased funding were made available. Similarly, radiocarbon dating of all potential early medieval deposits is crucial to improve our understanding of chronology which will then allow us to explore wider changes over the period [7.]. It is likewise important to engage as much as possible with relevant archaeological research elsewhere in Britain and Europe in order to place the evidence from Wales in a wider early medieval context [8.].

## 5. REVISED RECOMMENDATIONS

- 1. Identification of potential early medieval sites, particularly secular settlements**, should be undertaken using a multidisciplinary approach to give the best chance of establishing criteria for locating such sites as an element in the wider landscape. This should make use of an integrated methodology employing documentary and place-name evidence where possible, as well as GIS, air-photography and LiDAR together with interrogation of the wider archaeological context and identification of finds scatters, followed up by appropriate geophysics, trial trenching and, where it is warranted, more sustained excavation through collation and assessment of new and existing information sources.
- 2. Confirmation of potential early medieval sites** through appropriate geophysics, exploratory excavation and the application of radiocarbon dating.
- 3. Full archaeological investigation of a range of early medieval sites.** There is a clear need to move beyond the sampling of early medieval sites but this is only generally taking place where rescue

excavation is required. More detailed attention should be given to the identification of a small sample of known early medieval sites and the development of a strategy for future research, archaeological investigation and grant capture to enable this.

**4. Improving understanding of the chronological framework for the early medieval period** through the application of all available methods, including scientific dating. Improvements in radiocarbon dating techniques mean that this is now the most common method of identifying early medieval sites. It is essential therefore, that wherever suitable short-life samples are available on both developer-led and other excavations, a sufficient number are obtained from closed contexts for radiocarbon dating on all excavated sites, including cemeteries, in order to identify and date early medieval activity and provide a chronology which should then be refined using Bayesian statistical analysis wherever possible. This is all the more important since diagnostic early medieval artefacts are rare and sites with later Roman ceramics and coins may also have early medieval activity which is otherwise very difficult to identify.

**5. Identification and analysis of environmental evidence from excavated samples and increased pollen sampling.** All excavation should be undertaken in consultation with an environmental archaeological specialist to advise on best practice for retrieval of environmental remains. Given the scarcity of early medieval archaeological evidence in Wales, bulk samples of at least 40 litres should be taken from all deposits on potential or confirmed early medieval sites. Where the concentration of charred plant remains is exceptionally low, excavators should consider retrieving 100 per cent of early medieval contexts to maximise the environmental data recovered. Where the preservation conditions are favourable for animal bone survival, fine mesh sieving should be undertaken on all deposits to retrieve smaller bone fragments and eliminate any potential sampling bias, and a strategy for the analysis of faunal remains should be instigated to enable a zooarchaeological assessment and published report. Targeted palynological research should be undertaken in areas surrounding known settlement sites and in regions lacking in pollen studies. Specific areas that would benefit from such research include the lowlands of south-east and south-west Wales, Anglesey and the borderlands of England and Wales. Cross-disciplinary collaboration is key to understanding the wider changes in the early medieval environment. Therefore, effective communication with researchers

within earth sciences and geography should be encouraged in order to extract period specific information relevant to archaeologists.

**6. Detailed analysis of early medieval artefacts and their contexts and the characterisation of site assemblages.**

One important component is the Portable Antiquities Scheme which is of great significance to the growth in the recovery of metal artefacts in all periods but has proved of particular significance for the discovery of rare early medieval artefacts (mainly ornamental metalwork and coins) across Wales. This makes the proper investigation of the contexts of significant early medieval discoveries and clusters of finds all the more important and strategies need to be put in place to ensure this. It is likewise essential that there is sufficient funding to encourage prompt reporting and to enable their proper recording (with specialist input as necessary) on a Wales-wide basis.

**7. Further archaeological investigation of early medieval cemeteries.**

This should, where appropriate, focus on parts of Wales, particularly the north-east, borders and south-east, where less is known about early medieval burial sites. Particular attention should be paid to establishing cemetery chronologies using radiocarbon dating and Bayesian analysis since this would make it easier to address other questions concerning cemetery organisation and enclosure, continuity and change in the use of particular forms of burial and associated structures, such as square-ditched grave enclosures, the significance of associated artefacts, practices such as the deposition of white quartz pebbles, variations in the treatment of different individuals and groups, conversion to Christianity and belief. It is also particularly important to examine the spatial relationship between cemeteries and the wider early medieval landscape, including settlement sites.

**8. Analysis of human remains for information on origins, demography, health, nutrition and disease.**

The growing significance of bioarchaeology as an expanding field of study means that it is particularly important to undertake a thorough osteological analysis of human remains excavated from early medieval sites, and this should continue to be considered an essential part of the post-excavation process. The excavation of early medieval cemeteries where human remains survive should be undertaken in consultation with an osteologist, who should be on site wherever possible. This is to ensure that minimal skeletal material (in particular the very small bones of

infants which can easily be overlooked), is lost during excavation and that a strategy can be put in place early on for the subsequent post-excavation analysis of the remains. It is advised that the potential for bioarchaeological analyses, including stable isotope analysis and ancient DNA (aDNA) analysis, continues to be explored in order to answer genuine research questions. It is advised that any destructive sampling (e.g. for isotopic/aDNA analysis) should only take place once the human remains have been recorded by an osteologist. It is essential that bioarchaeological data generated from the analysis of cemetery populations continues to be interpreted in relation to the wider funerary, archaeological, and historical context in order to provide a holistic understanding of life and death in early medieval Wales, and to allow for comparison with similar studies from Ireland, Anglo-Saxon England and beyond. To ensure that comparative analyses of cemetery populations can be undertaken, it is essential that the human remains storage facility at National Museum Cardiff, established in 2009 for skeletal collections excavated in Wales, receives ongoing support to maintain, expand and provide access to its collections. (Since 2011, its collections have been used by PhD students and to support specific projects, from osteological analysis to isotope studies, DNA and calculus analyses.)

**9. Developing an understanding of the archaeological and related**

**evidence for power and authority**, as well as social and political interactions and identities in early medieval Wales and how these changed over time. This should include the further development of a multidisciplinary strategy for identifying and investigating assembly sites and assembly landscapes.

**10. Further work is required to develop a better understanding of the Dyke systems in Wales**,

especially in the Marches and to set them in their broader landscape contexts through documentary, place-name, GIS, air-photography and LiDAR. Where appropriate this should be followed up with detailed topographical survey, geophysics and targeted excavation in order to obtain dating and environmental evidence to gain a better understanding of chronology, engineering and functions.

**11. Engaging with relevant research** on early medieval material culture elsewhere in Britain and Ireland thereby setting the evidence from Wales within a broader context.

Progress with these recommendations would enable advances to be made with broader questions concerning life in early medieval Wales.

- a. Establishing a hierarchy of secular settlement types in a broader landscape, analysing regional and chronological differences and considering the implications for an increased understanding of early medieval society in Wales.
- b. Constructing a better understanding of the economy: organisation and exploitation of land and resources, the impact of climate and other changes on the landscape, animal husbandry, tillage and the utilisation of the wider natural environment as well as health, mobility, craft-working and mechanisms of exchange and trade.
- c. Gaining insights into the chronology and process of Christian conversion, the evolution and changing functions of religious sites and the broader impact of these on the landscape and early medieval society in Wales.
- d. Building increased understanding of the changing relationships and mechanisms of contact between different parts of Wales with England, the Irish Sea zone and further afield, as well as the survival of Romano-British culture and the Viking impact (Edwards et al. 2005, 43).

## **6. USE OF THE EARLY MEDIEVAL RESEARCH FRAMEWORK 2010–16**

Attention has already been drawn to the broader relationship between the research questions and archaeological work on the early medieval period in Wales 2010–16 and it is also regularly cited in the archaeological literature. Nevertheless, a small number of academic research projects, some of which have received research council (RCUK) or other funding, and work by the Welsh Archaeological Trusts, mainly funded by Cadw, have drawn upon the research framework more specifically. Examples of its use include justification for renewed research and excavation at Dinas Powys (Lane and Seaman 2013); research to develop a predictive model for the discovery of early medieval settlements in the Vale of Glamorgan (Seaman 2010b); research on land-use and field-names funded by the British Academy (pers. comm. Andrew Seaman), the potential for pollen cores in the Vale of Glamorgan (Davies *et al.* 2015), and the investigation of trade and migration between Wales and the Mediterranean, funded by the British Academy Postdoctoral Fellowship Scheme (Hemer et al. 2013). It is also currently being used in the development of a potential research

project on Offa's Dyke by the RCAHMW and others (pers. comm. Christopher Catling). The research framework has likewise been cited in the justification of rescue excavations and associated research on the human remains at St Patrick's Chapel, St Davids, funded by Cadw, Pembrokeshire National Park Authority, the Nineveh Trust, the British Academy and the University of Sheffield. In many other instances, however, discoveries have either been made in the course of developer-funded and other rescue excavations or by chance, notably as a result of the reporting of metal detector finds to the Portable Antiquities Scheme.

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