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Report 4.5

Early Medieval Ireland: Archaeological Excavations, 1930–2009

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Text for Royal Irish Academy

By
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Chapter 1: The History and Legacy of Early Medieval Archaeological Excavation in Ireland

Excavation on early medieval sites in Ireland has a long history, incorporating the many and various changes in techniques and theories that have emerged over the past two centuries. While the discipline has developed and grown across time, it is apparent that particular monument types – notably raths/ringforts – have tended to be the main focus of archaeological excavations. The progress of Irish archaeology itself can be traced through early medieval excavations projects – from the earliest antiquarian explorations, through the investigations of the Harvard Archaeological Expedition, to professional, pre-development archaeological excavations of recent decades. It is also true that the methodologies of archaeological excavations themselves have changed radically, thus impacting upon the understanding and interpretation of the excavated site. This can be seen in comparing the 1930s university excavations at Garranes, Co. Cork (where trenches aimed to investigate enclosing ramparts and only small areas of internal occupation (Ó Ríordáin 1942a)), with the large-scale, open-area, commercial sector type excavations carried out in recent years of the early medieval settlement/cemetery at Raystown, Co. Meath (Seaver 2006; 2010). These changes reflect the 'professionalization' of archaeology in Ireland – a scholarly overview of which can be found in '*Foundation Myths*' (Waddell 2005) – but are also the product of changing political, historical and regional imperatives which were influential in framing research agendas and ultimately in the selection of sites for excavation. In particular, European Union legislative change and major national economic growth have played the dominant role in directing archaeological excavation in recent decades with an almost seismic effect on early medieval archaeological and historical studies in Ireland.

Antiquarian Origins and the Development of Irish Archaeology in the Nineteenth century

Through the seventeenth, eighteenth and nineteenth centuries, Irish archaeology was mostly the remit of interested amateurs or gentlemen scholars. These were drawn predominantly from the professional classes, with a smattering of clergymen like Richard Pococke (1704-1765), Bishop of Ossory (1756-65), and Meath (1765); landed gentry in the vein of Thomas J. Westropp (1860-1922); and ex-military figures such as Major-General Charles Vallancey (1725?-1812). A number of societies, including the Dublin Philosophical Society (founded 1683); the Physico-Historical Society of Ireland (1744); the Royal Irish Academy (1785) and the Irish Archaeological Society (1840) were founded at this time. These acted both as repositories for collections of Irish antiquities (or early museums), as well as providing vehicles by which like-minded individuals could meet and disseminate their ideas. Much of their discussions, however, were based on historiographical writings rather than physical evidence, and the origin and function of upstanding prehistoric monuments such as portal tombs, cairns, dolmens and cromlechs dominated early debates. James Ware's (1594-1666) '*Antiquitates Hibernicae*' (translated and published by Walter Harris as '*Antiquities and History of Ireland*' in 1705) was the first comprehensive survey of Irish antiquities. Ware's primary interest was in medieval ecclesiastical sites, and early church sites have remained a source of much academic discussion since – indeed the irreconcilable differences between the schools favouring the 'Nordic model' and the 'Scytho-Celtic model' for the origin of round towers ultimately caused the collapse of the Hibernian Antiquarian Society in 1783 (Love 1962). These discussions evolved over the subsequent century and George Petrie (1790-1866), Hodder Westropp (1802-1885), Richard Brash (1817-1876) and Margaret Stokes (1832-1900) all developed theories about the provenance of the Irish round tower, which ranged from bell-towers, pagan phallic symbols, sun clocks, to Phoenician constructions.

Where it existed, archaeological 'fieldwork' tended to consist of monument surveys. Walter Harris (1686-1761) undertook such work in Co. Down in 1744 and Charles Smith (1715?-1762) produced surveys of the history, topography and antiquities of counties Waterford

(1746), Cork (1750) and Kerry (1756), with occasional reference to early medieval monuments. The first comprehensive provincial surveys were undertaken in 1779 by the artists Gabriel Beranger (1729-1817) and Angelo Maria Bigari (*fl.* 1772-1779) under the auspices of the recently formed – and soon to be defunct – Hibernian Antiquarian Society. A detailed reconstruction of the journey of these artists on one of their earliest tours across Connacht in 1779 has been recently published (Harbison 2002). In the following year, Beranger, along with John James Barralet (1747-1815), undertook surveys of counties Wexford and Wicklow (*ibid*.).

The Ordnance Survey was founded in Ireland in 1824, and the mapping of the island was undertaken in 1829 under the supervision of Thomas Colby (1784-1852) and latterly Thomas Larcom (1801-1879). The Survey had an ambitious remit that extended far beyond merely mapping the island. It also sought to determine townland boundaries and acreage as a means of equalising local taxation; to resolve the issues arising from mapping place-names and antiquities in the countryside; and to record the history and antiquity of every antiquarian site across the Irish landscape. The scale of this project proved to be too large – the only Ordnance Survey Memoir to be published contemporaneously was that for the parish of Templemore in Co. Londonderry (1837) (Colby 1837) – and only the northern counties of Ulster were recorded in any detail.

The work of the Ordnance Survey and translations of early Irish texts completed by John O'Donovan (1806-1861) and others, however, had a significant and important influence on early archaeological theories. The range of subjects available for discussion was expanded from stone-built monuments, such as churches or round towers, to include other site-types, such as raths and crannogs. In contrast to the largely artistic 'archaeological' surveys of Beranger and others in the late-eighteenth century, the surveys undertaken in the latter half of the nineteenth century were focused on identifying the characteristics of site-types, rather than examining individual sites. George Kinahan (1829-1908) from the Geological Survey of Ireland, examined crannogs in the west of Ireland; William F. Wakeman (1822-1900), a 'drawing teacher', looked at the crannogs in Co. Fermanagh; and Colonel William G. Wood-Martin (1847-1917), High Sheriff of Co. Sligo, produced a work on '*The Lake Dwellings of Ireland*' (Woodmartin 1886; see O'Sullivan A 1998, 7-35 for an historiography of crannog studies). A slightly later contemporary, Thomas J. Westropp (1860-1922), produced a series of papers cataloguing the 'ancient forts' of Ireland in the late-1890s and early-1900s that attempted, for the first time, to deal systematically with the single most prevalent archaeological site-type in Ireland (e.g. Westropp 1902)

A few excavations were undertaken on early medieval sites during the nineteenth century. The majority of these were little more than treasure-hunting expeditions – e.g. the dismantling of the walls of Dún Ceithern, Sconce, Co. Londonderry in 1827 in search of gold (Chart 1940, 188) – and were neither controlled nor recorded. Some of the earliest reputable early medieval excavations were undertaken at round towers by Edmund Getty (1799-1857), secretary of the Belfast Harbour Board. His excavations at Armoy, Drumbo, Drumlane, Clones and Devenish (e.g. Getty 1855, 1856) uncovered quantities of human skeletal remains, but he recorded little of value for the modern archaeologist. John Bell (1793-1861) conducted further archaeological digs at round towers in Co. Armagh in the 1850s, and Roger Chambers Walker (1806-1854) undertook some work in Munster, but none of these were sufficiently written up (Waddell 2005, 122). With the exception of these excavations at round towers, very little physical archaeological investigation was undertaken on early medieval sites in Ireland until the twentieth century. One exception to this was the work undertaken between 1874 and 1878, by Walter Bernard, a medical doctor, who oversaw the reconstruction of large portions of the Cenél nEóghain/McLaughlin royal residence, the Griannán of Aileach, Co. Donegal (Bernard 1879). Another high status Iron Age/early medieval site excavated in Ireland during this early period was the Rath of the Synods, at the Hill of Tara, Co. Meath. The British Israelites, a society that sought to prove a direct lineal descent for early Britons from the ten 'lost' tribes of Israel, believed that the Ark of the Covenant had been buried within the royal complex at Tara. Relying on pseudo-mythological literature, a number of

'excavations' were undertaken between 1899 and 1902; their investigations unsurprisingly proved unsuccessful, and were eventually curtailed by the Royal Irish Academy (Carew 2003).

The disestablishment of the Church of Ireland on 1 January 1871 under the *Irish Church Disestablishment Act*, 1869, had a major impact on how archaeology was approached in Ireland. Former church property, including many archaeological monuments, passed into state ownership, thus raising issues of how these structures could be maintained and conserved. The nature of early conservation is highlighted by the excavation, and subsequent rather fanciful reconstruction/conservation work, at the monastic site at Nendrum, Co. Down. The site was excavated between 1922 and 1924, by Hugh Cairns Lawlor (1870-1943), a former Belfast linen merchant, at the behest of the Belfast Natural Historical and Philosophical Society (Lawlor 1925). Lawlor's methods of excavation and recording were extremely poor (McErlean *et al*. 2007, 201), and the resultant conservation work was of dubious value. The Nendrum excavations were to be the last major amateur archaeological project in Ireland.

University and State-Funded Archaeological Excavations in the Republic of Ireland (1930s-1970s)

Archaeology in Ireland went through a significant phase of evolution in the early-twentieth century and by the 1930s it had developed into a self-consciously scientific professional discipline. University academics assumed a leading role during these formative years. At an early stage, the principal early excavator in the south of Ireland was R. A. S. Macalister (1870-1950), Professor of Archaeology at University College Dublin. Although his prime interest was Middle Eastern archaeology, Macalister also conducted a number of excavations in Ireland. Most of these focused on prehistoric sites, but his unpublished excavation at Rathcroghan, Co. Roscommon in 1913, and his excavations at Uisneach, Co. Westmeath in 1925 (Macalister and Praeger 1928) and Killeen Cormac, Co. Kildare (Macalister and Praeger 1929) examined high status Iron Age/early medieval transition period sites.

The arrival of the Harvard Archaeological Mission to Ireland (1932-36) under the leadership of Hallam Movius (1907-1987) and Hugh O'Neill Hencken (1902-1981) was to bring about major, long-standing and very significant transformations to Irish archaeology and particularly the early medieval period (O'Sullivan A 2003a; Waddell 2005, 217-20). Hencken in particular carried out major archaeological excavations of crannogs at Ballinderry crannog No. 1, Co. Westmeath (Hencken 1936), Ballinderry crannog No. 2, Co. Offaly (Hencken 1942) and Lagore, Co. Meath (Hencken 1950) and of an early medieval cashel at Cahercommaun, Co. Clare (Hencken 1938). The expedition was strongly welcomed by the Irish Free State and broadly welcomed by Irish archaeologists for their large-scale systematic excavations and publishing experience, and is commonly seen as having a transformative influence on the development of Irish archaeology.

After the Harvard Mission, it was Sean P. Ó Ríordáin (1905-1957) who developed early medieval archaeological excavation in the Irish Free State (1922-1948) and latterly the Republic of Ireland. He was initially based in University College Cork and afterwards became Professor of Archaeology at the Department of Archaeology, University College Dublin. His key excavations were in the 1930s and 1940s and mostly across Munster, at sites such as Cush, Co. Limerick (Ó Ríordáin 1940); Garranes, Co. Cork (Ó Ríordáin 1942a); Lough Gur, Co. Limerick ('The Spectacles', Carrig Aille 1, Carrig Aille 2) (Ó Ríordáin 1949a); as well as excavations of raths at Letterkeen, Co. Mayo (Ó Ríordáin and MacDermott 1952), Ballycatteen, Co. Cork (Ó Ríordáin and Hartnett 1943) and Leacanabuaile, Co. Kerry (Ó Ríordáin and Foy 1941). Ó Ríordáin's prompt publication of his early medieval excavations provided the basic site literature on the subject, which was only matched by Chris Lynn's numerous excavations and publications for the Historic Monuments Branch in Northern Ireland during the 1970s and 1980s. Ó Ríordáin's successor at University College Cork, Michael J. O'Kelly (1915-1982), also furthered early medieval archaeology in the Republic of Ireland with his excavations at sites like Begenish, Co. Kerry (1956), and Garryduff, Co. Cork (1963).

University-funded excavations were undertaken on a number of early medieval sites in the 1960s and through into the 1970s in the Republic of Ireland. Staff from University College Cork conducted excavations on three raths at Lisduggan North (I, II and III), Co. Cork (Twohig and O'Kelly 1972; Twohig 1990); and, from the late 1960s to the early 2000s, George Eogan of University College Dublin conducted major excavations of an early medieval settlement on top of the Neolithic passage tomb at Knowth, Co. Meath (Eogan 1968, 1973, 1974, 1977, 2004, 2007). Overseas universities also conducted a small number of excavations in the Republic of Ireland at this time, for example the University of Uppsala's excavations at Raheennamadra, Co. Limerick (Stenberger 1966).

University and State-Funded Archaeological Excavations in Northern Ireland (1930s-1970s)

State-funded excavations in Northern Ireland developed along a different path from that adopted in the Irish Free State/Republic of Ireland. In Northern Ireland the care of ancient monuments was entrusted to the Ministry of Finance and an Advisory Committee (later an Advisory Council) was established in 1926 to deal with archaeology (Evans 1968). This led to the creation of the first regional archaeological survey in Ireland in 1934, which produced '*A Preliminary Survey of the Ancient Monuments of Northern Ireland*', or 'PSAMNI' (Chart 1940). This would form the basis for future archaeological surveys. In the late-1930s, and carrying on through the war years, Oliver Davies (1905-1986), a South African who was lecturer in Ancient History at Queen's University Belfast, undertook a number of early medieval excavations as part of the archaeological surveys of the counties of south Ulster (Davies 1947). With a handful of exceptions – e.g. Queen's University Belfast's excavations at Dunsilly, Co. Antrim in the mid-1970s (McNeill 1991), or the Ulster Museum's excavations at Clogher, Co. Tyrone in the late-1960s through to mid-1970s (summarised in Warner 2000) – the majority of early medieval excavations in Northern Ireland were carried out by civil service archaeologists attached to the government department responsible for the archaeological resource.

From the 1950s onwards, state-funded excavations became an increasingly important aspect of archaeology in Northern Ireland. Many of the excavations undertaken in the 1950s and early-1960s by the archaeologists of the Historic Monuments Branch of the Ministry of Finance (N.I.) were focused on Co. Down in preparation for the production of the *Archaeological Survey of Co. Down* (Jope 1966). A similar excavation-strategy was planned to inform the *Archaeological Survey of Co. Armagh* (Neill 2009), although only a handful of these were undertaken. Staff from the Historic Monuments Branch also actively pursued important early medieval excavations on church-related settlements. Many of these including Solar, Co. Antrim (Hurl 2002), Doras, Co. Tyrone (McDowell 1987), Dunmisk, Co. Tyrone (Ivens 1989) and Armagh City (e.g. Gaskell-Brown and Harper 1984; Lynn 1988a) were subsequently published in the *Ulster Journal of Archaeology* and other journals. As a result of the public availability of these excavations they have been a major shaping force in the development of early medieval archaeology in Ireland through the 1970s and 1980s.

In contrast to these research-led excavations, the majority of excavations on early medieval sites in the late-1960s and 1970s in Northern Ireland – e.g. Rathbeg, Co. Antrim (Warhurst 1969) and Ballymurphy, Co. Antrim (Lynn 1977-79:0003) – were development-driven and many focused on the roadworks associated with the creation of the M2 motorway in south Co. Antrim and the A55 Belfast Outer Ring Road. In this sense they were harbingers of the bulk of archaeological enquiries that would be undertaken thirty years later in the Republic of Ireland.

European Union Membership and the Origins and Development of Commercial Archaeology in Ireland

Both the Republic of Ireland and the United Kingdom gained membership of the European Economic Community (EEC) – latterly the European Union (EU) – in 1973. This event had a significant, though initially unanticipated, impact on archaeological research in the island of Ireland. Farm improvement grants from the EEC were the first indicators of a change in the way in which archaeology would be investigated in Ireland. The scope of many of these grants led to the full excavation of a number of early medieval sites prior to their removal. This had a marked affect in the 1970s and 1980s in Northern Ireland where archaeologists from the Historic Monuments and Buildings Branch, Department of Environment (N.I.) excavated a number of important early medieval sites, including Deer Park Farms, Co. Antrim (Lynn 1987a, 1987b, 1988b); Big Glebe, Co. Londonderry (Lynn 1988e); Killyliss, Co. Tyrone (Ivens 1984a); and Coolcran, Co. Fermanagh (Williams 1985a). In the 1970s and 1980s, archaeologists from the National Monuments Service in the Republic of Ireland were also involved in various early medieval rescue excavations on farm improvement schemes, land reclamation projects and small-scale housing developments, including those at Boolies Little, Co. Meath (Sweetman 1983a); Lackenavorna, Co. Tipperary (Manning 1984); Millockstown, Co. Louth (Manning 1986); and Dunbell Big 6, Co. Kilkenny (Foley 2006).

In the later 1980s the EU Structural Funds were reformed, resulting in increased capital expenditure on regional development and infrastructure. The Republic of Ireland in particular benefited from massive funding from these funds during the 1990s and early 2000s. These provided financial support for a number of important large-scale infrastructural projects, such as cross-country gas pipelines and road-building schemes. Unlike the farm improvement schemes, which were generally limited to a single archaeological site, the scale of these projects was unprecedented, opening up vast swathes of countryside or built-up areas (Fig. 2.1). This led ultimately to the development of the first 'contract archaeology' companies to cope with mitigating the impact of these developments, and funded by the developer on the principle of 'the polluter pays' (Fig. 2.2).

European Union membership also placed the archaeological resource under the protection of tighter planning legislation, as codified in the *European Convention on the Protection of the Archaeological Heritage*, 1992 (the '*Valetta Convention*'). *Valetta* sought to protect the archaeological heritage throughout the European Union by legislation, and was adopted by the Republic of Ireland in 1997 and by the United Kingdom in 2000. Although the licensing of archaeological excavations had been employed earlier than this, one of the major impacts of the adoption of *Valetta* was the standardisation of the licensing process in the Republic of Ireland and in Northern Ireland, and the establishment of uniform codes of practice and conduct agreed with state agencies – the Department of Environment, Heritage and Local Government and the National Roads Authority in the Republic of Ireland – as well as the commercial sector by the late 1990s.

The greatest impact of *Valetta* on archaeology in Ireland has undoubtedly been the legislative incorporation of archaeology into the planning and pre-planning process. In Northern Ireland this is currently (2010) covered by PPS16 (*Planning Policy Statement* 16), and in the Republic of Ireland by the various *Planning Acts* and *National Monuments Acts*, (1930-2004). This has meant that new forms of 'testing' and 'monitoring' excavations under the supervision of licensed archaeologists are obliged to be undertaken *near* and within the delineated boundaries of identified protected and scheduled monuments in advance of any form of development initiative. The integration of archaeology into the pre-planning stage triggered a vast number of small rural excavations in close proximity to raths; and similarly urban redevelopments have spawned a vast number of excavations, largely due to the proximity of early ecclesiastical foundations. Between 1998 and 2007 these 'monitoring' or 'testing' excavations constituted 75%-85% of annual excavations. In the vast majority of cases they failed to yield any archaeology of any significance (see Figs 2.4 and 2.5 below).

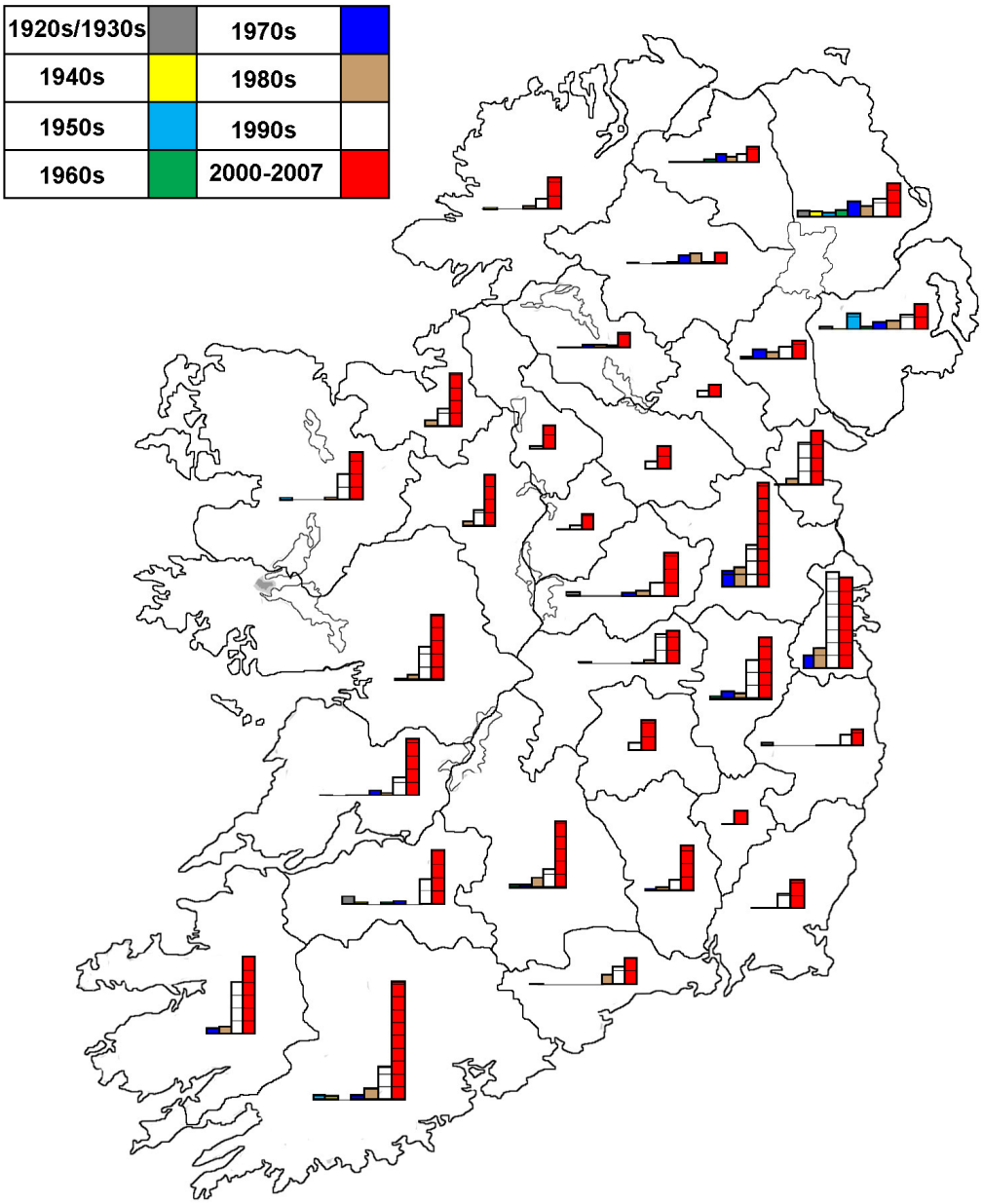

Fig. 2.1: Early Medieval Excavations in Ireland by county, by decade. (One block=20 excavations). The figure shows the massive expansion in excavations in the Republic of Ireland during the 1990s and 2000s, and the regional nature of this expansion, with concentrations in Cos Dublin and Meath, and Cos. Cork and Kerry especially. In contrast the Northern Ireland figures show a low scale increase in the numbers of excavations decade by decade from the 1930s.

Larger scale pre-development excavations, such as motorway construction (Fig. 2.3), however, have provided the major impetus to the archaeological boom. The major residential, commercial and infrastructural projects occurred in the Republic of Ireland in the late-1990s and mid-2000s, during the years of the so-called 'Celtic Tiger'. In 2000 a new *Code of Practice* was agreed with the National Roads Authority (NRA) in the Republic of Ireland, which marked a radical departure from previous strategies of archaeological assessment. The code outlined the employment of new techniques, such as geophysical survey, as well as more comprehensive line testing and monitoring along the proposed roadtake and agreed to actively seek out and fully preserve by record all known and previously unknown archaeological sites (http://www.nra.ie/Archaeology/CodeofPractice/). The establishment of a

Code of Practice between the NRA and the Department of Environment, Heritage and Local Government also led to archaeologists – many of them already experienced in contract archaeology – being appointed to the various County Council's and National Roads Design Offices (NRDO). These archaeologists themselves led to the raising of standards in archaeological contracts and recording – and most recently NRA publications of monographs and conference proceedings have increased the numbers of early medieval site excavation publications.

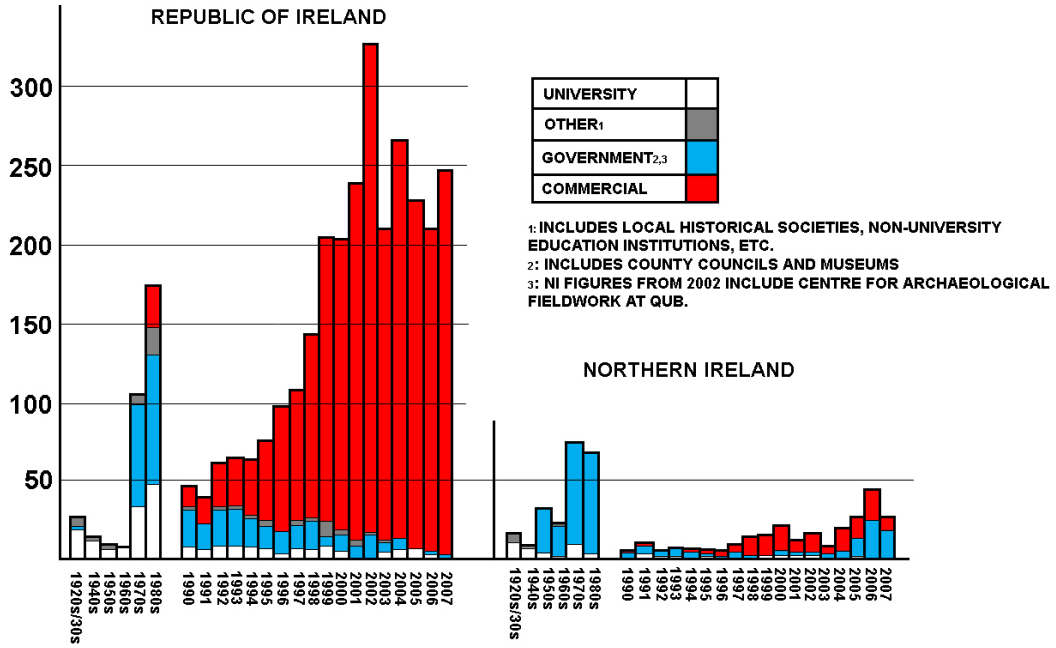

Fig. 2.2: Early Medieval Excavations in Ireland by Institution (by decade 1930s-1980s; annually 1990-2007). Figures show the emergence of the commercial sector in the Republic of Ireland in the late 1980s and the take-off of commercial excavations *c.* 1996. The subsequent decade in the Republic of Ireland was dominated by commercial excavations, peaking in 2002. Commercial archaeology also appears in Northern Ireland in the early 1990s but does not dominate the early medieval excavations as it does in the Republic of Ireland, and government-funded archaeology (largely the CAF at QUB) was a significant factor in excavations from 2005 onwards.

Given the scale of archaeological excavations, particularly along these infrastructural road and commercial projects, an array of previously unknown archaeological evidence from unenclosed habitations, field systems, mills, cereal-drying kilns and metalworking-related features, began to be discovered well beyond the bounds of the cartographic circles used to denote sites such as ringforts/raths and ecclesiastical sites, traditionally recorded in the Sites and Monuments Record of both jurisdictions (RMP and SMRNI) and scheduled monuments.

The M50 ring road in Co. Dublin, began in the 1980s was one of the earliest major road schemes in the Republic of Ireland. Motorway construction continued apace throughout the 1990s and 2000s, with the creation and expansion of an island-wide network of major roads. Excavations in advance of this construction phase uncovered many new archaeological sites, and a number of these have subsequently been published individually or collectively (e.g. Roycroft 2005 for M1 sites, and Deevy 2005, 2006, 2008 for M3 sites). The impact on early medieval studies of these excavations on roadworks in the Republic of Ireland can quite clearly be seen in Figure 2.3. Alongside traditional ringforts, such as Magheraboy, Co. Sligo (O'Neill 2007b) or Leggetsrath West, Blanchfieldsland, Co. Kilkenny (Lennon 2006), other less typical enclosures were also uncovered. These included the settlement and mill complex at Raystown, Co. Meath (Seaver 2005b; 2006; 2010), and the settlement complexes at Roestown 2, Co. Meath (O'Hara 2007; 2009a), Baronstown 1, Co. Meath (Linnane and Kinsella 2007; 2009), and Killickaweeny, Co. Kildare (Walsh and Harrison 2003; Walsh 2008).

A *longphort* at Woodstown, Co Waterford was also discovered in advance of roadworks (O'Brien and Russell 2004; 2005; O'Brien *et al*. 2006).

It could even be argued that these road excavations identified a new early medieval site type – the settlement/cemetery site (Chapter 4) – examples of which were uncovered throughout the Republic of Ireland from Balriggan, Co. Louth (Delaney and Roycroft 2003; Delaney 2010), to, Johnstown 1, Co. Meath (Clarke 2002; Clarke and Carlin 2008), to Knoxspark, Co. Sligo (Mount 1994; 2002; 2010), and Twomileborris, Co. Tipperary (Ó Droma 2008). A couple of early ecclesiastical (or possible ecclesiastical sites) were also uncovered during these excavations - Clonfad 3, Co. Westmeath (Stevens 2006; 2007b); and Kill St. Lawrence, Co. Waterford (O'Connell 2004).

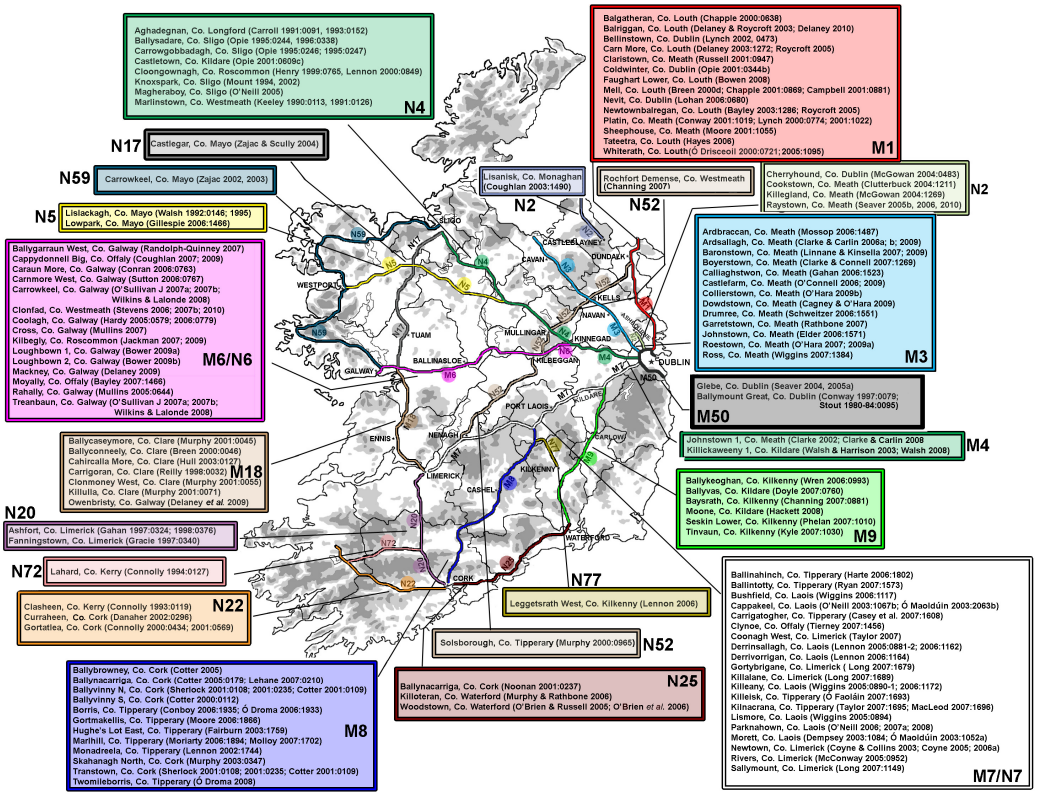

Fig. 2.3: Significant Early Medieval Sites excavated on Roadworks in Republic of Ireland. The figure shows the dominant role road schemes played in the discovery and excavation of early medieval sites in the Republic of Ireland.

Urban Redevelopment Archaeology in Ireland (1970s-2000s)

Although several seasons of excavation of Viking and medieval Dublin had been undertaken by the National Museum of Ireland in the late 1960s and early 1970s (Ó Ríordáin 1971, 1976), the excavations at Woodquay and Fishamble Street in the beginning of the 1980s were more high-profile (Wallace 1985b; 1987b; Wallace and Ó Floinn 1988). The controversy about the construction of the Dublin Civic Offices on the Viking/Medieval urban archaeological site at Fishamble Street politicised Irish archaeology and ultimately lead to a re-imagining of Dublin's identity as a Viking town (Bradley 1984; Wallace 1992b, 5).

There has been significant urban redevelopment within and around Ireland's major cities and towns since the late 1990s. There have been numerous excavations of Scandinavian Dublin – the 1970s–1990s excavations are summarised in Simpson 2000 – and other notable excavations undertaken in the 2000s include those by Gowen 2001, Walsh 2001, Hayden

2002, McMahon *et al*. 2002, Simpson 2003, Simpson 2004, Meenan 2004, Ó Néill 2004a, Cryerhall 2006 and O'Donovan 2008. Local councils were also involved in urban archaeology during these decades, and of especial interest for this time period are the excavations of a considerable area of the Scandinavian core of Waterford city undertaken between 1982 and 1993 by archaeologists employed by Waterford Corporation (Hurley *et al*. 1997). A number of, as yet, unpublished excavations were also undertaken subsequently e.g. Moran 1999:0852; O'Donnell 1999:0851; Hurley 2001:1250; Scully 1998:0639, 1999:0850; and Wren 1998:0638, 2000:1006, 2001:1254, 2002:1813.

Local government-funded excavations in the centre of Hiberno-Scandinavian Cork City have been published (e.g. Cleary *et al*. 1997; Hurley 1998; Cleary and Hurley 2003), and other excavations have been undertaken subsequently, e.g. Kelleher 2002:0291, 2004:0244; and Ní Loingsigh 2003:0225, 2005:226). Urban redevelopment along Bride Street in Wexford town in 1988 also revealed substantial Hiberno-Scandinavian urban deposits (e.g. Bourke 1988-89, Bourke 1995; Bennett 2004-05; Wren 1994:2029, Wren 1995:0287; and Sheehan 2002:1934); and some Viking material was discovered in excavations in the centre of Limerick (e.g. Wiggins 1991, Wiggins 2000a; Wiggins 1990:0084, 1993:0146, 1994:0160, 1995:0182, 1996:0245, 1997:0353, 1998:0407; Hodkinson 1990:0081, 1992:0127; Hanley 1997:0351).

There have been fewer significant early medieval excavations in an urban context in Northern Ireland – largely due to the lack of comparative Hiberno-Scandinavian settlements. Excavations around the ecclesiastical cores of Armagh City, Co. Armagh (Gaskell-Brown and Harper 1984; Crothers 1999; Hurl 2003; Lynn 1975b; Lynn 1988a) and Downpatrick, Co. Down (Brannon 1987, 1988b, 1988c, 1997:0071; Delaney 1975; Halpin 1998:0115; Ó Baoill 1992:0034; Proudfoot 1954 and 1956), have, however, uncovered evidence for early medieval settlement.

As well as city-centre redevelopments, early medieval sites have also been discovered in suburban contexts. Examples discovered in the environs of Dublin include an early medieval settlement/cemetery at Mount Offaly, Cabinteely (Conway 1999), an early medieval cemetery and possible Scandinavian settlement at Cherrywood and Loughlinstown, Killiney (Ó Néill 1999; Ó Néill 2006), and a large multi-ditched enclosure complex at Rosepark, Balrothery (Carroll 2008; Carroll *et al*. 2008). Similarly the development of Cork City may account for a number of important excavations of early medieval enclosures in its general hinterland at Carrigaline Middle (Sherlock 2001:0130; 2002:0246), Carrigrohane (Moloney 2003:0188), Killanully (Mount 1992; 1995), Raheens I (Lennon 1993) and Raheens II (Lennon 1994). Residential and development pressures in towns and villages in Co. Meath uncovered early medieval sites including a souterrain complex at Athlumney, Navan (O'Sullivan E 1997:0424; Jones 1999:0701), a settlement/cemetery at Ninch, Laytown (McConway 2002) and a settlement/cemetery at Ratoath (Wallace 2010). Excavations prior to a shopping centre at Marshes Upper, Co. Louth (Gowen 1992a; McCormick and Crone 2000; Campbell 2002; Mossop 2002:1335) revealed an intensely settled early medieval landscape of souterrains, enclosures, fields and agricultural/industrial features.

University and Government-funded Excavations since the 1990s

University staff were still active in early medieval excavations from the 1990s onwards. Excavations by University College Cork were undertaken at Lisleagh (I and II) (Monk 1988, 1995, 1998); Ballynagallagh, Co. Limerick (Cleary 2006); and Caherlehillan, Co. Kerry (Monk 1998; Sheehan 2009); while University College Dublin excavations have focused on a multi-period crannog at Coolure Demesne, Lough Derravaragh, Co. Westmeath (O'Sullivan A *et al*. 2007) and a medieval pilgrim's church and graveyard at Templeteenaun, Ballinagee along the St. Kevin's pilgrim way in west Co. Wicklow (O'Sullivan and Warren 2004:1844). The National University of Ireland (Galway) has also conducted excavations on an number of early medieval sites, including an early medieval cashel at Rinnaraw, Co. Donegal (Comber 2006)

and more recently on various sites Barrees Valley, Beara Peninsula, Co. Cork (O'Brien 2009). A small number of excavations also have been conducted by external universities, for example the University of California, Berkeley, at the monastery of Mainistir Chiaráin on Inis Mor, Co. Galway (Ní Ghabhláin and Moran 1996:0161; Ní Ghabhláin 1997:0221; 1998:0259; 1999:0306).

From the early 1990s, however, universities began to establish affiliated commercial excavation units. These units have contributed towards the rise of university-related early medieval excavations in the 1990s and 2000s (Fig. 2.2 above). University College Cork's Archaeological Excavation Unit has been the most prolific, with notable early medieval excavations at Dromthacker, Co. Kerry (Cleary 2008) and Scrahane, Co. Kerry (O'Donnell 1997:0246, 1998:0284). The now disbanded UCD-based Irish Archaeological Wetland Unit (IAWU) surveyed and excavated a significant number of early medieval trackways in Bord na Móna peatlands (e.g. McDermott 2001:1085) as well as investigating a number of crannog sites including Bofeenaun, Co. Mayo (Keane 1995a) and Frenchgrove, Co. Mayo (McDermott 1998:0488) between 1990-2005.

The conservation of churches, buildings and other non-earthen monuments in the Republic of Ireland has always been project-managed by a partnership between the Office of Public Works and the National Monument Services of the Department of the Environment, Heritage and Local Government. From the 1980s, staff from the National Monuments Service have primarily concentrated upon restorative excavations at ecclesiastical sites including Skellig Michael, Co. Kerry (Horn *et al*. 2002), Ardfert, Co. Kerry (Moore 2007), Kilteel, Co. Kildare (Manning 1977-78, 1981-82), High Island, Co. Galway (Scally 1999; Marshall and Rourke 2000a, Marshall and Rourke 2000b) and Church Island, Lough Key, Co. Roscommon (King 2007). Cashels, such as Cathair Fionnúrach, Ballynavenoor, Co. Kerry (Gibbons 1994:0116, 1997:0228), and caves, such as Dunmore Cave, Mohil, Co. Kilkenny (Dowd *et al*. 2007) and Glencurran Cave, Co. Clare (Dowd 2007), also fell within this remit. Heritage-council supported research excavation have also been undertaken, including those recently at the site of an early medieval cashel at Caherconnell, Co. Clare, in conjunction with staff from TVAS Ireland (Hull and Comber 2008).

The slight decline in the number of early medieval government-funded excavations in the Republic of Ireland since the early 1990s is despite the establishment of the Discovery Programme in 1991 as a non-statutory, pure-research body. The Discovery Programme was funded initially through direct government grants, but now operates as an independent autonomous company funded mainly by an annual grant from the Heritage Council. It has investigated 'western stone forts' at Dún Eoghanachta, Inishmore, Aran Islands, Co. Galway (Cotter 1994, 1995b, 1995:0117, 1996), 'lake settlement' at Lough Kinale, Co. Westmeath (Fredengren 2002b), and 'medieval rural settlement' at Tulsk, Co. Roscommon (Brady and Gibson 2005). Discovery Programme excavations in the Ballyhoura Hills along the Tipperary/Limerick/Cork border (Doody 2008) have also revealed a significant prehistoric/ early medieval settlement complex.

In Northern Ireland, the excavation unit of the Environment and Heritage Service was put out to tender in 1995/6. This was originally won by Archaeological Development Services who established the Archaeological Excavation Unit, and more recently that role has been taken on by the Centre for Maritime Archaeology (CMA) at the University of Ulster, and the Centre for Archaeological Fieldwork (CAF) at Queen's University Belfast. The newly formed Environment and Heritage Service in Belfast adopted a more supervisory role, though it continued to be involved in excavations at various sites, including Aghavea Chuch, Co. Fermanagh (Ó Baoill 2000:0352). Many of these excavations, however, were collaborative with the Centre for Archaeological Fieldwork, for example Drumadoon, Co. Antrim (Williams and McSparron 2004; McSparron and Williams 2009). The CAF has undertaken excavations at various early ecclesiastical sites such as Boho, Co. Fermanagh (Donnelly *et al*. 2005) and Armoy, Co. Antrim (Ó Néill 2004:0008; Nelis 2005:0007), and a possible early medieval unenclosed settlement at Terryhoogan, Co. Armagh (McSparron 2007); and the CMA has

revisited Lawlor's excavations on the monastic site of Nendrum, Co. Down (McErlean and Crothers 2007; McErlean *et al*. 2007), as well as producing monographs on the archaeology of Strangford Lough (Forsythe *et al*. 2002). The development of these university-affiliated, but government-funded, institutions can account for the steady increase in government-funded early medieval excavations in Northern Ireland since the early 1990s, even taking into consideration the development of a commercial archaeological sector (Fig. 2.2 above).

Archaeology, and early medieval archaeology in particular, has benefited greatly from the massive expansion of excavations undertaken by the commercial sector during the 1990s and 2000s. The data produced by these excavations is still being synthesised, although the contraction and collapse of commercial archaeology companies post-2005 may result in some of this material never being fully integrated.

Trends and Patterns in Early Medieval Excavations in Ireland (1930-2007)

Over 3,600 excavations were undertaken on early medieval and *potential* early medieval sites in the period 1930 to 2007. Approximately 50% of these were of 'no archaeological significance' with the vast majority being one-off 'testing' and 'monitoring' excavations necessitated to comply with the planning process. The impact on these types of excavations can clearly be seen in the increase in the numbers of 'non-significant' sites should in Fig. 2.4. Around 20% of the sites revealed limited finds (e.g. animal bone; spindle whorls) and features (e.g. hearths, pits, enclosures, and possible structures). Just over 15% of the excavated sites produced significant quantities of early medieval finds, artefacts, structures and features, as well as substantial evidence for a particular activity (e.g. ironworking complex) or else evidence for a range of different industrial, agricultural and domestic activities. The settlement sites are summarised in Kerr *et al*. 2009. The remainder of the 3,600 excavations (just under 15%) could be classified as 'uncertain'. These typically consist of undated metalworking features, charcoal-pits, kilns, unenclosed dwellings, field systems, ecclesiastical enclosures and isolated burials which may, or may not, be early medieval.

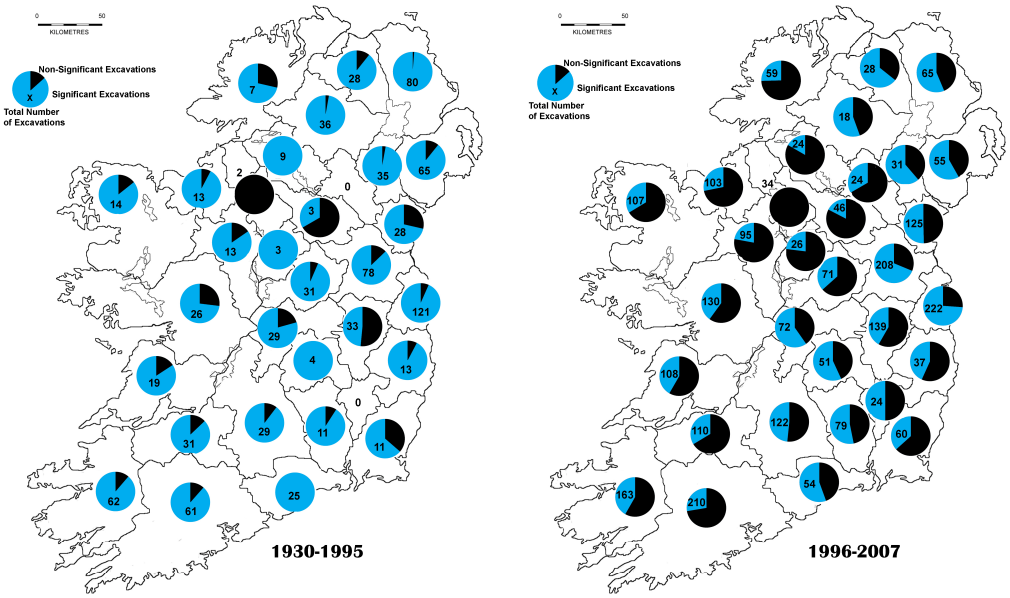

Fig. 2.4: Significant and 'Non-significant' excavations in Ireland by county (1930-1995; and 1996-2007)

The most significant early medieval sites excavated between 1930 and 1995 were found in northern Leinster (Cos Dublin, Louth and Meath), south-western Munster (Cos Cork and Kerry) and north-eastern Ulster (Cos Antrim and Down) (Fig. 2.1; Fig. 2.4). It is probably no

coincidence that these are close to university cities. Early medieval excavations have shown an increasing regionalisation since the late 1980s, largely dictated by development strategies and planning policies. Major infrastructural road and gas schemes have been responsible for the majority of the most significant early medieval excavations in Ireland in recent years. The earliest major road schemes (e.g. M1, M4 and N2) were predominantly confined to north-eastern Leinster (Cos Meath, Kildare, Dublin, Louth). It is possible that this concentration of sites may have been a phenomenon peculiar to eastern Leinster, however the expansion of the major road schemes outside this region in the early 2000s has uncovered settlement/cemeteries, unenclosed dwellings, field systems, kilns, mills and metalworking features in the roadtake of the M6, M7, M8 and N9/N10 (Fig. 2.3).

In the western counties (i.e. Connacht), the north-western counties, and parts of the midlands there is a high percentages of sites of no archaeological significance. This regional trend is undoubtedly related to the nature of excavations carried out in these counties (Fig. 2.1; Fig. 2.4), which tend to be either archaeological monitoring of top-soil stripping, or small-scale test excavations in advance of a solitary development, generally domestic dwellings in close proximity to early medieval archaeology monuments (i.e. largely raths).

Figures 2.1 and 2.4 show disparities between the trend of archaeological excavations in the Republic of Ireland and the trend in Northern Ireland. Until the 1980s, Northern Ireland's state and university bodies contributed a disproportionately high number of significant early medieval research and rescue excavations across the island as a whole. Since then, however, the expansion of the archaeological profession in Northern Ireland has been less clearly visible than in the Republic of Ireland. This was partly because Northern Ireland did not fully benefit from the economic expansion of the 'Celtic Tiger', and also because the 'Troubles' (and the slow recovery in their immediate aftermath) were serious brakes on internal investment. There have also been much fewer excavations of 'no archaeological significance' in Northern Ireland, possibly indicative of different requirements of the protective legislation in both jurisdictions. An increase in redevelopment in the early-2000s, however, is suggested by a slight surge in archaeological excavations in Northern Ireland during this period.

The Backwards Look: Understanding the Character of Early Medieval Archaeological Excavation in Ireland (1930-2010)

Dominant ideologies: State-centred narratives and the Culture-History Archaeological Paradigm

Political and economic change provide the key bases for understanding how early medieval archaeology in Ireland was created, sustained and how it has brought us to this point in time. The foundation of separate states in the south and north of Ireland in 1922 brought about major changes in Irish archaeology. A burgeoning 'political self-consciousness' north and south of the new border and an awareness of the potential role of archaeology in promoting state identities (Evans 1968, 7; O'Sullivan A 2003a) was to lead the investigation of many sites as the archaeological heritage was removed from the purview of the amateur, and placed in the hands of state-controlled organisations. In utter contrast to Britain (and particularly England), there is virtually no 'amateur archaeology' involvement in archaeological excavation in Ireland. Most Irish archaeologists would be astonished by non-professional metal detectorists discovering, and unearthing, archaeologically important material, such as the recent Anglo-Saxon Staffordshire hoard (Leahy and Bland 2009). Consequently most research has been done at the behest of the state, whether through government agencies, the third-level sector or public funding of archaeological investigation before development.

In the Irish Free State (and latterly Irish Republic), there was always considerable popular and scholarly interest in investigating the existence of a pre-Norman early medieval 'Golden

Age' (O'Sullivan J 1998, 178-81) and it was this ethos which shaped the early archaeological and historical research of this period. The common description of the period as 'early Christian' illustrated the long-held view that Christianity was one of the central ideological forces that defined and shaped this island's cultural history from the fifth till the twelfth centuries. Indeed the church's distinctive ruins and relics – round towers, high crosses, chalices, brooches and manuscripts – were seen as a material verification of a unique pre-invasion 'Golden Age' civilisation of 'Saints and Scholar's' who achieved considerable artistic, cultural and religious accomplishments in an otherwise barbaric 'Dark Age' world. In the mid twentieth century, the early Irish church was persistently linked with a distinctive 'Celtic' form of Church with supposedly similar institutions - the monastic federation or *paruchiae* – and common religious practices and beliefs. Out of these ideas emerged a national narrative plotting the origins and development of a Golden Age Irish Celtic Church, its transformation by Viking aggression and secularisation and ultimate reform in the twelfth century (Hughes 1966; Etchingham 1999a, 18 for a review).

The 'Golden Age' narrative was strongly rooted within the culture-history archaeological paradigm which continued to shape Irish early medieval archaeological research until relatively recently. The culture-history archaeological paradigm was built upon the ideas that the products of a given period and place have a recognizable style and through their distinctive shape and decoration etc. are in some sense characteristic of the society that produced them. Through investigating groups of archaeological assemblages, distinctive archaeological cultures were identified and significantly perceived as the material manifestation of a 'culture' of people. Within the context of a surge in nationalism in the first half of the twentieth century, it is not surprising that distinctive archaeological cultures were equated with groups of historic peoples (e.g. Celts, Saxons, Slavs etc). Unsurprisingly, the rich literature and highly sophisticated products of the 'Golden Age' narrative were used to affirm the existence of a unique and highly successful Gaelic Irish culture predating the arrival of the Anglo-Normans in the 1100s.

It has been argued that the culture-history archaeological paradigm was essentially anti-theoretical and subordinated the archaeology to historical evidence. Tierney (1998) has argued that empiricism – the belief in the primacy of the discovery and presentation of facts by a supposedly neutral observer – was the dominant philosophy in archaeology in twentieth century Ireland. Adopting a strongly left-wing perspective, he credited the dominance of this empiricist philosophy in Irish archaeology to a conservative native commercial and landed bourgeois class, who after the Easter Rising (1916), usurped control of the direction of the 'war of independence' and the policies of the newly founded Irish Free State (1922). Tierney argues that archaeologists were complicit in the promotion of the state-centred Golden Age 'Saints and Scholar's narrative which was central to the identity of this new conservative Ireland. 'Early Christian Ireland', the Golden Age of this nation's history, was conservative, Catholic, Gaelic and landed, echoing the ideals and policies of the social order of the newly born fledging Free State. The dominance of the Golden Age 'Saints and Scholars' historical model ensured that early medieval archaeological research in twentieth century conservative Ireland continued to be bound up with recording data and amassing information, rather than exploring how the past could be mobilised in the interest of the dominant social, economic and cultural interests in the present. The de Paors' *Early Christian Ireland* (1958) was the only major synthesis of the archaeology of early medieval Ireland to be published till the 1990s. It was written largely within this Golden Age 'Saints and Scholars' narrative with notable attention accorded to raths, crannogs and church sites and with good cognisance of and special attention to the contemporary historical sources.

The Harvard expedition to Ireland (1932-36) was the first ambitious excavation project in the Irish Free State. It was the closest thing to a state-sponsored programme of 'validation by excavation' and was strongly supported and endorsed by the Irish Free State government. The expedition focused largely on pre-Norman sites of high impact and historical importance such as royal sites and so tended to emphasise the dwellings of the wealthy and powerful. This had profound consequences for a generation of early medieval archaeological research

as the enormous quantity and richness of the excavated archaeology from sites such as Ballinderry 1, Co. Westmeath were used to promote and validate a culturally unique, distinct and highly advanced pre-Norman Irish civilisation (O'Sullivan J., 1998, 181; O'Sullivan, A., 2003, 20-23). The Harvard expedition's influences ensured that the early medieval crannogs and particularly raths occupied an important, special position in Irish archaeological field research in the Free State and latterly the Irish Republic with further significant excavations at the royal residence of Garranes, Co. Cork (Ó Riordáin 1942) and Knockea, Co. Limerick (O'Kelly 1967) as well as several other raths.

Like Tierney, Jerry O'Sullivan has explored how the myth of an 'early Christian Golden Age' was mobilised in the politics of the Irish Free State. He has suggested that these excavations were hugely influential in the development of normative ideas about early Irish society as rural, pastoral and largely based upon the activities of archetypal self-sufficient, small farming households that inhabited ringforts. As such they could be usefully portrayed (in terms of the socially conservative ethos of mid-twentieth Ireland) as living in a manner that was not entirely dissimilar to that of Irish rural communities in the 1930s and 1940s (O'Sullivan J., 1998, 182-84).

In Northern Ireland, 'political self-consciousness' (Evans 1968, 7) also arguably played an important role in defining the way in which archaeological excavation developed. Evans was the father figure of geographical and archaeological studies in Northern Ireland and was active in setting up and developing the state's institutions and organisations between the 1930s and 1970s. Stout (1996, 119-120) has suggested that Evans helped foster a distinct national identity for Northern Ireland by highlighting how environmental factors (e.g. the Drumlin belt of Ulster) forged cultural and historic distinctions between the north and south of Ireland through the ages. Based on a programme of excavation and fieldwork, Evans developed his ideas about a distinctive north-eastern distribution of court cairns in Ulster which established links in prehistory between Northern Ireland and Scotland and enabled him and others to view the seventeenth century Anglo/Scots plantation of Ulster, not as an example of a discontinuity, but as a manifestation of the enduring links between these parts of these islands (Stout 1996, 120). This interpretation was unequivocally repudiated in print by Evans' widow, who closed her article with the line: 'Stout has every right to comment on EEE's work and contribution, but the so-called facts he bases his argument on are so bizarre and fabricated as to make his arguments and conclusions ridiculous' (Evans 1999, 141).

Evans was also one of the principal proponents of the idea, persisting into recent times, that raths may have had an indigenous origin in early prehistory (Evans 1966, 192, O'Kelly 1970, 53; Limbert 1996). Evans particular anthro-geographic background shaped his ideas about long continuities in rural life and 'pre-Celtic' culture in Ireland (Stout 1996, 121-22), and the results of one excavation at Cush, Co. Limerick in which the excavator claimed to have found an urn burial post-dating a ringfort and souterrain (Ó Ríordain 1940), appeared to support this theory. It has been suggested by Stout (1996, 123) that Evans had a particular interest in minimising the perceived 'Celtic' (i.e. early medieval Gaelic influence) in Ireland by emphasising continuities back into prehistory within and between these islands.

Though the prehistoric origins of raths were the subject of continuing debate, there was never a doubt that raths were the settlement sites of self-sufficient farmers in early medieval Ireland (e.g. Proudfoot 1961). There was not, however, a clear understanding if all people in early medieval Ireland lived in raths or whether other classes of people (e.g. slaves) lived in unenclosed dwellings around and outside these sites. Estyn Evans was one of the principal advocates of early medieval nucleated clachan settlements. He interpreted these settlements, typically identified along the west coast, as relics of ancient settlement patterns with a pre-Celtic ancestry. Today this thesis has been largely discredited as they appear instead to have been a response to late-eighteenth and early-nineteenth century over-population (Mac Carthaigh and Whelan 1999) and while early medieval unenclosed settlements do occur in frequent numbers, very few appear to have been actually nucleated (Edwards 1990, 47). Although archaeologists were aware of the possible existence of early medieval clachan

settlements in the mid twentieth century, there was very little effort to try to locate less conspicuous unenclosed settlement sites (e.g. souterrains, unenclosed buildings and industrial sites) of this period. Exceptions included 'The Spectacles, Lough Gur' (Ó Ríordain 1949a), Inishkea North, Co. Mayo (Henry 1952b), Beginish, Co. Kerry (O'Kelly 1956), Craig Hill, Co. Antrim (Waterman 1956b) and Dooey, Co. Donegal (Ó Ríordain and Rynne 1961b).

Oddly enough given the fascination with the 'Celtic church', as O'Sullivan has observed, few ecclesiastical sites were also actually excavated between the 1930s and 1980s. Lawlor's (1925) excavation of Nendrum, Co. Down, albeit poorly conducted, was the last major published excavation of an early medieval ecclesiastical site until O'Kelly's investigations on Church Island, Co. Kerry (1958) and Fanning's work at Reask, Co. Kerry (1981). Instead, church sites have been traditionally 'perceived as enduring monuments rather than elements within a complex landscape of settlements and associated relationships (O'Sullivan J 1998, 184). The state has tended to regard church sites in terms of management problems its monuments present, rather than of the investigative opportunities the wider site represents (Cooney 1995, 265). Building on an earlier antiquarian tradition established by Petrie, Stokes and Champneys, scholarly interest at church sites has traditionally been focused on the art, architecture and basic layout of the stone monuments and buildings (e.g. de Paor and de Paor 1958; Harbison 1978b and 1982a; Hare and Hamlin 1986; Herity 1995b; O'Keeffe 2003). While contemporary secular settlements (e.g. raths) were frequently understood in terms of social organisation, dwelling practices and economy (Proudfoot 1961), the early Irish church was mainly interpreted in terms of its theology, belief and the art/architecture of its religious monuments. Vague notions did persist of Golden Age 'monastic cities' populated by large clerical and secular populations (e.g. Henry 1967, 42), though there was little attempt to archaeologically investigate these sites as settlements containing dwelling spaces and zones of industry, craft-working and agriculture.

Though traditional studies of the art/architecture and layout of ecclesiastical monuments have continued to be a fundamental part of early medieval ecclesiastical studies, there has been greater debate about how these sites were organised in terms of religious ideologies (Aitchison 1994; Ó Carragain 2009b) and recent excavations have shed considerable light on patterns and practices of pilgrimage (e.g. Inishmurray) in this period. Recent excavations, e.g. Ardfert, Armagh, Clonfad, Clonmacnoise, Downpatrick, High Island, Illaunloughan and Iniscealtra, have all uncovered a wealth of new information about habitation, industry and agriculture at a variety of early medieval church sites from major establishments, dependent foundations to smaller hermitages and monasteries. These excavations are now making archaeologists aware that ecclesiastical sites should not be understood anymore in terms of group of monuments, but instead as settlements, in which different communities (clerics, tenants and craft-workers) lived, worked, worshipped and buried their dead in the early medieval period.

This excavated evidence also clearly offers the potential to investigate the role of church sites in the indigenous origins of urban living in the early medieval period. Doherty (1985) has been the principle proponent of this hypothesis and has suggested that some of the major ecclesiastical establishments (e.g. Clonmacnoise and Armagh) displayed urban characteristics such as market-places from the tenth century. The potential role of early church sites in the process of Irish urbanisation has generated considerable debate amongst historians and archaeologists (Valante 1998; Swift 1998; Bradley 1998; Graham 1987). While Doherty supported Hughes's theory of an increasingly secularised and populated church, he took a more positive view of these indigenous settlements, suggesting that they emerged and developed from increasing trade and interaction with Viking coastal bases. Clearly then, there is important scope to investigate the roles and relationships of major ecclesiastical sites and Viking towns in the process of urbanisation in the early medieval period.

From the 1970s, urban redevelopment also began to reveal valuable information about the origins and topographical development of Ireland's major cities and towns. The National Museum's campaign of excavations of Viking and medieval Dublin at High Street through the

late 1960s and early 1970s (Ó Ríordáin 1971, 1976), culminated in the Woodquay and Fishamble Street excavations in the later 1970s in advance of the Dublin Civic offices (e.g. Bradley 1984; Wallace 1985b). The rich excavated archaeology gradually transformed the popular perception of Dublin as a 'Viking town'; arguably introduced entirely new subjects in Irish archaeology (e.g. 'urban archaeology', 'Viking Age archaeology') and politicised a generation of Irish archaeologists to the need for both rescue archaeological programmes as well as stronger monument conservation policies and heritage management as part of the planning process. Subsequent urban redevelopment within the historic urban cores of Waterford, Cork, Limerick and Wexford has transformed our understanding about the layout and development of plot boundaries, buildings, streetscapes, waterfront revetments and town defences at these settlements.

Setting aside a more general overview of the early medieval archaeology of Britain and Ireland (Laing 1975; 2006), *The Archaeology of Early Medieval Ireland* (Edwards 1990) represented the first major synthesis of early medieval Irish archaeology since de Paor's *Early Christian Ireland* (1958) thirty years earlier. The book explored the period through a number of thematic chapters; each containing a mine of information about settlement, the church, economy and so forth. It has been described as the most sophisticated example of an empiricist cultural-historical approach to early medieval Ireland and it is suggested that 'the book is structured in such a way as to give the impression that the text is a simple exposition of facts' (Tierney 1998, 195). Although Edwards does adopt a descriptive approach, the book still nevertheless remains today the most important reference source for anyone interested in early medieval Irish archaeology.

Theorising Early Medieval Irish Archaeology: Building Alternative Archaeologies of Early Medieval Ireland

Since the 1990s, there has been a growing debate about the need to theorise archaeological studies in Ireland (Cooney 1995). There has never been a strong 'processualist' archaeological tradition in early medieval research in Ireland, due primarily to the dominance of a culture-history archaeological paradigm which has maintained a close relationship between archaeology and historical narratives. Charles Mytum's *Origins of Early Christian Ireland* (1992) and Matthew Stout's *The Irish Ringfort* (1997) represents two of the few major early medieval studies written from an explicitly (or implicitly in Stout's case) theoretical processualist or New Archaeology/New Geography perspective. In Mytum's study, the causes of dynamic change in early medieval Ireland were credited to the introduction of Christian Salvationist beliefs from abroad, triggering a revolution in the organisation of land-use and settlement as people began to pursue individual free enterprise and greater social mobility. The book has been negatively received, nor is cited often now in publications, partly because of the complete lack of a scientific processualist archaeological tradition in Ireland and partly because of the very negative reviews it received. It has also been criticised for its extension of 'neo-liberal assumptions about human nature, society, competition and entrepreneurship' into early medieval Ireland (Tierney 1998, 196) and its poor application of documentary sources to the archaeological field data (O'Sullivan J 1998, 186).

In *The Irish Ringfort* (1997), Stout found that the vast majority of ringforts were constructed and occupied over a relatively brief 300 year period between the late sixth and ninth century A.D from a careful – if arguably flawed – analysis of available radiocarbon, dendrochronological and artefact evidence. He drew the conclusion that nearly all ringforts were occupied at roughly the same time in this brief period and supported by the presence of approximately 45,000 extant or non-extant ringforts, he developed a cluster-analysis model which explicitly linked the distribution of different morphological forms of ringforts (univallate, bivallate and trivallate) with the spatial patterning of the hierarchial society of different grades of freemen in early medieval Irish *túatha,* as famously expressed in seventh and eighth century Irish law tracts (e.g. *Críth Gabhlach*). Stout's *Irish Ringfort* (1997) is a must

read for anyone interested in early medieval settlement studies though has been criticised for producing a static normative model of early medieval Irish society and for failing to account for the fact that the banks and ditches of excavated raths were frequently re-worked and re-organised through the early medieval period (Monk 1988, 35).

One of the major flaws of Stout's *The Irish Ringfort* was that it was difficult to apply the model to areas of Ireland where raths are relatively scarce in the Irish landscape (e.g. traditional Leinster). This model has also been superseded by the increasing numbers of other forms of settlement sites discovered in the years since *The Irish Ringfort* was published, and which do not fit into the structural hierarchy. Given the scale of archaeological excavations, particularly along recent road schemes, an array of previously unknown archaeological evidence began to be discovered well beyond the bounds of the cartographic circles used to denote sites recorded in the Sites and Monuments Record of both jurisdictions (RMP and SMRNI) and scheduled monuments. Significantly, these archaeological excavations were now also being carried out on sites other than the traditional monuments (ringforts, churches) that had been the focus for generations, and new forms of archaeological evidence (e.g. isolated ironworking hearths, charcoal pits, unenclosed settlements, cemeteries and settlement/cemeteries) began to be recognised. Out of this mass of new excavated evidence is an emerging awareness of the morphological diversity of early medieval Irish settlement enclosures which have been traditionally lumped together as 'ringforts' by archaeologists, particularly in the south. Though there has been some debate about the possible discovery of new settlement types such as 'plectrum-shaped enclosures' (Coyne and Collins 2003; Collins and Coyne 2007), more recent publications have instead sought to break away from attempting to classify these sites to instead emphasising their diversity and unique cultural biographies through time (Kinsella 2010; Fitzpatrick 2009).

These recent excavations have demolished the long standing assumption in the traditional Golden Age scholarly narrative (O'Sullivan J 1998, 178-81) that everyone in the early medieval period were interred within congregational burial ground at an ecclesiastical site. The considerable corpus of excavated early medieval cemeteries in recent years demonstrates instead a more heterogeneous scene of burials within settlement/cemeteries, caves, souterrains and in isolated contexts, frequently along gravel ridges. Though the centuries from A.D. 400-1200 are traditionally regarded as the 'early Christian period', there is a growing body of archaeological evidence for the long-lived nature of Pagan practices, or more appropriately the slow conversion of Irish society (or elements of it) to Christian belief and practice; as well as a growing sense of the diversity and complexity of burial practices during this period across the island. There has also been a major revolution in our understanding of industry and agriculture in early medieval Ireland. Excavations, for instance, have advanced our understanding of the chronology and changing character of cereal-drying kilns and water mills while our knowledge of the processes and features involved in ferrous and non ferrous metalworking has equally expanded and developed.

Since the late 1990s, Irish archaeologists have actively embraced post-processual archaeological theory in early medieval research. This social theory argues for the dynamic and socially meaningful nature of material-culture, human agency and the possibility of multiple interpretations of the past. Material-culture could be used actively to control and manipulate how different groups of people used space and to shape social relationships between different groups of people (e.g. kings, clerics, tenants and slaves). Post-processual theory actively encouraged exploring how hegemonic groups organised space in such a way as to control how other groups of people lived their daily lives and henceforth understood their different roles in society. However, the meaning of this space was never fixed, but could be contested by these marginal groups through overt or subtle uses of material-culture. Emerging from these ideas has been the view that historical and cultural conditions in the present can shape how people interpret the past. There can be many different, alternative and equally as important interpretations of the early medieval past outside and other than the dominant narrative of a 'Golden Age' of saints and scholars. Here, archaeologists have sought to provide a voice for marginal groups (e.g. slaves, women and other ethnic groups)

previously excluded from the dominant narrative of saints, scholars and powerful kings. There have been significant archaeological studies of the un-free (e.g. Kinsella 2005; Boyle 2004), women (e.g. Doyle 2007) and Anglo-Saxon influences (e.g. O'Brien 1993, 2003) in early medieval Ireland; areas of research which were never emphasised in the traditional narrative. Aidan O'Sullivan (2008) has provided a description and analysis of early medieval houses in Ireland, within a perspective that argues that these were the stages on which social identities of status, kinship and gender were negotiated and performed. In another case-study (2003b, 2005), he has sought to explore how other marginal groups such as medieval fisherman lived out their daily lives along estuaries in Britain and Ireland.

Conclusion

A long tradition of excavating early medieval sites in Ireland, and changes across time in aims, practices and outcomes provide a substantial and influential legacy that impacts on our understanding of the period. Aspects of this will be explored in subsequent chapters, but some brief concluding comments on the significance of discoveries can be made here. Early research excavations tended to focus on substantial upstanding monuments, such as the raths of Garranes, Co. Cork (Ó Ríordáin 1942a) and Garryduff, Co. Cork (O'Kelly 1963). This dual emphasis on excavating known archaeological sites and excavating substantial (usually high status) sites meant that a high proportion of university excavations were undertaken on 'significant' or 'highly significant' early medieval sites. These excavations also tended to last for a number of excavation seasons, e.g. Clogher, Co. Tyrone (Warner 1973; 2000), or Knowth, Co. Meath (Eogan 1968; 2007).

Government-funded rescue excavations also tended to focus on upstanding, substantial sites, such as Rathmullan, Co. Down (Lynn 1981-2, 1988g), or Deer Park Farms, Co. Antrim (Lynn 1987a; Lynn 1987b; Lynn 1988f; Lynn 1989), and thus also tended to work on 'significant' or 'highly significant' sites. Many of these sites were excavated as past of farm improvement schemes, but a number of significant archaeological sites were also excavated by government archaeologists in urban centres. Redevelopment projects in the 1970s and 1980s revealed significant archaeological evidence in the urban cores of the Hiberno-Scandinavian towns of Dublin (Wallace 1985a) and Waterford (Hurley *et al*. 1997), as well as at ecclesiastical sites such as Armagh (Gaskell-Brown and Harper 1984; Lynn 1988a) and Downpatrick, Co. Down (Brannon 1987). The nature of excavation in Ireland between 1930 and the early-1990s meant that few excavations of no archaeological significance were undertaken on, or near, Early Medieval sites as excavations were either research- or rescue-focused.

From the mid-1990s onwards, with the links between the Celtic Tiger era infrastructural development, increased planning and legislative requirements and a growth of a commercial sector, there has been a clear increase in both the number, and the proportion, of sites of 'no archaeological significance' uncovered during excavation. These, however, show a tendency to be found when monitoring top-soil stripping, or undertaking test excavations in compliance with planning legislation for an isolated dwelling or small-scale residential development. Excavations carried out in advance of large commercial or infrastructural developments and road schemes have also revealed a higher proportion of significant early medieval sites. These results were partly due to the scale of excavations undertaken along these projects, and also partly due to the fact that such investigations tended to be undertaken with the intention of complete excavation of the (potential) archaeological site. These recent excavations also moved beyond the boundaries of the traditional early medieval site type (raths, souterrains, crannogs and churches) and into the wider landscape setting, uncovering a whole new and less readily dateable set of (potential) early medieval archaeological evidence including ironworking hearths and pits, field systems and cereal-drying kilns.

The large numbers of early medieval sites excavated since the mid-1990s have had a massive impact on Irish archaeology. The accepted hierarchies of secular settlement have been challenged by the discovery of hitherto unrecognised site-types; the perceived uniformity of farming life and economic practices have unravelled; and perceived church-control over burial

practices has been weakened by the identification of 'secular' cemeteries and much more variable burial practices. These changes have not yet been fully synthesised into the overall understanding of the archaeology of the early medieval period and provide an exciting potential for transforming our understanding of this period in Ireland's past.

By the mid-2000s, archaeology particularly in the Republic of Ireland had been utterly transformed from a largely academic or state-run profession, into a thriving commercial enterprise or professional industry; and archaeological practice had undergone a similar metamorphosis. A 2007 survey of the Irish archaeological profession at the 'crest of this wave' indicated that there was an estimated 1,700 archaeologists employed in the archaeological sector in the Republic of Ireland. This figure contrasts with a number of 650 for the whole of Ireland recorded in 2002 representing an increase of over 250% (McDermott and La Piscopia 2008). This survey captured Irish archaeology at its peak and provided a valuable dataset about the rapid expansion of the profession required to address this significant period of economic and infrastructural growth.

The remarkable period of Irish growth from the early 1990s to the mid 2000s hid a growing reliance of the Irish economy on a rapidly over-heating construction industry, and the financial crisis of autumn 2008 heralded a remarkably swift return to the old days of dole queues and net emigration. The archaeological profession, cushioned in the previous 15 years by an unusually buoyant economic climate, was left horribly exposed and has since considerably contracted to early-mid 1990s levels. The future of Irish archaeology is not yet clear though there is good reason to be optimistic about the future of the industry and the undoubted experience gained and archaeological evidence uncovered from the remarkable, albeit short-lived boom of archaeological excavations during the 1990s and 2000s.

Chapter 2: Early Medieval Dwellings and Settlements

The early medieval Irish landscape was intensely settled by a large and growing population, as is indicated by a wealth of archaeological, historical and palaeoenvironmental evidence. Through multidisciplinary sources, we can reconstruct a landscape of settlements, fields, routeways and other agricultural features, all situated in an environment that was intensively managed, valued and exploited. The settlement landscape of early medieval Ireland has resulted in one of the richest archaeological landscapes surviving in Europe; including not only thousands of classic early medieval dwelling enclosures (e.g. raths/raths, cashels, crannogs, ecclesiastical enclosures), but also an emerging range of evidence for other types of enclosure, unenclosed dwellings, cave occupations, settlements with cemeteries, coastal midden sites, and seasonal or temporary habitations in wetland, upland and coastal contexts.

Archaeological excavation of early medieval settlements has produced a range of information on their physical character and organisation (e.g. O'Sullivan A 2008) and the inhabitation of the wider landscape (Edwards 2005). Early medieval settlement excavations also provide intact archaeological and palaeoecological archives that can be used, *inter alia*, to reconstruct food production, diet and economy (McCormick and Murray 2007) and the social and technological organisation of crafts and technology (Comber 2008). These will be discussed in subsequent chapters. Early medieval settlement archaeology can also be used to reconstruct the social, ideological and economic relationships that bound this society together (e.g. Stout 1997). This chapter will review the emerging evidence for settlement archaeology revealed by archaeological excavation (emphasising excavation rather than archaeological survey or historical studies) and focusing on secular rural and urban settlement. The following chapter on the early medieval church will review the evidence for ecclesiastical settlement.

Early medieval settlement has long been a subject of interest to the scholar and a range of studies have described its classic site types – whether they be raths or raths (e.g. Edwards 1990; Stout 2000; Edwards 2005), crannogs (O'Sullivan A 1998a; Fredengren 2002a), or Ireland's Hiberno-Scandinavian towns (Wallace 1992b; Hurley 1992; Wallace 2005). In recent years, particularly with the large-scale gas pipeline and roadway developments, early medieval settlement archaeology has been re-invigorated by a renewed interest in the range and diversity of the settlement landscape. Recent excavations have uncovered a diversity of sites as settlement/cemeteries, e.g. Raystown, Co. Meath (Seaver 2006, 2010) and non-circular shaped enclosures, e.g. Newtown, Co. Limerick (Coyne 2005, 2006a), There is also an emerging body of evidence for unenclosed dwelling places that have still not been fully integrated into syntheses and overviews of settlement synthesis. These are represented by isolated souterrains, e.g. Balrenny, Co. Meath (Eogan and Bradley 1977), unenclosed settlements, e.g. Ballyutoag, Co. Antrim (Williams 1984), coastal middens and sand dune occupation sites, e.g. Oughtymore, Co. Londonderry (Mallory and Woodman 1984), and cave dwellings, e.g. Kilgreany, Co. Waterford (Movius 1935; Dowd 2002). Our knowledge of the early medieval settlement landscape has also been transformed by the discovery of a range of archaeological features testifying to the intensity of land-use outside the classic settlement enclosures – such as field systems, corn-drying kilns, horizontal water mills, ironworking sites, charcoal production pits and other enigmatic features.

The early medieval settlement landscape in Ireland, as in much of the rest of Europe, was largely rural and pastoral, with people living on and working the land around them, for example in non-Romanised continental Europe the landscape was dominated by isolated farmsteads or *einzelhöfen* (e.g Proudfoot 1961, 94). In large tracts of early medieval northwest Europe, however, there were nucleated settlements, such as the clusters of longhouses found in the Netherlands and northern Germany in the fourth century A.D., and the 'villages' of later Anglo-Saxon England (Hamerow 2002). Many of these emerged from late Iron Age or sub-Roman nucleated settlements. In Ireland however, there is little evidence for nucleated rural settlement, and between the sixth and the tenth century (and probably afterwards) the early medieval landscape remained largely one of dispersed and

enclosed rural dwellings, principally homesteads or farmsteads on familial or lordly lands. There are problems with tracing change across time in Ireland, and while the settlement landscape of the seventh or eighth century is reasonably well understood, the developments of the ninth or tenth century are less clear. It has been suggested that there is early Irish historical evidence by the tenth century for a shift from dispersed settlements (e.g. the rath) to some type of settlement nucleation in the form of a *baile* or a cluster of dwellings around a lordly residence (e.g. Doherty 2000). However, despite a decade or more of large-scale, fairly randomly located roadways excavations, the archaeological evidence for such hypothetical nucleated rural settlements has failed to appear. Early medieval nucleated settlements only emerge by the ninth century, potentially with the development of monastic towns (and this remains a matter of debate; Doherty 1985; Bradley 1987; Swift 1998) and certainly with the development of the Norse towns at Dublin, Wexford, Waterford, Cork and Limerick from the early tenth century A.D. onwards (Wallace 2001, 2005; Hurley 1992).

Early Medieval Raths/Cashels

The rath or ringfort has long been seen as the defining settlement-type of the early medieval period (e.g. Proudfoot 1961; Edwards 1990, 2005; Stout 1997). The early medieval rath was an enclosed settlement and various words are used today to denote it; including rath, cashel, liss and caher. The term 'rath' has been argued to be more appropriate than 'rath' for this site type because it is closer to the Old Irish term for the *raith* or 'earthen rampart' that was situated around the enclosed space (*les*) (Kelly 1997, 364), and it also eschews the military connotations of the term 'rath' (Mallory and McNeill 1995, 198). In this study the term 'rath' will be used to refer to earthen-banked enclosures, while 'cashel' will be used to refer to stone-walled enclosures. Interestingly, archaeologists in Northern Ireland have tended to use the term 'rath' (e.g. Proudfoot 1961) but the reasons for their choice is unclear, given the rarity of the term in Ulster place names compared with the rest of the island (Flanagan and Flanagan 1994, 135). Estimates of the number of raths in Ireland, based on surviving sites or records of destroyed sites, have varied greatly. The first reliable estimate of their numbers was drawn up on the basis of the records of the Archaeological Survey of Ireland (Republic of Ireland) and the records of the (then) Environment and Heritage Service (Northern Ireland). This estimate (based on figures available in March 1995) was that there were at least 45,119 probable raths in Ireland but that only 41% have been positively identified as such (Stout 1997, 53) .

The classic description of the rath is included in the first edition of *Antiquities of the Irish Countryside*: 'in its simplest form, a space most frequently circular, surrounded by a bank and fosse or simply by a rampart of stone' (Ó Ríordáin 1942b, 5). The classification of raths has a superficial simplicity – univallate, bivallate and trivallate raths reflecting the number (one, two or three) of banks and ditches an individual site has. Raised raths (or platform raths) can also be added to this list of rath types, as can cashels, which are generally regarded as stone-built versions of raths (Edwards 1990, 11-19). In early medieval laws and narrative literature, houses and dwellings are commonly described as being located within an enclosed area known as a *les*, or *lios* (translated as 'farmyard, or courtyard') (Kelly 1997, 364). The references to *les* or *lios* were formerly interpreted as implying a circular circuit, such as a rath, but recent excavations have shown that early medieval enclosures existed in a variety of shapes and forms. Early medieval peoples may have seen themselves as essentially living within an *enclosure*, whether or not it was called a *ráth, caisel, dún* or *les*. All such enclosures were primarily enclosed spaces bounded by a bank, ditch, wall or palisade that usefully defined the household or domestic space from the outside land, or were used for livestock, crafts and industry and a range of occupation activities.

The majority of raths are univallate, i.e. with a single bank and external ditch. Stout (1997, 17) has produced the first reliable statistics for their frequency. He states that they 'account for over 80% of sites in most areas: 90% … in Morgallion barony, Co. Meath, 88% in parts of Co. Leitrim; 88% in north Kerry; 85% in Braid and Upper Glenarm valleys, Antrim; 83% in southern Donegal; 82% in Cruachain, Roscommon; 81% in the south-west midlands; 76% on the Ivereagh Peninsula in Kerry; and 69% in County Louth' (*ibid*. 17). Stout (1997, 18) notes

that most bivallate raths have, in fact, rather than two ditches have only one ditch, however in a survey of the south-west midlands only one of 37 bivallate raths had a second ditch, while in County Louth some 78% are without a second ditch (*ibid.*). Further confusion is provided by a type known as a 'counterscarp rath', a term that has been applied principally to sites in Ulster (Davies 1947; Jope 1966). This describes a rath with an internal bank, a ditch and a low external bank. Kerr (2007, 3) notes that in many cases this is erroneously equated with a multivallate rath, noting that 'the external counterscarp bank may not represent an event contemporary with the construction of the rath, but may represent maintenance of the ditch, whether during occupation of the rath, or at a later, more recent date'. Trivallate raths – with a triple arrangement of banks and ditches – are extremely rare, and only two examples have been archaeologically excavated: Garranes, Co. Cork (Ó Ríordáin 1942) and Ballycatteen, Co. Cork (Ó Ríordáin and Hartnett 1943).

Attempts to differentiate between 'platform raths' and 'raised raths' on typological grounds have been rather unsuccessful (McNeill 1975a, 49; Kerr 2009, 64-65). Height has been suggested as a distinguishing factor between 'platform raths' and 'raised raths', but there seems to be no clear consensus. For example, Jope (1966, 185-95) set the height cut-off mark for the raised rath mound at approximately 3m-4m (a fairly arbitrary figure) whereas McNeill (1975, 49) suggested a more modest (but again, arbitrary) height of approximately 2m. Raised raths, unlike platform raths, have been defined as having 'a perimeter bank around the top area which slopes down towards the entrance…sometimes reached across a causeway or up a ramp' (Jope 1966, 116). This definition has been used in an attempt to differentiate raised raths from twelfth-/thirteenth-century Anglo-Norman mottes on a morphological basis (McNeill 2007, 11). It seems that the only conclusive way to differentiate between raised raths and platform raths is by archaeological excavation. Three methods for the construction of these monument types have been outlined (Lynn 1981-2, 149). Most platform raths would seem to have been created by scarping a natural knoll or drumlin-top. Raised raths, however, were constructed through a combination of the accumulation of occupation material and the importation of soil and other material. This was the method used at Rathmullen, Co. Down (Lynn 1981-2; 1988g), Gransha, Co. Down (Lynn 1985; 1988d), and at Deer Park Farms, Co. Antrim (Lynn 1987a; 1987b; 1988b; 1988f, 1989; Lynn and McDowell 1988a). In all these instances the sites seem to have originated as 'flat' univallate raths. In other instances, raised raths were built on a 'green-field' site and was constructed as a single event with habitation being confined to the summit, e.g. Big Glebe, Co. Londonderry (Lynn 1988e). The Northern Ireland Sites and Monuments Record (NISMR) indicates that between 15% and 20% of raths are recognized as 'platform raths' or 'raised raths' (Kerr 2007). Similar proportions are found elsewhere in Ireland, for example 19% of raths in the south-west midlands are of 'platform' type, while 15% of those in Co. Louth have raised interiors (Stout 1997, 17).

Cashels are essentially regarded as stone versions of earthen raths, and their presence in any given area is generally seen as a result of environmental/geological determinism. As such: 'the majority occur in rocky country with suitable stone for wall building…as a result they are much more characteristic of western Ireland than the east' (Edwards 1990, 14). Ditches were generally not regarded as an integral part of the design of cashels, and this may give some indication as to how these sites were originally constructed. It might be informative that in the case of many later medieval castles, such as at Greencastle, Co. Down (Lynn 1988h, 67-68), the external ditch served a dual function as both defence and a rock quarry for raw building material. The absence of such quarry ditches at early medieval cashels suggests that the building stone was sourced through other means, perhaps largely found as field-stones. Even when bedrock was quarried into in the construction of rath ditches, as was the case at Ballycatteen (Ó Ríordáin and Hartnett 1943, 3), Garranes (Ó Ríordáin 1942, 81-82) and Garryduff 1 (O'Kelly 1963, 18, Plate 2) - all Co. Cork - there was no attempt to build cashel-type walls or even stone-faced banks. Ditches were present at the cashels of Staigue and Cahersavane, Co. Kerry, (O'Sullivan and Sheehan 1996, 195), but it is possible that these were built on the site of pre-existing raths. Earthen raths are more common in this area of

Co. Kerry than cashels (*ibid*. 135), and this raises the possibility that cashels are a later phenomenon than earthen raths, something that is considered further below.

Archaeological surveys and excavations show that the interiors of raths and cashels have great variation in size. The central living area of (supposedly high-status) multivallate raths tends not to be much larger than those of (supposedly lower-status) univallate raths (Stout 1997, 18) and it should be noted that some univallate raths can have extremely large interiors. There can also be considerable variation in the size of the enclosed space within a given area (*ibid*. 15), for example, in the south west midlands, this area ranged in diameter from 15.5m to 75m, with 40% having interior diameters of 28m-35m. The early Irish law text *Críth Gablach* ('Law of Status') states that the internal diameter of a royal enclosure ('*les*') should be 'seven score feet' (MacNeill 1923, 305), and, although Kelly (1997, 565) indicates that the early Irish '*traig*' is similar, if marginally shorter, than the imperial foot, this still works out at around 40m. Cashels, like raths, vary greatly in the size of their internal diameter, and the thickness and height of their walls. There is, for example, no suggestion that the surviving walls of the modest-sized Dromena, Co. Down (Jope 1966, 176) could have ever achieved the height and monumentality of sites such as Staigue, Co. Kerry (O'Sullivan and Sheehan 1996, 195) or Griannán of Aileach, Carrowreagh, Co. Donegal (Lacey 1983, 111). Where comparisons have been made, it was found that the internal diameter of cashels is generally smaller than those of earthen raths, for example in Co. Donegal nearly 60% of cashels have diameters between 15m and 25m (Edwards 1990, 15).

Warfare and political turmoil was a regular facet of early medieval society in Ireland, and the annals list numbers of raids, battles and violent deaths every year. Raths, despite the modern term ringfort, were not military fortifications (although some may have been strategically located and used as such). Problems with the military interpretation of raths had been aired since the early eighteenth century. The smallest sites 'are so low and of such strait dimensions they could not possibly receive a number anyways considerable to form a garrison, but rather seem designed for habitations only and the dwellings of single families' (Molyneux 1725, 209). Molyneux suggests that the small raths in Co. Down developed a form of defence in depth since 'they lie so close together that for many miles they stand in fight and call of one another' (*ibid*.). A similar argument was made for the disposition of the 'Danish forts' in Co. Londonderry: 'they are all so disposed so as that a fire, kindled in one, may be seen to the next on either side; it seems the telegraph is not entirely modern' (Sampson 1802, 499).

The early discussions on the military viability of raths were based on the belief that these sites were constructed by an invading, colonising force (i.e. the Vikings) and were used to subject the local population. The Viking origin of raths has since been refuted, and a modern analysis of the military or defensive potential of raths within the political realities of early medieval Ireland was outlined by Mallory and McNeill (1991, 196-98). In the first instance they noted that the entrances were almost invariably poorly designed for defensive purposes. Secondly, the general absence of a strong fence along the crest of the bank greatly compromised their defensive potential. Thirdly, they noted that the ditch design was poor: 'the front slope of the bank and sides of the ditch were constructed at quite shallow angles, not the steep sides that we expect for defences (*ibid*. 198). Furthermore there is little evidence that the ditches were routinely cleaned after inevitable silting of material into them, thus maintaining any defensive purposes that the banks and ditch may have had. Fourthly, they note that multiple banks-and-ditches are no more effective as defensive structures than a solitary bank. To be defensively effective they note that 'the inner [enclosure] should overlook the outer ones so that they do not obstruct the defender's vision or fire; if they are to be used in succession; it has to be possible to fall back from the outer to the inner' (*ibid*.). Finally they note that 'the perimeter of a rath thirty metres in diameter is about 100 metres long; this is a long way for single family, who we think lived in a rath, to guard without help; if the idea was that their neighbours all rallied round to help defend what was in effect a communal fortress, we would expect fewer of them and that they would be in more impressive defensive sitings' (*ibid*.). These arguments are extremely persuasive and they

conclude that raths were not made for defensive purposes but for social and ideological reasons.

A reappraisal of the defensive capabilities of early medieval settlements was produced by Lyttleton and Monk (2007). They argue that the presence of palisades on the top of many rath banks (*ibid*. 11) mean that the sites could have had a military function, although they draw a distinction between 'defended' and 'defensible' (*ibid*. 13). Their argument that raths are 'defensible' does not radically diverge from the findings outlined by Mallory and McNeill (above), and, in the light of warfare dominated by cattle-raiding, it has been earlier argued that the bank and ditch of the rath offered some measure of protection to their inhabitants. McCormick (1995a, 34) and McCormick and Murray (2007, 109-110) have stated that the primary aim of these enclosures was to protect cattle which were the basis of wealth at this time. Documentary evidence from later medieval Scotland note that the objective of cattle-raiding was to steal cattle while not unnecessarily endangering those involved in the activity (*ibid*. 110), thus, although livestock were not kept within a rath on a regular basis, bringing the livestock into the rath during a raid could usually have been an effective deterrent.

In the final decade of the nineteenth century, Thomas Westropp undertook a mammoth task to record the 'ancient forts of Ireland'. Unlike earlier commentators, Westropp challenged the assumption that raths were of Viking origin: 'Giraldus Cambrensis, with countless other errors, originated the theory that our raths and *lisses* had been made by the Danes' (Westropp 1901, 636). Instead, he claimed that raths were a native creation and regarded them as being either 'fortifications or […] cattle bawns' (*ibid*. 637). Westropp differentiated between a 'bawn' and a 'residential fort' on two counts – bawns were of 'less imposing massiveness' than the 'residential fort'; and bawns were primarily cattle-enclosures. Although cattle may also have been occasionally kept within the 'residential fort', these were primarily domestic structures (*ibid.* 641). Since the 1930s, the rath/cashel has been interpreted as the classic – and most representative – type of homestead used by the Irish rural, pastoral society. O'Sullivan (J, 1998) has reviewed the historiography of previous studies of raths and suggested that the past perception of these as the archetypal dwellings of the self-sufficient, prosperous early Irish farmers was not accidental. He argues that it relates to Irish politics of the 1930s/1940s, when the earliest university-based rath excavations were undertaken, and reflects a desire to re-create a self-sufficient, strong farming class in post-Independence Ireland.

Most of the early medieval settlements in Ireland are now viewed as being some variation on the farmstead motif. The agricultural possibilities of raths, and to a lesser extent cashels, have been investigated through a number of studies from the late 1960s on. Statistical tests on soil preferences or altitude bands were a natural progression of the early quantitative studies on early medieval settlement – such as Fahy (1969); Barrett and Graham (1975); and Bennett (1989) – which focused largely on the topography of rath distributions. These studies established that raths were generally located on good agricultural land avoiding valley bottoms, and upland areas, and this pattern was largely confirmed by regional archaeological surveys, e.g. Co. Donegal (Lacey 1983); Ikerran, Co. Tipperary (Stout 1984); Iveragh, Co. Kerry (O'Sullivan and Sheehan 1996).

Stout (1997), in an island-wide study, identified that the lowest densities of raths was found in the mountainous areas, and especially in the lands of west Connaught and north-west Ulster, a pattern that can be equated with the relatively poor agricultural lands (Fig. 3.1). This study also highlighted the relatively low incidence of raths in the rich lands of Leinster, a result that, superficially, seems to throw the association of raths and farmland into doubt. The suggestion that there was a low densisity of raths in Leinster during the early medieval period finds some support in the placename evidence. The term '*lios*' or '*les*' – 'the space about a dwelling house or houses enclosed by a bank or rampart' (Flanagan and Flanagan 1994, 112), i.e. a rath – is a common placename element throughout Ireland. There is a low occurrence of these terms in placenames in west Connaught and north-west Ulster – areas noted by Stout as having low rath densities – and also over most of Leinster (Flanagan and

Flanagan 1994, 111). This may support the claim that there always was a low density of raths in Leinster, although it fails to raise any explanation for this phenomenon. McCormick and Murray (2007, 112-13) argue that this is due to changes in the livestock economy from the ninth century onwards; and it is also possible that the adoption of Anglo-Norman townland names has irretrievably eradicated the early medieval terminologies from large tracts of Leinster.

In some regions, low densities of raths have coincided with high densities of ecclesiastical sites. There are high rath densities in the podzolic and gley soils of the north of the barony of Morgallion, Co. Meath, for example, which was primarily suitable for grazing, but a much lower density in the arable brown earths of the south of the barony (Stout 1997, 78-81). These lands had a high density of church sites and it was suggested that 'ecclesiastical sites could have relied more heavily on arable farming, making full use of lay monks on extensive church estates' (*ibid.* 80). McCormick (1997c, 37) noted a similar situation in Co. Down where the low distribution of raths in east Down and Lecale corresponded with a high density of ecclesiastical sites.

The explanation generally put forward for the low density of raths in Leinster, however, is that counties Meath, Dublin, Kildare and Wexford constituted the best arable land in Ireland and that, as the heart of the Anglo-Norman colony, these counties were subject to the most intensive ploughing. The early medieval settlements were therefore likely to have been destroyed by centuries of continuous farming activity in this area (Stout 1997, 62). Large-scale excavation in Co. Meath during the 2000s revealed a number of raths and enclosures otherwise invisible above ground today, which supports this idea of substantial archaeological destruction along the east coast (Deevy 2006; Deevy and Murphy 2009; Fitzgerald 2006a; 2006b; Roycroft 2005).

While univallate raths are seen as defensive farmsteads, and multivallate raths are interpreted as the dwellings of the social elites (see discussion below), the function of raised raths is less clear. The morphology of raised raths meant that they could not easily function as protective sites for livestock (McCormick 1995a, 33), and taken with the statistically significant association with good quality agricultural land, this suggests that the inhabitants may have employed a mixed economy incorporating arable alongside pastoral farming (Kerr 2007, 115; O'Sullivan and Downey 2007b, 35).

It is only recently that archaeological excavations explored the areas immediately outside raths, with some interesting results – particularly the identification of houses (e.g. Brokerstown, Co. Antrim (Kerr *et al*. 2009)), laneways and fields (e.g. Dowdstown, Co. Meath (Cagney and O'Hara 2009)) and other agricultural and industrial features in their environs. Although there have been some regional distributional studies of early medieval settlement in Ireland (e.g. Murphy 1992; Bennett 1989; Clinton 2000a), there have been few attempts as yet to integrate the study of raths with their local, lived landscapes revealed by these excavations. Historical geography studies of raths, particularly those by Stout (1997) and more recently by Kerr (2007), have concentrated on their role within their contemporary social and economic landscapes, and have attempted to trace the early medieval social hierarchy through variations in morphology, siting and distribution.

Settlement Enclosures

A number of excavated early medieval sites do not appear to fit into the accepted morphology of raths or cashels. These sites can be distinguished largely by shape and by size. The circular nature of raths has been emphasised by Stout (1997, 14-15), largely as part of his classificatory system for his computer statistical analyses, and this has tended to dominate subsequent perceptions of early medieval enclosures. As noted by Kinsella (2010), earlier scholars were less dogmatic, for example raths or cashels were described as being generally circular although 'oval or rectilinear' examples are known (Proudfoot 1961, 94), and Edwards (1990, 14) stated that raths could be circular, oval or pear-shaped.

Size has traditionally been taken as a clear distinguishing factor between raths and possible ecclesiastical enclosures, with the latter generally being larger (Edwards 1990). The Phase 3 enclosure at Millockstown, Co. Louth enclosing souterrains and burials – clearly not comfortably located within accepted definitions of a rath – was therefore interpreted as an ecclesiastical site that replaced an earlier rath (Manning 1986a). Similarly the large circular enclosure at Marshes Upper (Site 5), Co. Louth (McCormick and Crone 2000) excavated in 1982 was seen as being too large for a rath (although the only internal feature discovered was a souterrain), and was interpreted as an ecclesiastical site (although there was no evidence for a church). The excavations of the last 10-15 years, however, have totally shaken the accepted understanding of secular and ecclesiastical settlement in Ireland. Raths no longer hold the monopoly on enclosed secular settlements, and the emergence of the 'settlement/cemetery' (Chapter 4) has further blurred the border between ecclesiastical and secular enclosures.

Over 100 settlement enclosures, dated to the early medieval period, have been uncovered during the large-scale roadworks of the late 1990s and 2000s. These are not easily classifiable within the traditional terminologies, and archaeologists have attempted to grapple with their 'odd' morphology in various ways. The term 'plectrum-shaped' was coined to describe the site at Newtown, Co. Limerick (Coyne and Collins 2003, 17-18; Coyne 2005, 2006a); but the enclosure at Killickaweeney, Co. Kildare was described as a flattened 'heart-shape' (Walsh and Harrison 2003, 34-36; Walsh 2008), and the enclosure at Ballynacarriga, Co. Cork was square in shape (Noonan 2001:0115). These enclosures vary from the rath-sized site at Newtown (approximately 50m in diameter), through to the triple enclosure at Ninch, Co. Meath, the largest of which measured 80m x 60m (McConway 2002, 17-19). Some sites were enclosed by a single ditch (e.g. Killickaweeney, Co. Kildare), while others had multiple enclosure ditches (e.g. Rosepark, Co. Dublin (Carroll 2008, 42-54)), and yet other sites appear to have been further protected by an outer wooden palisade. At Aghadegnan, Co. Longford (Carroll 1991:0091; Carroll 1993:0152) a 'palisaded enclosure' was re-modelled as a rath, but other 'palisaded enclosures' at Ballynagallagh, Lough Gur, Co. Limerick (Cleary 2006), and Lowpark, Co. Mayo (Gillespie 2007) show no similar transformation.

Settlement enclosures do not show a great degree of uniformity in morphology or location. Some, such as the 'plectrum-shape' enclosures at Newtown, Co. Limerick, Lahinch, Co. Clare, and Tralee, Co. Kerry, are found on tops of hills (Coyne and Collins 2003, 18-19); whereas Ballynacarriga, Co. Cork is located on a valley floor (Noonan 2001:0115), and Roestown, Co. Meath is in a low-lying area adjacent to a former marsh (O'Hara 2007, 141). It seems possible that these variations in form may have been the result of specific topographical factors which influenced the shape and layout of the resultant enclosure, rather than any deliberate preference, or functional design, on the part of the original builder (Kinsella 2010).

The artefactual remains generally tend to indicate that the occupants were of a high status, for example imported E ware was found at Roestown, Co. Meath (O'Hara 2007, 2009a), as well as at Rosepark, Co. Dublin (Doyle 2008, 112-5); and a tenth-/eleventh-century Hiberno-Scandinavian ring-pin from Ninch, Co. Meath (McConway 2002, 17-19), may be suggestive of later trade routes or settlement. This is not always the case, and the small numbers of finds from the 'plectrum-shaped' enclosure at Newtown, Co. Limerick (Coyne and Collins 2003, 17-18) suggest that it was a low status habitation. As with raths and cashels, these settlement enclosures show evidence for farming (Chapter 5) and craft-working (Chapter 6), but a number of them, for example Raystown, Co. Meath, also seem to have areas set aside for burials grounds of the working population. These 'settlement/cemeteries' are discussed in greater depth in Chapter 4.

Early Medieval Crannogs

Crannogs have traditionally been defined as artificial islets of stone, timber and soil, usually circular or oval in plan, enclosed within a wooden palisade (O'Sullivan A 1998a, 1998b, 2000, 2001b; O'Sullivan A *et al*. 2007; Fredengren 2001, 2002). A broader definition of 'crannog', however, includes stone cairns without palisades, deliberately enhanced natural islands, as

well as cairns, mounds and rock platforms situated along lakeshore edges – i.e. not necessarily surrounded by water (Fredengren 2002a, 10-12). Thus a range of constructed island sites that have experienced a thousand years of building, occupation, abandonment, erosion and conflation of deposits – resulting in rocky islets that look much the same as each other today – may be placed within the archaeological monument class called a 'crannog'.

Early crannog studies were undertaken by William Wakeman in the north-west (1870-1a; 1870-1b), George Kinahan in the west (1870-71), and more recently by Oliver Davies in south Ulster (1942a). O'Sullivan (1998a) has produced an overview of the material form these sites. Subsequent island-wide and county surveys of archaeological monuments have established that there are, at the very least, 1200 identified sites. Given the lack of dedicated archaeological surveys, this figure should be seen as a conservatively low estimate, and crannogs are also easily obscured by wetland vegetation, reeds, carr woodland or by shallow depths of water. Unsurprisingly, given the fact that they are by definition lake dwellings, they tend to be found in those regions of Ireland where there are lakes. Crannogs are widely distributed across the midlands, northwest, west and north of Ireland and in particular, in the drumlin lakes of counties Cavan, Monaghan, Leitrim and Roscommon and Fermanagh. Crannogs are more dispersed across the west and northeast, although concentrations can be identified, such as in Lough Conn, Lough Cullin and around Castlebar Lough, Co. Mayo. Other regions have smaller numbers widely dispersed, and substantially fewer crannogs have been identified in the south and east.

Crannogs tend to be found on smaller lakes. There are particular concentrations of crannogs on Lough Carra and Lough Conn, Co. Mayo; Lough Gara, Co. Sligo; Drumhallow Lough, Co. Roscommon; Lough Oughter, Co. Cavan; and Lough Eyes and Drumgay Lough, Co. Fermanagh. Crannogs are infrequently found on large midland lakes such as Lough Ree and Lough Derg in the Shannon River system, or the large northern loughs of Lower Lough Erne and Lough Neagh. On some larger lakes, such as Lough Derravaragh, Co. Westmeath and Lough Sheelin, Co. Cavan, however, they are distributed along the shoreline at regular intervals. They are also situated in various different types of modern environment, both deep and shallow lake-waters, lakeshore and peatlands. A smaller number of crannogs have also been found in rivers, estuaries and in coastal wetlands (O'Sullivan A 1998a).

Archaeological surveys indicate that crannogs vary widely in morphology and construction, ranging in size from relatively large sites (18m - 25m in diameter), to smaller mounds (8m - 10m in diameter). Crannogs of various sizes and types can be located in close proximity perhaps indicating sequences of development or contemporaneity of usage (O'Sullivan *et al*. 2007, 68-74). There appears to be some degree of regional and local variations in construction (e.g. Fredengren 2002a), but most crannogs have been shown to be built in the *packwerk* model, of layers of stone boulders, small to medium-sized cobble stones, branches and timber, lake-marl and other organic debris. Crannogs have produced evidence, from both archaeological survey and excavation, for a wide range of other structures, such as cairns, houses (e.g. Moynagh Lough, Co. Meath (Bradley 1991; O'Sullivan A 1998a, 107); Ballinderry I, Co. Westmeath (Hencken 1936)), working spaces, middens, wooden revetments, palisades, and stone walls, defined entrances, jetties (e.g. Ballinderry I, Co. Westmeath (Hencken 1936, 107-8)), pathways and stone causeways.

The chronology of crannogs has largely been understood through the use of archaeological excavations, artefactual studies, and latterly radiocarbon and dendrochronological dating. In the nineteenth and twentieth centuries, settlement on crannogs in Ireland was seen as a long-lived phenomenon (dating back to prehistory) but with a particularly intensive phase of activity in the early medieval period. In the 1980s, emerging dendrochronological dates from crannogs in Ulster and Lynn's influential paper on 'early crannogs' (1983c) led to the widespread view that crannogs - in the narrow definition of palisaded islets of stone, earth and timber - were only first constructed in the early medieval period. Lynn interpreted these early medieval crannogs as quite different from Bronze Age lake dwellings, which were seen to be lake-edge marshland enclosures rather than artificial islets. O'Sullivan (1998a, 131-33),

however, noted that the distinction between Bronze Age lake dwellings and early medieval crannogs was not always apparent in the archaeological evidence. Recent work by Christina Fredengren and others has clearly shown that the classic crannog – a small palisaded islet in open-water - was also being built in the Late Bronze Age, the early Iron Age, the early medieval period, and the late medieval period (Fredengren 2002a, 94; 103). Mesolithic and Neolithic wetland occupation mounds built of stone, peat and wood and placed at the edges of midlands lakes – essentially small un-palisaded crannogs – have also been discovered recently at Moynagh Lough, Co. Meath and Lough Kinale, Co. Longford (Bradley 1991; Fredengren 2002b; O'Sullivan A 1998a). Although there remains a substantial hiatus of evidence between the early Iron Age and the early medieval period – i.e. *c*. 300 B.C. - A.D. 400 – recent discoveries on Coolure Demesne crannog, on Lough Derravaragh, Co. Westmeath have revealed a multi-period crannog on which an oak palisade was constructed A.D. 402±9, in the Iron Age/early medieval transition (O'Sullivan *et al*. 2007, 41).

It is clear, however, from a wide range of archaeological, artefactual and dendrochronological evidence that the most intensive phases of crannog building, occupation and abandonment were within the early medieval period, particularly between the sixth and the eleventh centuries A.D. (Baillie 1979, 79). It is also clear that crannogs were built, or certainly re-occupied, in the later Middle Ages, variously being used as Gaelic lordly sites, prisons, ammunition stores and as places to keep silver and gold plate (O'Sullivan A 2001b). Some smaller late medieval crannog islets and platforms may have been peasant seasonal dwellings, or refuges for the poor, or hideouts for outlaws; and documentary sources suggest that some may have been used as late as the eighteenth century (O'Sullivan A 1998a, 167-176).

A total of twenty-nine crannogs were excavated between 1930 and 2007 (Table 3.4). The best-known crannog excavations are those carried out by the Harvard Archaeological Mission to Ireland in the 1930s, with its major archaeological excavations of crannogs at Ballinderry crannog No. 1, Co. Westmeath (Hencken 1936); Balllinderry crannog No. 2, Co. Offaly (Hencken 1942) and Lagore, Co. Meath (Hencken 1950). The range of evidence they produced for houses, palisades, crafts and material culture remains, which were of course spectacularly well-preserved in the waterlogged soils of lake marls and peats, has been summarised (O'Sullivan A 1998a, 2003a, 20-23). In some ways these artefact-rich excavations have proved distracting and the character, occupation and chronology of Irish crannogs has been clarified to a greater extent by more recent investigations. These excavations ranged from the early medieval crannog at Moynagh Lough, Co. Meath (Bradley 1982-83, 1984b, 1985-86, 1990-91, 1991, 1993; 1994-95; 1997, 1999), with its houses, workshops, palisades and metalworking areas, to the possibly relatively low status crannog at Sroove, Co. Sligo (Fredengren *et al*. 2004, 164) and small-scale excavations, such as those at Coolure Demesne, Co. Westmeath (O'Sullivan *et al*. 2007). Not all crannogs were occupation sites and a possible industrial function for crannogs was identified from excavations on the early medieval crannog at Bofeenaun, Co. Mayo (Keane 1995), which revealed evidence for substantial ironworking on this remote island.

There are numerous early medieval (and later) historical references that crannogs were attacked and burned during raids and warfare, and there are hints from the historical sources that some were aggressive island fortresses situated on political boundaries. Combined with the occasional archaeological evidence for weaponry and the impressive scale of their timber and roundwood palisades, they have often been ascribed a military or fortress role. It is also likely that many crannogs may have been used by ecclesiastical communities. Some early medieval crannogs are situated close to monasteries and churches and it is possible that the discoveries in recent decades of early medieval ecclesiastical metalwork – e.g. hand bells, crosses and book shrines – on some midlands crannogs that were occupied in proximity to actual church sites and monasteries, e.g. Lough Kinale, Co. Longford (Kelly 1991, 88); Tully Lough, Co. Roscommon (Kelly 2003, 9) – suggests their use as safe or restricted storage places for relics or perhaps even as island hermitages.

Several crannogs have produced modest material assemblages and may have been essentially farmsteads, located close to grazing lands and arable fields, and used for the seasonal storage of plough implements, quern stones, grain and flour and other agricultural produce. They were certainly places, separated from the shoreline that would have been relatively safe from predatory raids by neighbouring tribes, or even from wolves. Other crannogs, such as Bofeenaun, Co. Mayo (Keane 1995) and Sroove, Co. Mayo (Fredengren 2001), appear to have been utilised as off-shore centres for iron-working, whether for health-and-safety reasons, or because of cultural attitudes towards the blacksmith in early medieval society (Chapter 6).

Early Medieval Promontory Forts

Promontory forts are enclosures which occupy or control headlands, promontories or cliff-edges, either in coastal, riverine or inland locations. There are approximately 250 promontory forts around the coastline of Ireland with the largest concentration in the west and east (Raftery 1994, 48). These sites tend to be ascribed an origins in the Iron Age (Edwards 1990, 41), although the evidence for this has yet to be convincingly demonstrated. The 40-acre coastal promontory fort at Drumsallagh, Co. Dublin, is thought to be Iron Age on the basis of Samian Ware discovered in plough-soil (Raftery 1994, 208) and the rumoured recovery of Roman objects by treasure hunters (O'Sullivan and Breen 2007, 106). *Chevaux de frise* are recognised in Iron Age defensive structures in Iberia (Raftery 1994, 61) and this has led to the suggestion that coastal promontory forts with similar defences in Ireland, i.e. Dun Dubhcathair on Inis Mór, Co. Galway and Doonamo, Co. Mayo may also be of similar date (although excavation at the latter site produced no dating evidence (Casey 1999)). *Chevaux de frise*, however, are not necessarily an indicator of Iron Age date since they are also present at the cashel at Ballykinvarga, Co. Clare, which is likely to be early medieval in date (Comber and Hull 2008). Very few promontory forts have been excavated, but these have largely revealed early medieval activity and settlement evidence, e.g. Dunbeg Fort, Co. Kerry (Barry 1981), Larrybane (Childe 1936; Proudfoot and Wilson 1961-62), Knoxspark, Co. Sligo (an inland promontory fort (Mount 1994; 2002; 2010)), and Dalkey Island, Co. Dublin (Liversage 1968; Doyle 1998).

Excavations on Dalkey Island in Dublin Bay revealed that temporary encampments had been intermittently established on the island in the Neolithic and Bronze Age (Liversage 1968). An early medieval shell midden was uncovered beneath the bank of the promontory fort on the island, from which sherds of Late Roman Amphorae and three bronze pins were recovered in this feature. Two sherds of Samian Ware, further sherds of Late Roman Amphorae, and Gaulish/Frankish E ware pottery were recovered during the excavation, and Dalkey Island appears to have continued as an important trading post (Chapter 7) well into the latter centuries of the early medieval period (Liversage 1968, 179-81). A house, midden and hearth post-dated the promontory fort. Based on finds recovered, it would appear that this house was constructed and abandoned during the early medieval period.

The defences of the inland promontory fort excavated at Knoxspark, Co. Sligo had been argued to be Iron Age (Mount 1994, 23), but more recently the construction date of the bank-and-ditch was adjusted to 'some time before A.D. 668-870' (Mount 2010, 204). The site clearly spans multiple phases, possibly having its origin in a cremation cemetery associated with a stone cairn, and finishing up as an inhumation cemetery, with one burial radiocarbon dated to A.D. 724-961 (2Σ) (*ibid*. 203). In the interim period, however, there is evidence for 'a number of surviving oval hut platforms', as well as 'large quantities of butchered animal remains, iron tools and nails, and vast quantities of iron smelting slag and furnace bottoms' (Mount 1994, 23). The enclosure bank overlies two inhumation burials (*ibid*.), and this may suggest that the enclosure, internal house platforms and evidence of industrial activity all belong to the early medieval period.

Although there was evidence of early medieval activity on Dún Aonghusa, Co. Galway (Cotter 1994; 1995b), the majority of the activity on the site appears to have occurred during the Late Bronze Age (Cotter 1996, 14). A Late Bronze Age date was also returned from a shallow

ditch that partially underlay the early medieval stone rampart at Dunbeg, Co. Kerry (Barry 1981, 307). While datable finds were absent from Dunbeg, a series of radiocarbon dates suggest that the site was occupied from the ninth to the eleventh centuries A.D., a date supported by the presence of a souterrain (see below) on site (Barry 1981, 311). Excavations at Dunbeg and at Larrybane, Co. Antrim (Childe 1936; Proudfoot and Wilson 1962), however, suggested that these promontory forts were constructed in the early medieval period. The excavators at Larrybane suggested that the site was constructed *c*. A.D. 800 (Proudfoot and Wilson 1962, 107), and this date is supported by the presence of souterrain ware in the primary habitation layers (*ibid*. 93).

Promontory forts have traditionally been interpreted as refuges or strongholds. This interpretation may be over-simplistic and is largely based on the modern perception of coastal sites as being 'at the edge'. If these sites are considered within seascapes, however, it seems that some promontory forts were deliberately placed in prominent positions along coastlines. These sites were intended to be seen from the sea and also provided their inhabitants with views across sailing routes. With the development of hostile fleets and sea-borne trading routes, promontory forts established by local kingdoms could have both monitored and controlled the sea traffic.

The impressive promontory fort at Dunseverick, Co. Antrim is known to have been an early medieval royal site of the Dál Riada, an extended tribal grouping with strong maritime connections between northeast Ireland and western Scotland (Edwards 1990, 4). Dunseverick is located on a headland on high cliff tops, and, although there would have been few landing places in the vicinity, the location provides excellent views across the sea towards Rathlin Island, the Inner Hebrides, and the southwest coast of Scotland. The nature of the local tides, currents and winds along the north coast mean that the promontory fort was also located on a significant maritime route way. The promontory fort at Dunbeg, Co. Kerry (Barry 1981) had extensive views across Dingle Bay, and its inhabitants could have watched any coastal traffic moving around the Kerry coast. At the end of the Dingle Peninsula, the early medieval monastic site of Reask produced imported E ware pottery (Fanning 1981, 113), probably brought by Gaulish wine-traders, suggesting that this area had a tradition of foreign trade. Although the later phase at Dunbeg is slightly later than the seventh-century Gaulish trade it is possible that Dunbeg may have dominated the sailing routes between Viking Cork and Limerick in the tenth and eleventh centuries A.D. (O'Sullivan and Breen 2007).

Early Medieval Unenclosed Settlements

A small number of early medieval unenclosed settlements, often consisting of roundhouses without any enclosing element, have been excavated. The role and function of early medieval unenclosed settlements is poorly understood, and they are generally not included in early medieval settlement models which tend to be dominated by analyses of raths (e.g. Stout 1997; Kerr 2007).

The chance discovery of an isolated souterrain is often the only evidence for a possible early medieval unenclosed settlement (Edwards 1990, 46), although it may equally be the only surviving remnant of a destroyed rath. The extent, character and scale of unenclosed settlement during the early medieval period is likely to have varied due to different political, industrial, economic, agricultural and social developments. It is possible that some are seasonal, temporary dwellings and thus their economic evidence and material culture might be expected to be 'poorer'. Some early medieval unenclosed settlements may also represent the dwelling places of the low status peoples who tend to be typically ignored by both archaeologists and historians (Kinsella 2005).

Some unenclosed settlements are set within contemporary fields, but these tend to survive in upland areas, stony areas, or areas of poor soil quality. Two large conjoined enclosures with a series of adjacent fields and a third smaller enclosure to the north were surveyed at Ballyutoag, Co. Antrim (Williams 1984). A group of 23 sub-circular hut platforms were found around the perimeter, and it has been estimated that the site could have housed upwards of

100 people (*ibid*. 47). Similar, though smaller, early medieval upland sites have also been discovered in Co. Antrim at Browndod, Killylane and Tildarg (Williams 1983, 239-45), but have not been excavated.

Stone-built isolated structures of early medieval date survive in various counties in southwest Ireland. At 'The Spectacles' in Co. Limerick (Ó Ríordáin 1949, 59), two early medieval roundhouses – one relatively substantial and built of stone walls with a paved doorway and porch feature – and a rectangular house were located within four small rectangular fields that may have been used as gardens. A series of larger fields and a semi-circular enclosure was located further up the hillside and may have been the location where the livestock was grazed (*ibid*.). Clusters of stone-built houses, some conjoined and associated with souterrains, were discovered within an elaborate pattern of fields at Ballynaveooragh, Co. Kerry (Coyne 2006b); and a field complex, with eight houses spanning two phases, was excavated at Beginish Island, Co. Kerry (O'Kelly 1956, 169). Another complex pattern of settlement and fields was discovered at Carrigoran, Co. Clare (Reilly 1999:0047; 2000:0055; Quinn 2000:0056). The first early medieval phase consisted of a series of pits, posts and stake holes, interpreted as the remains of a hipped-roof building cut into the ground. An oval structure, supported by a central post, was also identified, as well as a structure inferred from the presence of a curvilinear gully. The site appears to have been abandoned, and later re-occupied – a 'Class E' bone comb, dating to the ninth/tenth century A.D., was found in this phase – during which time small fields were defined by stone-walls and ditches.

Excavations at Bray Head, Valentia Island, Co. Kerry (Walsh 1995:0132, 1997:0230; Hayden 1997:0231, 1998:0267, 1999:0324, 2000:0423) uncovered an important unenclosed early medieval settlement dating from the sixth century to the thirteenth century A.D. The earlier centuries are marked by the presence of four roundhouses (one of which had an associated souterrain); while five rectangular houses belong to the later centuries of occupation (see below for chronology of house morphology). The site was associated with fields and an early medieval cereal-drying kiln.

Although there is evidence for agricultural activity (Chapter 5) and industrial activity (Chapter 6) on a number of these unenclosed sites, the evidence for domestic activity is rather more limited. Souterrain ware sherds were found at Ballyvollen, Co. Antrim (Williams 1985b), Drumadonnell, Co. Antrim (McSparron 2001) and Terryhoogan, Co. Antrim (McSparron 2007), and glass beads were recovered from Coarha Beg, Valentia Island, Co. Kerry (Hayden 1994:0119); Platin, Co. Meath (Lynch 2000:0774, 2001:1022); and Barrees Valley, Co. Cork (O'Brien 2003:0174). A glass bead, two bone pins, a lignite bracelet fragment, a bone bead, lithics and metal artefacts, were uncovered from an unenclosed souterrain-complex at Kilcarn, Athlumney, Co. Meath (Sullivan 1997:0424); and souterrain ware pottery has been recovered at a number of sites that consist solely of an isolated souterrain, e.g. Ballyboley, Co. Antrim (Lynn 1977-79:0001), and Magheramenagh, Co. Londonderry (Reilly 1999:0130). The artefactual remains from unenclosed settlements are not abundant, but bare comparison with those from univallate raths and cashels (see above). It is therefore possible that the occupants of certain univallate raths and certain unenclosed settlements may have been of similar social or economic status.

Early Medieval Coastal Middens and Occupation Sites

Early medieval settlement and industrial evidence has also occasionally been found in coastal locations in association with shell middens situated along sand dunes at the edge of the sea shore (O'Sullivan and Breen 2007; Murray 2007). There is currently a lack of understanding about the character and role of what appear to be coastal habitation sites as they were primarily used by people 'outside history' (O'Sullivan and Breen 2007, 116). Excavations in recent years have examined a number of shell middens and have found that many contain early medieval evidence often in the form of surfaces, hearths, middens and occasionally structures (Murray 2007, 128-131).

Shell middens are found on a diverse range of contexts – ecclesiastical sites, raths and cashels, crannogs, inside the Viking towns, and in isolated positions. The majority of excavated middens are undated, but two early medieval sites were examined at Doonloughan, Co. Galway (McCormick and Murray 1997:0197). The first site was dated to A.D. 723-889 (2Σ) and was marked by an eroding horizon of interwoven charred wood and straw, suggestive of a wickerwork structure nearby. Two pits containing a vertical burnt post were also uncovered. Finds consisted of an unidentifiable oxidised iron object and a copper penannular brooch (*ibid*.). The second site was an incomplete circular stone hut, from which a broken blue glass bead, two worked bone pins, a broken blue bead, and a fish bone were recovered. Broken dog whelk shells (*Nucella lapillus*) were also discovered, which were interpreted as suggesting the production of purple dye at the site (*ibid*.). Excavations on the shell midden at Dog's Bay, Roundstone, Co. Galway revealed bones of ox, sheep, pig and grey seal (O'Rourke 1945, 116), but early antiquarian investigations had reported the presence of shells (dog whelk, periwinkle, limpet, oyster and mussel), the remains of a hearth, and the stone foundations of a possible hut at the site. The reported discovery of two ringed pins inside the shell midden, suggest an early medieval date for the site (*ibid*. 117).

Excavations at Rabbit Valley, Ballybunion, Co. Kerry found extensive shell middens (McCarthy 1986:0029) which may have been associated with the nearby early medieval monastery; and early medieval shell middens were also excavated at a house platform adjacent to the coast in Grange West, Co. Sligo (Burenhult 1984). The site returned a date of A.D. 790-900 (2Σ) (Håkansson 1981). The radiocarbon dates given for the piles of shells associated with the tenth-century house structure at Rinnaraw, Co. Donegal suggest that these shell middens were contemporary with the occupation (Comber 2006, 106), however when the marine reservoir effect is applied to the raw radiocarbon age it is clear that these shells were harvested significantly later than the occupation phase (Kerr *et al*. 2009).

Some shell middens, though early medieval in date, show little or no physical evidence for habitation structures. A shell midden at Oughtymore, Co. Londonderry (Mallory and Woodman 1984) revealed a huge quantity of shells, mammal bones, fish and bird bones, as well as souterrain ware sherds, two fragments of a decorated bone comb, a portion of an antler ring, an antler spindle whorl, one fragment of a blue glass bracelet and one fragment of a lignite bracelet. Material from the midden was radiocarbon dated to A.D. 630-880 (2Σ) (*ibid*. 56) and there are a number of other potentially early medieval middens recorded nearby throughout Magilligan Point. The limited nature of the excavation on an exposed section of the midden meant that there was little chance of discovering wider settlement evidence.

Some shell middens with early medieval activity show intermittent use back into prehistory. Although there were a small number of early medieval finds at Minnis North, Co. Antrim (Simpson *et al*. 1993) – two sherds of souterrain ware; one sherd of later everted-rim ware; and a bone pin similar to ones found on Lagore Crannog – the midden appears to date from the Neolithic right through to the early medieval period. The pelvis and legs of a female, which produced a calibrated radiocarbon date of A.D. 681-826 (2Σ), were also found in this midden. Excavations in the townlands of Truska, Manninmore and Manninbeg at False Bay, Co. Galway revealed shell middens which predominantly dated to the Bronze Age although some examples did date to later (potential early medieval) periods (McCormick *et al*. 1996).

Erosion in the sand hills at Ballymacrea Lower, Co. Antrim revealed two patches of compacted sand associated with occupation debris – charcoal, bone, iron slag, and a number of sherds of souterrain ware (Flanagan 1966). A cluster of basalt boulders was tentatively identified as the possible wall-footings for a house structure (*ibid*. 116). The sand hill site at Dooey, Co. Donegal (Ó Ríordáin and Rynne 1961b; Edwards 1990, 46; O'Sullivan and Breen 2007, 119) had multiple phases of early medieval occupations, and produced evidence for industry on a significant scale. There are three main phases of occupation, with a final phase marked by the development of a burial ground. Phase I can be dated to the fifth/sixth century A.D. (Ó Floinn 1999, 74). Skeletons from the burial phase have been dated to A.D. 552-773 (2Σ)

(*ibid*.), implying that Phase II and Phase III must be dated pre-800 (*pace* Ó Ríordáin and Rynne 1961b, 60, who interpreted the burial phase as eleventh century). Occupation appears to coincide with varied industrial activities (Chapter 6). Along with purple-dye extraction, bone- and antler-working, iron objects, cast bronze brooches and pins were found, suggesting that metalworking was also undertaken on this site (Ó Ríordáin and Rynne 1961b, 61).

There can be a temptation to interpret these sites as the homes of the poor and landless (Kinsella 2005; O'Sullivan and Breen 2007, 118). Early medieval coastal sites appear to be predominantly domestic in nature and are predominantly found in areas with low rath density. It is possible that rising population during the sixth/seventh century encouraged some communities to live in lands situated along the coast. Some sites, such as Doonloughan and Dooey, may have played a specific industrial role that meant that they had to be located on the coast, and the number of dog whelk shells discovered supports the idea that they were associated with the production of purple dye (Murray 2007, 130-31; O'Sullivan and Breen 2007, 119). Proximity to trade routes may also have influenced coastal locations, for example Dooey is integrated into the North Atlantic seaways. Far from being marginal to long distance trade and communications, such sites could be interpreted as the habitations of high-status smiths (O'Sullivan and Breen 2007, 119), or high-value traders.

Early Medieval Occupation in Caves

Excavations at a cave at Park North, Middleton, Co. Cork uncovered a 'well-marked Early Christian habitation site under surface earth and stones' (Coleman 1942, 73). The finds were largely typical of a domestic assemblage, for example a bone needle, two bone pins, a decorated bone comb handle, a spindle whorl, two whetstones, a hammer stone, and a small tanged knife (*ibid*. 74-75). There were also some less common finds, for example three right-angled fragments of silvered-bronze and some corroded bronze fragments (*ibid*.), and a decorated bronze bar, possibly belonging to part of a mounting for an early medieval shrine, which was used to infer an eighth-/ninth-century date for the site (Coleman 1942, 76). A survey of the artefactual evidence from caves revealed early medieval finds from a number of other sites including Kilgreany, Co. Waterford; Edenvale, Co. Clare; Keshcorran, Co. Sligo; Cushendall, Co. Sligo and potentially Carrigagour, Co. Cork (Coleman (1947). Subsequent excavations at a cave site in Carrigmurrish, Co. Waterford, which was located beneath a limestone knoll that was crowned by what was termed a 'Bronze Age fort' (a possible rath/cashel), uncovered combs, spindle whorls, whetstones, jet and iron fragments, all of which may possibly be ascribed to the early medieval period (*ibid*. 70).

The material remains from the excavations at Kilgreany Cave, Co. Waterford, undertaken between 1928 and 1934 (Stelfox 1930-31; Movius 1935) have been recently re-examined (Dowd 2002; Dowd and Corlett 2002). A sequence of activity from the Neolithic to post-medieval period was revealed, with the early medieval period represented by hearths, whetstones, spindle whorls, a tanged iron knife, bone points, worked bone, a rotary quern, and a bone needle (Dowd and Corlett 2002, 8). The cave is located 10km from the coast, yet a large collection of periwinkle, cockle, mussel, oyster and scallop shells were found inside it. These shellfish appear to have been collected from the seashore and consumed inside the cave. The presence of three hearths indicates that people were occupying the cave in the early medieval period – whether permanently, occasionally, or seasonally – and the artefactual evidence suggests that a range of activities were undertaken at the site including textile manufacture and food preparation. A number of personal items were found, including a bronze baluster-headed ringed pin, a bone pin with a decorated bead, a ringed pin, a lignite bracelet and an eleventh-/twelfth-century gaming piece. The double-edged bone comb found at Kilgreany Cave is similar to bone combs found in caves at Carrigmurrish and Ballynameelagh, Co. Waterford (Dowd 2002, 87), which have been dated from the fifth to the tenth centuries A.D. As at Park North Cave, Co. Cork, a fragment of a possible eighth-century bell-shrine was also recovered (*ibid*.).

The artefact evidence from Kilgreany Cave is not indicative of low status peoples (Dowd 2002, 90), but it is possible that the finds (and possibly those from Park North Cave) represent caches of looted (or curated) materials, rather than occupation debris. There is, for example, clear evidence for the deposition of early medieval 'hoards' in caves at Dunmore, Co. Kilkenny. Nine silver Viking coins, *c*. A.D. 928, were found during excavations in 1973 (Drew and Huddart 1980, 17-18); and a possible late-tenth-century hoard, including fourteen Anglo-Saxon silver pennies, a silver penannular arm-ring, hack silver, strap tags and sixteen conical-shaped objects woven from silver wire, was discovered in 1999 (Wallace and Ó Floinn 2002, 223). Excavations undertaken in 2004 uncovered evidence for a shale/lignite bracelet fragment, two bronze ringed pins, a blue glass bead and human skeletal remains (Dowd 2004:0914). It is argued that the Dunmore Caves may be equated with *Derc Ferna*, the site of a slaughter of the locals by the Dublin Vikings (AFM 928) (*ibid*.).

Early Medieval Trackways

Although not strictly a 'settlement' type, roads and trackways were an important aspect of early medieval settlement, facilitating the movement of peoples and goods through the landscape. Little work has been done on ancient roads, with the exception of Ó Lochlainn (1940), which largely superimposed the documented medieval routeways onto an early-twentieth century road-map. An Old Irish law tract suggests that there are five different grades of road (Kelly 1997, 538) ranging from the *slige*, or highway, which is wide enough that two chariots can meet, to the *bóthar*, or cow-track, which is the width of two cows 'one sideways, the other lengthways' (*ibid*.). Archaeological excavation of early medieval metalled roads has been largely confined to internal features, linking various buildings and structures on Hiberno-Scandinavian urban sites and ecclesiastical sites (Chapter 3). A possible external early medieval metalled roadway, however, has been excavated at Chancery Lane, Dublin (Walsh 2009, 15-16). This roadway was 2.35m wide and was dated to the ninth century by a pig bone incorporated into the silt that overlay the metalled surface (*ibid*. 15). The roadside gulleys cut through a burial dated to A.D. 684-885 (2Σ) (*ibid*.) and a construction date in the late-eighth century has been suggested (*ibid*.). Radiocarbon dates from a further three burials from the immediate vicinity of the roadway suggest that they were contemporary with the road (*ibid*. 19). Although it is suggested the Chancery Lane roadway may have lined two identified monuments (*ibid*. 16), the presence of nearby inhumations may indicate the existence of burial ground/ecclesiastical site with an associated roadway.

More work, however, has been undertaken on wooden trackways, especially those passing through boglands. As a result of preferential preservation conditions, many of these survive and may be dated either by radiocarbon, or preferably by dendrochronology. The first systematic study of the archaeological potential of bogland was undertaken at the Mount Dillon Bogs in Co. Longford from 1985 to 1991 (Raftery 1996). Excavations were undertaken initially at the large Iron Age trackway known as Corlea 1 but it soon became apparent that a large collection of other brushwood and wooden *toghers* were present in the exposed sections of nearby drains. The discoveries of this complex of trackways lead to the establishment of the Irish Archaeological Wetland Unit (IAWU) in 1990, and since then the IAWU have conducted a survey of the raised bogs owned by Bord Na Móna and produced a number of publications. There are over twenty known wooden track ways that can be dated, by radiocarbon or dendrochronology, to the Early Medieval period (Table 3.5). Several were found within Hiberno-Scandinavian towns. One wooden trackway platform was excavated at the ecclesiastical site of Dromiskin, Co. Louth (Murphy and Conway 1999:590) while other wooden track ways were found close to Lemanaghan monastery, Co. Offaly (McDermott 1998:0553; O'Carroll 1999:0742, 1999:0743), and a potential pilgrim's road towards Clonmacnoise was excavated in Bloomhill Bog, Co. Offaly (Breen 1988, 321-39). It would appear that the most substantial wooden trackways are associated with ecclesiastical sites. The remainder of the excavated wooden track-ways were from rural locations, predominantly in counties Offaly and Tipperary.

Interior Structures

Early Medieval Houses

Early medieval raths/cashels were essentially domestic sites, which enclosed houses, workshops, animal pens, cobbled areas and pathways, open-air metalworking surfaces, middens and rubbish dumps. Various early medieval legal and literary sources mention features that might be located within the *les*; including the *airdrochat* (the paved area at the entrance to the *les*); the *tech* ('house'), *airchae* (outhouse); *tech ndam* (ox-house); *otrach* (dunghill); *lías caírech* (sheep-pen); *lías lóeg* (calf-pen); *muccfoil* (pig-sty); *áith* ('drying-kiln') and *corróc* (pit or possibly souterrain) (Kelly 1997, 364-67). Although there has not been a great deal of definitive evidence for these ancillary structures associated with a farmstead (Chapter 5), a large number of domestic structures have been identified in the interior of raths, cashels, crannogs, and settlement enclosures.

It was suggested in 1978 that over 160 Early Medieval rural houses and structures had been recorded in excavations (Lynn 1978a, 29). Many of these sites were identified by annular gullies, circles of close-set stake-holes, or a scatter of posts and stake-holes with perhaps an associated hearth and occupation area. By 1994, this figure had increased to approximately 250 (Lynn 1994, 81); and, with the boom in archaeology of the late-1990s and 2000s, this figure has more than doubled to *approximately* 550. Many early medieval sites, however, have produced little or no evidence for buildings, which is unsurprising given the flimsy nature of early houses. For instance, although scatters of post-holes and stake-holes were found at Garranes, Co. Cork (Ó Ríordáin 1942a, 86-87), and Ballycatteen, Co Cork (Ó Ríordáin and Hartnett 1943, 12), they did not produce a coherent house plan. The poor quality of early archaeological excavations of early medieval crannogs (e.g. Craigywarren, Lagore, Ballinderry crannogs Nos 1 and 2) has tended to obscure the numbers of houses known from such sites, but excavations at Moynagh Lough, Co. Meath (Bradley 1991) and Sroove, Co. Sligo (Fredengren 2002b) have shown that houses were also located on crannogs.

Roundhouses

The earliest medieval houses (i.e. those dated between *c.* A.D. 500-800) were usually roundhouses (or conjoined 'figure-of-eight' roundhouses), constructed of stone or post-and-wattle walls, with wooden poles for joists and roofs of thatch of reed, turf or straw (Lynn 1978a, 1994). These structures reflect a long Irish tradition stretching back into late prehistory, and tended to be located towards the centre of enclosures. Most were fairly small (typically 4-5m in diameter) although some were significantly larger (6-10m in diameter). Early Irish laws, e.g. *Críth Gablach* ('Law of Status'), supported by archaeological evidence, suggest that the size of a house was closely related to social rank (Richey 1879), so that both custom and law restricted an individual from building larger than a certain size. Even the largest houses in early medieval Ireland, however, were relatively small by contemporary European standards. Despite the fantastic claims of early Irish narrative literature for feasts in massive houses or otherworldy structures with multiple doors, there is no archaeological evidence in Ireland for massive longhouses as found in Anglo-Saxon England (e.g. Yeavering) or Viking Age Scandinavia (e.g. Borg in Lofoten). Neither is there evidence for use of concentric rings of internal roof supports to enable significantly larger houses (as is common on Iron Age British sites). In early medieval Ireland, people often chose instead to build a second circular structure and attach it to the larger house, to create a figure-of-eight shape, whose size is also controlled by the *Críth Gablach* (Richey 1879, 310-11). This backhouse or *cúile* may have been used as a kitchen, sleeping area or private or exclusive space.

The early medieval raised rath at Deer Park Farms, Co. Antrim has produced the best evidence for early medieval houses in Ireland (Fig. 3.5). In the primary univallate phase, *c.* A.D. 700, there were two figure-of-eight houses and a single roundhouse (Lynn 1988f, 45-46). The centrally located figure-of-eight house was constructed of two closely concentrically placed wattle walls of hazel rods which survived to a height of 0.6m (due to their collapse in antiquity). The tight space between these two wicker walls had been packed with soft organic materials – straw, moss, and heather – and as such it would have functioned as an early form

of 'cavity walling' (Lynn 1988f, 45). These figure-of-eight buildings correspond to the structures described in the *Críth Gablach*, which states, for example, that the *bóaire* grade is to have a house of 27 *traig* (approximately 8m), with a back-house of 15 *traig* (approximately 4.5m) (Richey 1879, 310-11). Figure-of-eight buildings have been uncovered on a number of other sites, including the raths of Corrstown, Co. Londonderry (Conway 2002:0386, 2002:0387) and Lisleagh II, Co. Cork (Monk 1995, 111).

A similar pattern of house-building appears to have been followed on non-rath sites, for example the earliest phase at the settlement enclosure at Ninch, Co. Meath, revealed circular wattle-and-daub houses between 4.6m and 10m in diameter (McConway 2002, 17-19); and a round post-and-wattle building were found at the cashel of Kildreenagh, Co. Kerry (O'Flaherty 1985:0034). Figure-of-eight buildings have been found on a number of ecclesiastical enclosures including Illaunloughan, Co. Kerry (Marshall and Walsh 1994, 2005; Marshall 2003) and Caherlehillan, Co. Kerry (Sheehan 2009); and wattle-built figure-of-eight structures have been found on the 'plectrum-shaped' enclosure of Newtown, Co. Limerick (Coyne 2006, 68). Although a possible isolated figure-of-eight house was found at Terryhoogan, Co. Antrim (McSparron 2007), roundhouses tend to make up the majority of houses on unenclosed sites.

The majority of structures in cashels were stone-built, and stone roundhouses have been excavated at Ballyegan, Co. Kerry (Byrne 1991), Lissachiggel Cashel, Co. Louth (Davies 1940, 220-28) and Lecanabuaile, Co. Kerry (Ó Ríordáin and Foy 1941, 88-89). It is also possible that figure-of-eight houses were also stone-built, and a number of 'conjoined' structures were excavated at Lissachiggel Cashel, Co. Louth (Davies 1940, 220-28), although these may be late medieval in date.

Rectangular Houses

A significant change in house construction occurred *c.* A.D. 800 (Lynn 1994, 92). By the tenth and eleventh centuries, roundhouses are rare, and rectangular houses built in stone, or turf, are the norm (Lynn 1978a, 85). These rectangular houses were simply constructed, with low stone walls, lines of boulders, and internal wooden poles to support roof of reed, turf or straw. The reasons for this transition in architectural styles remain unclear and influences from the Irish church, later Anglo-Saxon England and the Viking world are all possible. It is also possible that this architectural shift relates to significant changes in early Irish society. At the time of this architectural transition (i.e. the eighth and ninth century A.D.), social changes included an increasing centralisation of power, an increased focus on smaller familial groups, and more restrictive or individualistic land ownership practices. The ownership and use of a rectangular house, which could more easily be divided up into compartments and sections may have went hand-in-hand with changing ideas about personal status, wealth and emerging concepts of private and public space. Perhaps a more individualised social identity might have been more easily expressed through rectilinear architecture.

Early medieval rectangular structures (Lynn 1994, 83) tend to be more archaeologically visible as they generally have 'dry stone and/or turf lower walling' (*ibid*. 85). The progression from roundhouse to rectilinear house is seen at the cashel of Lecanabuaile, Co. Kerry (Ó Ríordáin and Foy 1941, 88-89), the ecclesiastical site of Nendrum, Co. Down (Lawlor 1925), the rath of Rathmullan, Co. Down (Lynn 1978a, 32, 1981-82), and the settlement enclosure of Ballynacarriga, Co. Cork (Noonan 2001:115). Rectangular houses have been excavated on a range of sites including raths (e.g. Garryduff, Co. Cork (O'Kelly 1963, 22)); settlement enclosures (e.g. Killickaweeney, Co. Kildare (Walsh 2008)); and cashels (e.g. (Drumaroad, Co. Down (Waterman 1956a, 76-83)).

Others

There are a few structures that do not seem to fit neatly into this scheme. A building constructed using a possible sill beam was excavated at a settlement enclosure at Balriggan, Co. Louth (Delaney and Roycroft 2003, 18; Delaney 2010); and another potential example had been excavated in the late-1960s at a rath in Shane's Castle Park, Co. Antrim, where two

longitudinal trench slots which may have been used to hold the sill of a wooden structure, were identified by the excavator as being contemporary with the primary occupation of the rath (Warhurst 1971, 61). A possible Viking, or Viking-influenced, rectangular stone house was excavated at the cashel of Rinnaraw, Co. Donegal (Comber 2006, 107). A rectangular building on a 'palisaded enclosure' at Lowpark, Co. Mayo (Gillespie 2007), shared some similarities with the late-Viking period sunken houses of Waterford (Walsh 1997b, 48-52). The enclosure appears to date to the eighth or ninth century (Gillespie & Kerrigan 2010, 236-49); oak charcoal from one of the slot trenches of the rectangular structure produced a radiocarbon date of A.D. 647-761 (Gillespie and Kerrigan 2010, 268). It is likely that the 'old-wood' effect would apply to this structural timber, which may give the building a ninth century date, possibly contemporary with the palisaded enclosure, and possibly falling into the early years of Viking settlement in Ireland.

The structures found on unenclosed settlements also do not conform to a uniform pattern, and equally there is no uniformity in the size of houses, with footprints ranging from 12.5m^2 at Murgasty, Co. Tipperary (Cummins 1998:0626), to 140m^2 at Ballycullen (Larsson 2002:0640). A rectangular sod-built structure was excavated under Kilkenny Castle (Murtagh 1993); the structure at Ballyvollen, Co. Antrim was of an 'irregular' shape (Williams 1985b); and a D-shaped stone-built structure was found in the Barrees Valley, Co. Cork (O'Brien 2003:0174).

Souterrains

Souterrains are artificial underground or semi-subterranean passages and chambers built of stone and/or wood. The most comprehensive overview of the subject suggests that there are approximately 3,500 souterrain in Ireland (Clinton 2001, 33), with increasing numbers found on excavations in the years since its publication. Dry-stone built souterrains constitute the most commonly found type (over 95% of the total), and are found in clustered areas across Ireland (*ibid*. 36). The remaining five percent consists of earth-cut souterrains (which have nearly all been discovered in Co. Cork); rock-cut souterrains (which have mainly been found both in south Co. Cork, north Co. Antrim and north Co. Donegal) (*ibid*. 2-5); and wooden-lined souterrains (*ibid*. 10-12).

The distribution of souterrains is very uneven, with concentrations in northeast Ulster, north Leinster, east Connaught and south Munster (Clinton 2001, 34). This regionalisation means that large areas are devoid of souterrains. Buckley (1986, 110), using Ulster as a case study, argued that these concentration of souterrains represented heartlands of political groups; Warner (1986, 112), however rejected this interpretation. Clinton (2001, 39) also rejected Buckley's claim, and stated that 'souterrain concentrations cannot be accepted as indicators of political areas'. His detailed consideration of the distribution of souterrains, however, did not produce a satisfactory explanation for their presence or absence in specific areas. There are also variations within the regional pattern, for example souterrains in the east of Ireland tend to be located in unenclosed settlements, while the majority in the west are located within raths or cashels (*ibid*. 45). Clinton considers the distribution of souterrains 'would not appear to have been simply determined by either topographical or technological considerations alone' (*ibid*. 44), and no convincing explanation for this distribution has as yet emerged.

Clinton (2001, 89-95) reviewed the evidence and generally agreed with the assertion that 'the overwhelming weight of Irish archaeological and historical evidence would place the datable souterrains within the ninth to twelfth century bracket' (Warner 1986, 111). There are a small number of exceptions to this general statement. Charcoal from the construction trench of a souterrain in a rath at Liscahane, Co. Cork was radiocarbon dated to A.D. 428-660 (2Σ) (Ó Donnabháin 1983, 217, however this site has not been published, and it is possible that material in the trench may have comprised backfill containing residual material from earlier occupation. Oak charcoal from structural posts within souterrain 1 at Lowpark, Co. Mayo produced a radiocarbon date of A.D. 540-650 (Gillespie and Kerrigan 2010, 249). This structure, however, does not fit the typical souterrain pattern. It consists of a stone-built

subterranean chamber, approximately 7.5m long and 3m wide, which was access through a possible ramped entrance, and there is no indication of souterrain passageways. Charcoal from an oak post at the more typical souterrain 2 at Lowpark, Co. Mayo, however, also produced an early date for A.D. 550-660 (*ibid*. 260). The radiocarbon dates from Lowpark came from structural oak timbers, and thus refer to the age of the oak, rather than the felling date and subsequent incorporation into the souterrain. This 'old-wood effect' can mean that there may be a discrepancy of decades, or even centuries, between the radiocarbon dates and actual construction dates. Souterrain B at Marshes Upper 3 appears to pre-date the construction of the rath ditch (Gowen 1992a, 71). E ware recovered from the ditch fill suggests a probable construction date in the seventh century, therefore implying an earlier date for the souterrain construction; E ware, however, was also found in the backfill packing around the souterrain (*ibid*. 103), suggesting that the imported pottery was on site prior to construction of the souterrain. It would appear that the exact stratigraphical relationship between souterrain and rath ditch was not fully identified during excavation and it is possible that the souterrain actually cuts through an earlier ditch. The least equivocal evidence for an early souterrain comes from Raystown, Co. Meath. The passageways of this 'unusual earth-cut souterrain' (*ibid*.) appear to have been roofed, and the dated material comes from a circular chamber with an associated ring of post-holes, cereal grains from one of which produced a date of A.D. 530-650 (Seaver 2010, 266).

Clinton (2001, 58) argues that souterrains in the south-west of Ireland are earlier than those found elsewhere on the basis of structural association. In south-west Ireland souterrains are found in association with roundhouses (e.g. Bray Head, Valencia, Co Kerry (Hayden 1998:0267; Hayden 1999:0324) or figure-of-eight buildings (e.g. Cathair Fionnúrach, Co. Kerry (Gibbons 1997:0228); whereas, with the possible exception of Downpatrick, Co. Down (Brannon 1988c, 6), they are almost exclusively found in association with rectangular houses in the more northern counties (Clinton 2001, 53-58). As shown above, roundhouses and figure-of-eight houses tend to be replaced by rectangular structures by the tenth/eleventh century.

Many souterrains located within raths may have been secondary additions (Clinton 2001, 203). The souterrain at Kiltale, Co. Meath clearly post-dated the rath construction (Rynne 1974, 267), and at the rath of Faughart Lower, Co. Louth one souterrain was built through an in-filled ditch while another was built across the in-filled ditches (Buckley and McConway 2010, 51). At Treanbaun, Co. Galway a drystone walled souterrain was built into the in-filled ditch of a large enclosure. The original ditch was radiocarbon dated to A.D. 600-690 (no sigma) (Lehane *et al*. 2010, 145-46), making the souterrain later than this. Many of the souterrains at the later unenclosed phase at Knowth, Co. Meath, were built across the in-filled ditches of the earlier enclosure (Eogan 2007, 3-4); and similarly at Rosepark, Co. Dublin, four of the seven souterrains were cut into the ditch-fill of the earlier enclosures (Carroll 2008, 72). At Ballycatteen, Co. Cork, it was argued that the absence of sixth-century imported pottery in the vicinity of the souterrains implied that they had to be ascribed to a later phase of occupation (Ó Ríordáin and Hartnett 1943, 41); and excavations at Letterkeen, Co. Mayo (Ó Ríordáin and McDermott 1952, 100), Millockstown, Co. Louth (Manning 1986, 165); Ninch, Co. Meath (McConway 2000:0760, 2001:1007, 2002:1489); and Raystown, Co. Meath (Seaver 2006, 80; 2010), all suggest that the souterrains post-dated the initial settlement phase.

Where univallate raths developed into raised raths, such as Rathmullen, Co. Down (Lynn 1981-82) and Deer Park Farms, Co. Antrim (Lynn 1988f), souterrains are absent from the univallate phase, but present in the later horizons. Indeed it is possible that a number of these sites may have been raised in order to accommodate a souterrain, for example at the bivallate rath of Killyliss, Co. Tyrone, a small earthen platform was built within the enclosure to house a clay-lined trench with associated structural timbers and post-holes (Ivens 1984a). This feature has been interpreted as an above-ground souterrain (*ibid*. 32).

Souterrains have also been excavated on early medieval burial grounds, for example Boolies Little, Co. Meath where a souterrain was constructed after the cemetery fell out of use (Sweetman 1983a, 44); dry-stone-walled souterrains have also been found on ecclesiastical sites (Table 3.7) including Templebryan North, Co. Cork (Killanin and Duignan 1967, 167); Meelick, Co. Mayo (*ibid*. 433); and Kiltiernan East, Co. Galway (Westropp 1919, 178); and a possible timber souterrain was identified at Cathedral Hill, Downpatrick, Co. Down (Brannon 1986b, 1987, 1988b, 1988c).

Over 40% of the sites on which souterrains were excavated, however, revealed no evidence for associated early medieval enclosures. This does not preclude the possibility that archaeological evidence for such structures did not exist in the vicinity of the souterrain(s), as it is clear that the monument itself was the sole archaeological focus of many excavations. It is also unclear whether these souterrains represent subsequent unenclosed settlements built on the site of abandoned raths, or whether they were constructed in association with raths which have subsequently been destroyed.

Significant amounts of coarse-ware pottery (souterrain ware) and charcoal deposits were found in a number of souterrains, which led to the early belief that these were subterranean, troglodytic dwellings (Clinton 2001, 16). This interpretation is no longer considered plausible since the pottery appears to have been dumped rubbish and the charcoal seems to have been the result of later use of the souterrain.

Souterrain B on Site 3 at Marshes Upper, Co. Louth (Gowen 1992a), has been interpreted as a 'farrowing pen', because of the high number of neo-natal pig bones found in it (McCormick 1992c, 118). Sows that are ready to give birth require an isolated place which is dry and has very little air circulation (*ibid.*), and although a souterrain would have fitted this criterion, it would have been difficult to drive animals down into the darkness, and many souterrains did not have feasible access for livestock, in contrast to the Iron Age examples found in Fife and Angus in Scotland (Wainwright 1963).

The commonest explanations, however, are that souterrains were used either for storage or for refuge (Mallory and McNeill 1995, 196). For souterrains to have had an everyday function, such as a regularly used store, there must have been relative ease of access as evident at Graigue, Co. Galway (ramped entrance) and Fortwilliam, Co. Longford (stepped entrance) (Clinton 2001, 60). Fragments of oak and willow found at Balrenny, Co. Meath have been interpreted as barrel hoops, and have been taken to imply that storage took place within the souterrain (Eogan and Bradley 1977, 102); and similar wooden vessels were found at Ballyaghagan, Co. Antrim (Evans 1950, 13). Since a low constant temperature could be maintained underground, it is possible that souterrains acted as a larder for perishables – milk or butter – which would quickly spoil above ground in the heat. It has, however, been suggested that these barrels were not for everyday usage, but rather that they contained emergency food supplies which were brought into the souterrain in times of trouble (Warner 1982, 92; Clinton 2001, 63).

Although souterrains may have functioned as day-to-day stores, it seems more probable that they were utilized for hiding valuables – whether material or human – during times of trouble. This interpretation is supported both by the archaeological remains and by the contemporary writings. There are limited high-grade goods recovered from souterrains, but they include a *c.* ninth-century glass beaker from Mullaghroe, Co. Sligo (Harden 1956, 154) and a silver penannular broch from Cahercommaun, Co. Clare (Hencken 1938, 23). It also appears that souterrains were used to hide ecclesiastical goods, such as the bronze-coated iron bell found under the flagstone floor of the souterrain in Oldcourt, Co. Cork (Murphy and Ó Cuileanáin 1961, 88), and the bell-shrine recovered from the infill of the souterrain at Drumadoon, Co. Antrim (Bourke 2009, 145-63). An iron coulter and ploughshare found in the souterrain at Faughart Lower, Co. Louth (Buckley and McConway 2010, 52), may have been hidden there (presumably sometime after the start of the second millennium), however the nature and

location of the deposit suggests that it may have been intended to mark a formal closing of the souterrain.

This tradition of hiding valuables in souterrains must have been known to the Vikings, since there is a description of a raid on Co. Meath which tells how 'the caves [i.e. souterrains] of Achad Aldai, and of Cnodba [Knowth], and of Boadán's Mound above Dubad [Dowth], and of Óengoba's wife, were searched by the foreigners' (AU 863). The creeps (constricted areas), hidden chambers and 'sally-ports', which are found in souterrains, have been interpreted as defensive features to protect the inhabitants who fled there to avoid the enemy (Edwards 1990, 30) – generally perceived to have been the Vikings (Clinton 2001, 201) – and the presence of a 'murder-hole' at Newrath Big 2, Co. Meath (*ibid*. 159), may suggest that souterrains could be used offensively by luring in and ambushing the enemy, as well as defensively.

It has been argued that souterrains could only have functioned as short-term places of refuge because they could be broken into from above, and anyone hiding in them could be forced out, or suffocated by blocking the ventilation shafts or by being smoked out (Edwards 1990, 30). Souterrains only became vulnerable to the defender, however, when the exits were barred and when determined attackers ventured into the dark. In this case they became traps for the fugitives, for example the king of the Fir Lí and his wife and brother are recorded as having been 'smothered in a cave [i.e. a souterrain] by the Uí Thuirtri' (LC 1135).

Origins, Chronology and Cultural Biographies

Origins and Chronology

The increased scale of excavation from the mid-1990s onwards, and the concomitant increase in the numbers of radiocarbon dates produced over this period, has had a profound effect on the chronological framework of the early medieval period in Ireland. Whereas once this period could have been viewed as a monolithic whole, it is now increasingly clear that there were differing phases of site-construction through the early medieval period, which may potentially be further complicated by regional variants, and economic or political factors. These variables have serious ramifications on the numerous settlement models which have been created for early medieval Ireland.

The Bronze Age dates, based on artefacts and site typologies, which were given to the raths at Cush, Co. Limerick (Ó Ríordáin 1940, 176-77) and Carrigillihy, Co. Cork (O'Kelly 1951, 84) have been used to argue for of the antiquity of the site-type. Both Ó Ríordáin and O'Kelly, however, accepted that these sites were non-standard, and that the majority of raths probably belonged to the early medieval period. Several raths, including Raheenamadra, Co. Limerick (Stenberger 1966), Feerwore, Co. Galway (Raftery 1944a), Carraig Aille, Co. Limerick (Ó Ríordáin 1949a) and Cahercommaun, Co. Clare (Hencken 1938), have been argued to be of Iron Age construction (Caulfield 1981, 207-11), and, based on the lack of contemporary settlement evidence, an Iron Age origin for raths has also been argued (Limbert 1996). There have also been a series of attempts to suggest a high medieval occupation phase for raths (e.g. Rynne 1964; O'Conor 1998, 73-94), and most recently this has been argued for the cashels, *cathairs* and raths of the Burren in Co. Clare (FitzPatrick 2009, 277-283). Where dated, however, cashels appear to be later than raths (see below), and it is difficult to extrapolate a general chronological trend for earthen raths from a regional survey dominated by stone-built cashels and *cathair* sites.

Lynn (1975a, 29; 1975c, 45; 1983c, 48-50) provided a strong refutation of the early-origin theories, and an allied defence of early medieval dates for raths and cashels. This 'orthodox view' has been largely vindicated by radiocarbon dates, and increases in the precision of this process have meant a narrowing of the construction/primary occupation phases of raths from 600-1000 A.D. (Lynn 1981-2, 150) to 600-900 A.D. (Stout 1997, 24). There are, however, some fundamental problems associated with Stout's data. In the first instance his calibrated

dates are calculated at one standard deviation (1Σ) (*ibid*. 29, Fig. 2). This implies a probability date accuracy of 68.8% rather than a 95.4% probability when quoted at the more acceptable two standard deviations (2Σ); moreover, as the raw radiocarbon data is not produced, the figures cannot be re-calibrated. Secondly, no account is taken for the archaeological or stratigraphical context of the dates and so they do not always reflect the construction date of the raths. It is likely, however, that the bulk of the dates reflect the period of occupation of the raths. More recently, Kerr (2007, 86-100) re-appraised the radiocarbon dates more precisely from rath excavations. He concluded that the dating of occupation for the typical univallate and multivallate sites can be refined to *c*. A.D. 600-850 (*ibid*. 98-99), and that the raised rath, with a mid-eighth to mid-tenth century construction/primary occupation date (*ibid*. 99) (Fig. 3.2), has a different chronology to that shared by univallate or multivallate sites. This work, however, is dominated by sites from Ulster (a reflection of published radiocarbon dates at that time), and it is possible that regional variations should also be factored into a general chronological overview of raths.

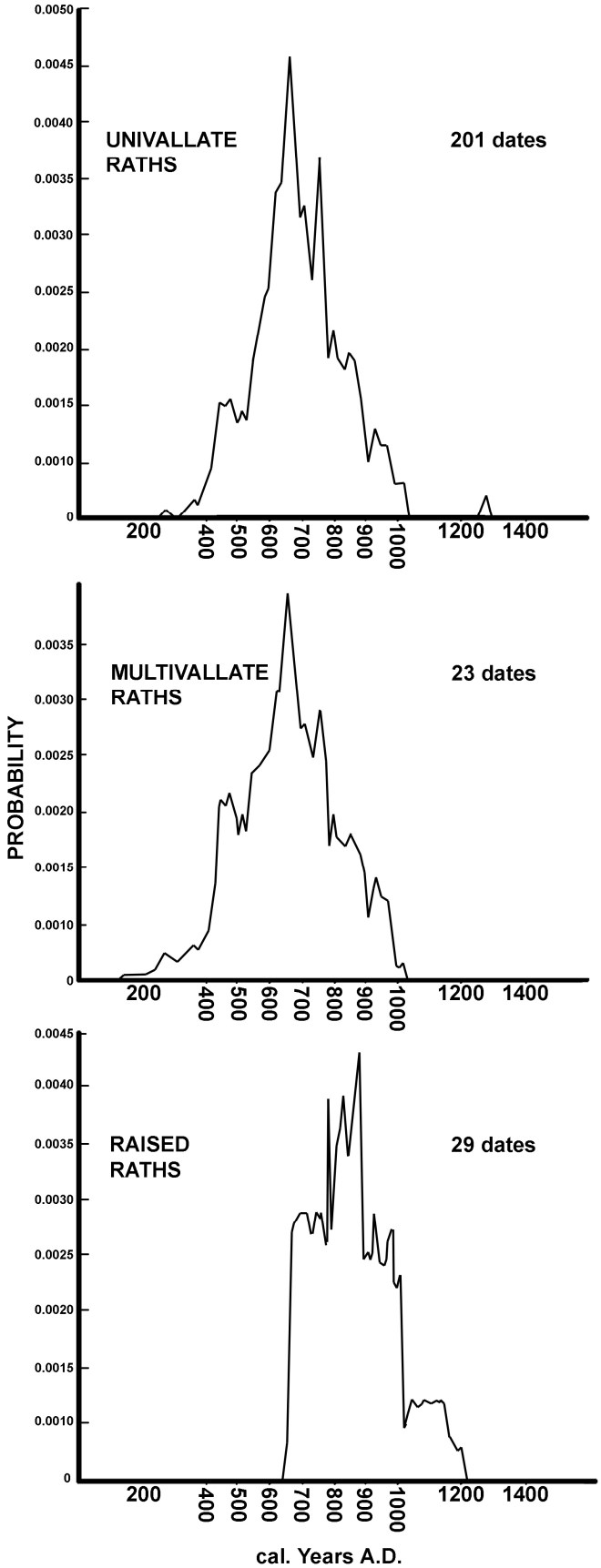

Fig. 3.2: Combined Probability Chronologies for Univallate, Multivallate and Raised Raths.

Although certain sites may have been re-occupied in later centuries, the radiocarbon dates from the construction and primary occupation phases of raths are largely concentrated in the second half of the first millennium (Fig. 3.2). There are, however, a number of possible problems with Fig. 3.2, not least of which is that the stratigraphical realationship of the dated and sampled context is occasionally unclear. This is especially problematic in the cases of univallate raths which develop into raised raised through the accumulation of generations of occupation debris. The greatest issue with constructing Fig. 3.2, however, is the conglomeration of decades worth of radiocarbon dates of varying qualities, taken from various organic samples, and dated to various degrees of accuracy. Whereas cereal grains or twigs have been often used in the 2000s to produce dates using Accelerator Mass Spectrometry, many earlier dates were achieved through bulk sampling of wood charcoal. The dating of charcoal is fraught with issues, especially the 'old wood effect', whereby, even if the sample could be argued to have come from one solitary piece of wood, the radiocarbon date may potentially pre-date the felling date by decades or even centuries in the case of charcoal produced from large timbers. The increasing numbers of radiocarbon dates produced from short-lived samples taken from well-defined contexts should, however, effectively counter the potential impact of these earlier dates, and future combined probability graphs may be able to display a more refined chronology.

The rather limited dating evidence for cashels suggest that they have a similar chronology to raised raths and that their construction is generally later than the main building phase of earthen raths. Carraig Aille, Co. Limerick has been argued to be of late Iron Age date because of the presence of Late Roman artefacts (Caulfield 1981, 208-9), however the early material from the site has been demonstrated to belong to pre-cashel occupation deposits (Lynn 1983c, 48-49). The presence of pre-cashel occupation greatly complicates the dating of the site, although it has been suggested that the cashel settlement dated from between the eighth and eleventh century (Ó Ríordáin 1949a, 108), and most of the finds support this claim. Based on the souterrain 'integrated with the wall of the fort' (Hencken 1938, 34) at the cashel of Cahercommaun, Co. Clare, a construction date in the eighth/ninth century (see discussion on chronology of souterrains) could be expected for this site. On the basis of a silver pennanular brooch, the excavator suggested an early ninth-century date for the site (Hencken 1938, 2), however, a significant re-appraisal of the metal artefacts from the site, identified objects dating between the fifth/sixth and eighth centuries, as well as the ninth-/tenth-century material (O'Floinn 1999, 73-79). A similar ninth-/tenth-century date could be ascribed to the cashel at Rinnaraw, Co. Donegal. This site contained a rectangular house with rounded corners (possibly Norse influenced), and radiocarbon dates suggest that the 'main phase of activity…dates to the ninth century' (Comber 2006, 107).

A couple of radiocarbon-dated cashels suggest high medieval phases of construction and occupation, for example excavations at Caherconnell, Co. Clare (Comber and Hull 2008) identified primary occupation between the tenth and early thirteenth centuries A.D., with radiocarbon dates suggesting that the cashel was built 'sometime between the early tenth and the mid-twelfth centuries' (*ibid*. 31). White Fort cashel at Drumaroad, Co. Down (Waterman 1956a) contained a single rectangular house with associated souterrain, and finds included a large quantity of souterrain ware and an iron coulter suggesting a date of the 'latter part of the first millennium A.D.' (*ibid*. 86). An early radiocarbon date of charcoal from the house suggests a date of between the tenth and thirteenth century (Kerr 2007, 91; McAuley and Watts 1961, 36), while the coulter may well also be indicative of a post-tenth century A.D. date (Brady 1994a, 1994b). The chronology of cashels, based on structural typologies, artefacts, and radiocarbon, suggests that their main phases of construction and occupation post-date the similar phases for raths.

Dendrochronology suggests an intensification of crannog construction in the seventh century (Baillie 1979, 79), making the 'typical' early medieval crannog synchronous with the primary occupation of univallate and multivallate raths. It is clear, however, that certain crannogs are prehistoric in origin, whereas others remain in use (or are re-used) until the seventeenth

century (O'Sullivan A 1998a). This long chronology of potential occupation blurs the positioning of crannogs within an early medieval society model.

The settlement enclosures excavated in the 2000s are potentially the best dated early medieval site-types in Ireland. A few enclosures show mid-first millennium dates, for example a radiocarbon date of 430-650 A.D. was obtained from charcoal from a pit which contained souterrain ware at Balriggan, Co. Louth (Delaney 2010, 99); while radiocarbon dates and imported seventh-century E ware suggest a sixth-/seventh-century origin for Roestown, Co. Meath, (O'Hara 2007; 2009a). Ballynacarriga, Co. Cork (Noonan 2001:0115) has also produced radiocarbon dates from the fifth to seventh centuries onwards; and a small early medieval enclosure at Conva, Co. Cork was dated to the 'between the early sixth and late ninth centuries A.D.' (Doody 2008, 604).

Provisional dating evidence suggests the majority of these settlement enclosures were constructed and occupied in the latter half of the first millennium A.D., for example Killickaweeny, Co. Kildare (Walsh 2008, 31) and Ballycasey More, Co. Clare (Murphy 2001:045; O'Neill 2002:0079) have radiocarbon dates from the seventh/eighth century through to the tenth century. The material culture from sites such as Cahircalla More, Co. Clare (Taylor 2004:0141) and Ballyconneely, Co. Clare (Breen 2000:0047) also appears to place these sites to the latter part of the first millennium A.D. This late millennium dating is further supported by the integral presence of souterrains (see above) at a large number of sites including Roestown, Co. Meath, Ballynacarriga, Co. Cork, Ballywee, Co. Antrim (Lynn 1988c) and Rosepark, Co. Dublin (Carroll 2008, 72-94). Many of these sites showed evidence for multiple phases of continuous occupation, although ironically, Newtown, Co. Limerick, the type-site for 'plectrum-shaped' enclosures, was found to have only one principal phase of occupation (Coyne and Collins 2003). The radiocarbon dates from Newtown are rather imprecise – a date of A.D. 700-1015 (2Σ) was returned for the foundation trench of the house, and a date of A.D. 797-1280 (2Σ) for the central post – and it is argued that the ditch of the enclosure was back-filled sometime between the eleventh and the thirteenth centuries A.D. (Coyne 2006). A small number of sites like Roestown (O'Hara 2007, 2009a); Castlefarm (O'Connell 2006; 2009a); Raystown (Seaver 2005b; 2006; 2010); and Ninch (McConway 2002) all in Co. Meath, show evidence for having been occupied through the latter part of the first millennium, and through into the high medieval period. The radiocarbon dates from most of these settlement enclosures, however, appear to cluster *c.* A.D. 700 - *c.* A.D. 1000 (Kinsella 2010, 106-11).

Few early medieval 'palisaded enclosures' have been identified and these do not show any recognisable chronological pattern. The palisaded enclosure at Aghadegnan, Co. Longford (Carroll 1991:0091) developed into a rath in the fifth/sixth century, whereas the palisaded enclosures at Ballynagallagh, Lough Gur, Co. Limerick (Cleary 2006) and Lowpark, Co. Mayo (Gillespie and Kerrigan 2010) were occupied from the eighth century onwards.

There appears to be reasonable uniformity in the dates returned from unenclosed stone-built *clocháns* (bee-hive-shaped structures) in southwest Ireland. Organic deposits under the wall of a structure in the Barrees Valley, Co. Cork (O'Brien 2003:0174) were radiocarbon-dated to A.D. 582-765 (2Σ); and a conjoined *clochán* at Coarha Beg, Valentia Island, Co. Kerry (Hayden 1994:0119) was radiocarbon-dated to A.D. 562-758 (2Σ). The excavated huts at the early medieval 'transhumance village' of Ballyutoag, Co. Antrim appear to be slightly later, and largely date to the eighth century A.D. (Williams 1984, 47-48).

The chronology of souterrains has already been discussed (above) and unenclosed souterrains, or unenclosed settlements with associated souterrains, presumably date to this 'ninth to twelfth century bracket' (Warner 1986, 111). An unenclosed souterrain associated with rectangular fields at Marshes Upper, Co. Louth (Mossop 2002:1335), however was radiocarbon dated to A.D. 405-690 (2Σ), providing an exception to this general assumption. Radiocarbon dates from the gully of an isolated roundhouse at Blackhills Lower, Co. Cavan (McConway 1992:0007) stretch from the end of the ninth century to the end of the thirteenth

century; and a slab inscribed with *futhork* runes, dated stylistically *c*. A.D. 1050, was re-used as a roofing lintel at Beginish, Co. Kerry, suggesting that the structure was built sometime after this date (Sheehan *et al*. 2001). Unenclosed settlements in various forms are found across the whole of the early medieval period, yet their lack of uniformity and resistence to categorisation means that they tend to be overlooked when discussing the wider chronology of this period.

Notwithstanding the fact that most studies on early medieval archaeology are focused on the rath, the defining rationale for the site-type is still unknown. Lynn (2005, 16) examined various theories of their function concluding that they are defended 'homesteads' rather than 'farmsteads' and poses the obvious question: 'why during the seventh and eighth centuries did raths spread like a rash all over the landscape?' The arrival of Christianity in Ireland has been argued to have brought with it an 'ideological package' which included a new attitude to land ownership, with communal ownership giving way to individual land ownership, which in turn gave rise to a 'sense of place and commitment to their property that was different to that held under communal ownership' (Mytum 1992, 46). With the movement to smaller units of ownership, he argues, settlement became more dispersed 'each being smaller and accommodating individual family units' (*ibid.* 47).

Although the early Irish laws indicate that land was privately owned *fintiu* ('kin-land') (Kelly 1988, 100-1) there is no evidence that the concept of private land ownership was a consequence of the arrival of Christianity. Lynn (2005) does not see a connection between the arrival of Christianity, and any associated putative social or economic change, and the proliferation of the rath. He sees no evidence for invasions at this time or a change in the type of warfare practised in Ireland. An examination of the annalistic evidence led him to the conclusion that the main exceptional feature to affect Ireland during these centuries was a series of plagues and pestilences, which are generally regarded as having led to widespread mortality at the time. Lynn suggests that, as a reaction to this, the nobility attempted to quarantine themselves: 'it may be that the construction of crannogs and 'duns' of the elite was in part triggered by fears arising from the first plague [Justinian] of the 540s' (*ibid.* 17). He continues: 'the construction of the commoner rath of the landholding, farming class may have been delayed while a social reorganisation resulting from the decimation of the population by the first plague took place...or it could be that the main stimulus for rath construction by the free farmers had to await the second major outbreak of plague in 664' (*ibid*.). Lynn feels that plague provided the catalyst for constructing defences against unwanted intruders but that at a later stage these defences came to demonstrate status, with their circular form perhaps 'copying the sacred form of ecclesiastical or talismanic purposes and to invoke divine protection' (*ibid*.).

The principal evidence for Lynn's hypothesis is the coincidence between the main period of ringfort building activity and the incidence of severe plague in Ireland. Charles-Edwards (2000, 152-53) noted that while plagues inevitably cause a sudden fall in population, the population can also recover rapidly if the average age of marriage declines. He suggests that it is therefore possible to reconcile 'the general evidence for increased settlement and economic activity…with the outbreaks of plague' (*ibid*.). Keys (1999) also highlights a connection between plague in Ireland and the genesis of the rath. He argues that political instability caused by the sixth-century plagues in particular led to an escalation of political violence, and indeed he attributes the rise of the Uí Néill hegemony to opportunities provided at this time. As a response to this decline in security he believes that 'from the mid-sixth century onwards, even the lowest of farmers began to construct defenses around their relatively humble homesteads…typically they would build small stone ramparts or earthen enclosures around their farms – mainly in order to protect themselves and their livestock in troubled times' (*ibid.* 135). He additionally notes that of the fourteen crannogs then dated by dendrochronology, nine 'were built in the period 550-620 (*ibid.* 321) again emphasizing the coincidence of defensive settlements and times of plague.

The chronology of raths (Fig. 3.2) indicates that there was no gradual evolution of the monument type. McCormick (1995a) argues that the genesis of the rath was related to the introduction of advanced dairying technology at the beginning of the early medieval period. Advances in dairying would have led to greatly significant increases in food production, which would in turn have facilitated population increase. Cows and dairying would have suddenly become central in the agricultural economy and cattle 'began to develop and elevated social and economic position' (*ibid*. 35), ultimately leading to them becoming the basis of the wealth system of the period. McCormick concludes 'this may be a period [i.e. the sixth-seventh century] when the growing stress of population on the demand for land, accompanied by increasing cattle raiding, led to the development of the rath' (*ibid*. 37). The problem with this theory is that the 'revolution' in dairying at this time has not been demonstrated. It is now known that cows in Britain were being milked from as early as the Neolithic period and that butter was being produced in Ireland several centuries before the advent of Christianity (Downey *et al*. 2006).

Other factors have also been argued for the emergence of enclosures in Ireland around the sixth century. It has been argued that they represented 'carefully defined social spaces' (O'Sullivan and Nicholl 2010, 66), designed to reflect the distinctiveness of the occupants and to protect their property and privacy. This seems to have been accepted and enforced in the contemporary legal structure. It has been noted, for example, that the law tracts promoted a sliding-scale of reparations for the violation of the law of hospitality, depending on whether this took place in the house, in the rath enclosure, in the rath green (*faithche*), or in the outfield (*sechtar faithche*) (Ó Carragáin 2010, 220).

Even less work has been done on the demise of the rath in Ireland. The radiocarbon dates (Fig. 3.2) suggest that there were two major declines in the occupation of univallate and multivallate raths – the first *c*. A.D. 800, and the second *c*. A.D. 1000. The start of the ninth century seems to mark the end of the major phase of rath construction and occupation; and by the end of the millennium it would appear that univallate and multivallate raths had been abandoned. If the plague origin argument has any validity it is possible that rath construction went into decline because of a failure to halt the spread of subsequent diseases. It is also possible that the decline in raths construction was connected to a move away from the earlier cattle-based socio-economic system (Kerr 2007, 114-15). This may have been a result of increased arable acitivity and an inherent change in the way in which land was perceived and worked (e.g. Kerr 2009, 74); it may have been a result of the influence of the Viking silver economy, or the increased value of human chattels; or it may have been a result of population expansion which meant that it was impossible to maintain individual social status based upon the numbers of cattle owned (Lyttleton and Monk 2007, 18).

Cultural Biographies

In this broad chronology of early medieval Irish settlements, the evidence can be used to discern nuances and patterns in the cultural biographies (i.e. the shifting social and cultural meanings of places and objects across time) and the development of individual settlements in terms of their own site histories. Some raths were constructed on top of earlier prehistoric monuments, for example a pre-rath phase of activity at Lisleagh I, Co. Cork, consisted of hearths, stake-hole alignments, artefacts, pottery and stone, all possibly dating to the Bronze Age (Monk 1995); and a rath was built on the site of a Bronze Age 'village' at Corrstown, Co. Londonderry (Conway 2002:0386; Conway 2002:0387). Excavations on the rath at Carrowkeel, Co. Mayo (Zajac 2002:1382; Zajac 2003:1307) revealed an earlier ditched enclosure, with charcoal inclusions suggestive of cremation burials; and at Carrigaline Middle, Co. Cork (Sherlock 2001:0130), excavations revealed an earlier ditch truncated by the rath ditch, enclosing the cremation burials and funerary pyres of a prehistoric cremation cemetery. Some cashels also show the re-use of an earlier site, for example extensive prehistoric material was discovered at Cahercommaun Fort, Co. Clare (Hencken 1938). These sites, however, do not necessarily indicate continuity of occupation, nor can they even be taken to suggest an historically-aware re-use of the location (e.g. Cotter 1999).

There are indications on a number of early medieval sites, however, which suggest continuity of occupation/ownership from an earlier period. Radiocarbon dates from the foundation trenches of three circular 'huts' in the interior of a rath at Lislackagh, Co. Mayo (Walsh G 1995, 7-8), suggest occupation phases ranging from 200 B.C. to A.D. 200. The excavation, however, uncovered glass beads, lignite bracelet fragments and a bronze stick pin – all of which are typical of the early medieval period. It is possible that the rath and early medieval occupation phase was part of the continuous occupation and remodelling of the site, although the three/four century potential gap in occupation between the Iron Age and early medieval period weakens the argument for continual habitation of the site. The size of the 'huts' – all less than 5m in diameter – may also suggest that they represent the remains of Iron Age ring barrows, rather than Iron Age habitation sites. This re-occupation of earlier burial sites is discussed in Chapter 4.

There is less equivocal evidence for continuity of settlement at Cloongownagh, Co. Roscommon (Henry 1999:0765) where an unenclosed Iron Age settlement dating from the first to the fourth centuries A.D. was later enclosed and developed into a rath. At Dunsilly, Co. Antrim the rath rampart was preceded by two phases of occupation, Pre-Rath A/B and Pre-Rath C, which included circular structures and souterrain ware (McNeill 1991-2, 81-85); and a similar pre-rath early medieval site may have been identified at Ballykennedy, Co. Antrim (Brannon 1980b, 69-70). The Phase I gullies which underlay the central house platform at Ballykennedy contained sherds of souterrain ware (*ibid*. 69); and the Phase I gully around an unenclosed wattle-built house at Dromthacker, Co. Kerry returned a sixth-century radiocarbon date (Cleary 2008, 38). Dunsilly, Ballykennedy and Drumthacker would appear to have been unenclosed early medieval site which were converted into raths with little, or no, break in the occupation record.

A small number of raths may have evolved from pre-existing palisaded enclosures. The best example is found at Aghadegan, Co. Longford (Carroll 1991:0091) where the earliest phase of occupation was marked by a series of unenclosed round 'structures', presumably houses. This developed into an early medieval palisaded enclosure, which, in turn was replaced by a later rath. Radiocarbon dates from Aghadegan imply a continuity of settlement from the fifth to the tenth centuries (Kerr 2007, 88). A similar progression has been argued for Coolcran, Co. Fermanagh where stake-holes 'may have formed a perimeter fence in an enclosure which predated the rath' (Williams 1985a, 71). The site was greatly disturbed, however, and the absence of pre-rath habitation layers renders this conclusion rather uncertain.

Some specific examples suggest a deliberate, political re-use of earlier sites. Although these may not always imply continuity of use, they may be argued as deliberate expressions of political power or claims to places of some ancestral or ideological importance. It has been argued that the builders of the early medieval cashels within the ramparts of the Late Bronze Age hillfort at Mooghaun, Co. Clare 'were positioning the forts in order to support a historic claim to the hillfort' (Grogan 2005, 126). A similar desire to enforce an ancestral claim doubtless encouraged the kings of Northern Brega to construct their rath over the passage tomb at Knowth, Co. Meath. Although there was a clear break in occupation at both Mooghaun and Knowth, continuity of settlement and, by implication perhaps, continuity of political power, occurred at Clogher, Co. Tyrone (Warner 1973, 6), where the late prehistoric hillfort was succeeded by an early medieval rath.

A similar desire at a later date to usurp the location of earlier powerbases is potentially seen by the fact that a number of raths were converted into Anglo-Norman mottes in the late-twelfth/early-thirteenth century (Ó Drisceoil 2002). The rath at Beal Boru, Co. Clare, identified as a defended settlement which was destroyed by Toirdelbach Ua Conchobhair in A.D. 1116 (O'Keeffe 2000a, 21), was remodelled by the Anglo-Normans in A.D. 1207 (O'Kelly 1962, 3); and excavations at Dunsilly, Co. Antrim (McNeill 1991-92) show evidence for a pre-rath phase, a rath phase, and a phase in which the rath was converted into a motte. Another univallate rath that was converted directly into a motte was excavated at Killybegs Road, Antrim (McSparron 1998:0002), while the eighth-/ninth-century raised rath at Rathmullan,

Co. Down was further heightened in the twelfth century and turned into a motte (Lynn 1981-82, 148-50).

It has been argued that most raths operated for a relatively short period of time with occupation 'perhaps to be measured in decades rather than centuries' (Mytum 1992, 123). Mytum's conclusion was based on the fact that only four of sixteen excavated raths from Co. Antrim revealed evidence for more than one phase of an enclosure bank (*ibid*. 126), and a similar pattern was shown in twelve of twenty-one sites from Co. Down, and all nine excavated raths at Cush, Co. Limerick (*ibid*.). In this model, the majority of raths were constructed and then allowed to gradually decay, while a minority of sites showed evidence for maintenance, or for some degree of reconstruction or secondary construction. In contrast, an early Irish poem lists seven successive owners of the rath at Rathangan, Co Kildare (Stout 1997, 115), and, given the shorter life-expectancy of the time, seven generations of ownership may be converted into an occupation span of two centuries or slightly more.

Excavations in the 1990s and 2000s have produced abundant evidence for raths being occupied over long periods of time, and also for them being re-modelled to deal with changing political, economic and social challenges. Morphological or typological changes to the enclosure, and/or reorganisation of the interior are clear indicators of multi-phase activity on a number of sites. At Lisleagh I, Co. Cork, an earlier univallate rath was razed and replaced by a substantially larger bivallate one (Monk 1995, 106); and excavations of a bivallate rath at Whiterath, Co. Louth revealed that the banks were constructed over two separate phases (Ó Drisceoil 2000:0721). In the few excavated examples when univallate raths were found to have changed into bivallate raths, this is by addition of an external circuit of bank-and-ditch, however at Rathgurreen, Co. Galway, a secondary bank-and-ditch was constructed within the earlier enclosure (Comber 2002, 145; 150). Long-term occupants of raths also appear to have built upwards, as well as outwards. At Rathmullan, Co. Down (Lynn 1981-2), Deer Park Farms, Co. Antrim (Lynn 1988f) and Gransha, Co. Down (Lynn 1985) the initial univallate rath developed into a raised rath. At Deer Park Farms there was continuity of occupation while the settlement changed (Lynn 1988f, 47), but the evidence on the other sites is less certain. In other instances, the rath was replaced by an unenclosed settlement, for example the seventh-/eighth-century rath at Knowth, Co. Meath was abandoned, and an unenclosed settlement, characterised by a large number of houses and souterrains, was built over its remains in the tenth and eleventh century (Eogan 2007, 1-5).

Some early medieval sites were quite clearly positioned to take advantage of economic resources, or to impute a degree of political respectability to the inhabitants, but the origin of other sites is less clear. The excavated early medieval sites show varied and diverse cultural biographies and a complexity beyond the myriad social hierarchies which are referred to in the various early Irish legal tracts.

The Early Medieval Social Landscape

There is a lack of current agreement about who constituted the inhabitants of the various diverse structures and enclosures which were built and occupied during the early medieval period. Archaeological excavation has provided some insight into social variations, but the early medieval social landscape is still largely understood in the context of the extant Old Irish documentary sources. The Irish law tracts of the seventh and eighth centuries, such as the *Críth Gablach* (Law of Status) or the *Cáin Aicillne* (Rules of Base Clientship), describe a formalised society with an extremely structured hierarchy. These early laws record three grades of king (Kelly 1988, 17-18); four (or five) grades of nobility ('*flaith*') ('*aire déso, aire echtai, aire ard, aire tuisi* and *aire forgaille* (Richey 1879, 321; MacNeill 1923, 296; Kelly 1988, 28); and five (or six) grades of free independent farmer, according to the *Críth Gablach* and *Cáin Aicillne* (Patterson 1994, 366-67). The *bóaire* ('large farmer': lit. 'cattle lord') and the *mruigfher* are described in the *Críth Gablach* as the two highest classes in the 'farming' ('*boairig*') grade. Above this grade is the 'noble' grade with the *aire déso* at the bottom and the *aire forgaille* at the summit of this hierarchy. The *aire coisring* is sometimes included at the base of the *flaith* grade, and other times at the summit of the *boairig* grade. To these

may also be added the 'semi-freeman' or 'tenant at will', the 'hereditary serf', with slaves at the base of the social pyramid (Kelly 1988, 11).

With around 50,000 known early medieval sites, it should be possible to identify these hierarchies in the archaeological landscape, however the type of sites occupied by the different grades of society is not well understood. The *Críth Gablach* indicates that the *les* of the king was surrounded by a rampart, suggesting a rath; and Mytum argues that raths were the residences of 'the aristocracy, together with the few of the highest grade of freemen who possessed base clients' (1992, 131). Although Mytum's argument has not been generally accepted on the basis of physical remains (it fails to account for the fact that raths number in their tens of thousands), certain aspects of this assertion are supported by contemporary documentary sources. Kelly states that 'the most significant difference between the house of the lord and that of a commoner is the presence of defensive earthworks, the digging of which is listed among the duties owed by a client to his lord' (1997, 363). Clients were the prerogative of the nobility, with the single exception of the *flaith aithig* ('commoner lord'), a person in transition between the farming and noble grades. The *flaith aithig* had twice the wealth of a *bóaire* and was therefore able to support clients (Kelly 1998, 28). Consequently, the ownership of 'defensive earthworks' might be regarded as physical evidence of noble status. The free farming classes also needed to protect cattle (most of which were in effect the property of the nobility who provided them as part of the institution of clientship), but unlike the nobility, who employed *manchuine* ('client-labour') (*ibid*. 33), the farming class would have had to build their own raths. It has been argued that members of the royal or noble grades may have made use of *manchuine* to construct multiple circuits of banks-and-ditches which would therefore act as signals of their power and authority (Mytum 1992, 122; Warner 1988, 59). While admitting that the law tracts make no mention of raths belonging to the non-noble grades of society, Stout (1997, 113-14) argues that the dimension of raths given in the sources are greater than most surviving examples, and that consequently the small univallate raths must belong to the upper rungs of the free non-nobles classes, i.e. the *bóaire* and *ócaire*.

Material culture as wall as site morphology has been argued to reflect the social status and relative wealth of the site's inhabitants. Variability in the quality and quantity of artefacts recovered could be used to interpret the social status of the inhabitants of individual raths, and from this, to estimate the role or function of the site within the local, or wider, social landscape. There are obvious problems with this as a general assumption, for example a site may produce relatively few finds because of variations in excavation techniques, survival of archaeology, longevity of occupation or the process of abandonment (gradual or rapid and uncontrolled) of sites in the past.

The artefactual remains from a number of early medieval sites, for example Aghadegnan, Co. Louth (Carroll 1991:0091); Glebe, Co Dublin (Seaver 2005a); and Leggetsrath West, Co. Kilkenny (Lennon 2006), suggest they were associated with high status social groups. In some cases, the site may already be suspected from historical sources to be an aristocratic or lordly site, but in most cases historical sources are silent about individual settlements. Imported pottery, such as Late Roman Amphorae (B ware) or Gaulish E ware, indicates extensive trading links (Chapter 7); and in some cases there is significant evidence for non-ferrous metalworking and/or glass-working (Chapter 6). These factors could indicate that the site's inhabitants were of high status, with substantial influence and social connections.

The material culture recovered from most early medieval univallate raths, however, tends to be basic and relatively sparse. Finds are usually restricted to utilitarian objects such as iron knives, needles, nails as well as rotary querns, hone stones, flint and chert débitage, spindle whorls and needles. Personal and dress items are generally restricted to ringed pins (copper-alloy and iron), glass beads and bracelets, lignite bracelets, bone combs and bone pins. Finds assemblages from excavations in counties Antrim, Down and north Co. Louth are often more abundant, largely due to the ubiquitous presence of native souterrain ware pottery (Chapter 6). There is occasional evidence for metalworking (sometimes extensive), principally in the

form of slag, and approximately half of excavated raths had evidence for hearths/furnaces, as well as materials and artefacts used for iron- and metal-production. Over half of the raths excavated revealed evidence for post-and-wattle, sod-walled and stone buildings (see below), and souterrains (see below) were found in a number of sites. A small number of raths revealed evidence of internal corn-drying kilns (Chapter 5), while 'gatehouses', e.g. Garranes, Co. Cork (Ó Ríordáin 1942a, 82-84), and metalled, cobbled or paved surfaces were also revealed on a number of sites (see below).

If enclosed settlements were the defining hallmark of free-men – the '*nemed*' (the noble and royal grades) and/or the '*sóer*' (small farmers upward) (Kelly 1988, 9; Edwards 1990; Mallory and McNeil 1991; Mytum 1992; Graham 1993; Stout 1997; Charles-Edwards 2000) – then contemporary unenclosed settlements may have been the sites of the un-free, dependant labourers, or the socially marginalised (Kinsella 2005). A large proportion of the population must have been composed of '*fuidir*' ('tenants-at-will') and '*dóer*' ('semi-free') and there must also have been large numbers of slaves (Kelly 1988, 9-11); these peoples tend to be overlooked in most settlement models (Boyle 2004). It was once suggested that the mass of the population lived in small nucleated settlements somewhat similar to the clachans that survived in many parts of western Ireland until the twentieth century (Evans 1973, 58-65), however most of these would now appear to be a later medieval, or even a post-medieval, settlement type. Excavations at Murphystown, Co. Down, for example, found no evidence that the clachan was of great antiquity, and although several pits which contained souterrain ware were found, they 'merely suggest that the site was occupied in early Christian or mediaeval times' (Buchanan *et al*. 1956, 122). Six isolated early medieval houses on the slopes of Knocknarea, Co. Sligo were excavated in the late 1970s (Burenhult 1984, 71-109). Found in the nearby townlands of Ballybeg, Grange West, Luffertan and Seafield, many of these sites are up to 0.5km from each other and thus could, at best be, interpreted as an open settlement cluster, though there is clearly not the close cohesion associated with a clachan. Unfortunately the information available on these sites is rather limited as the excavator was focused on Mesolithic material. Unenclosed settlements which could have functioned as habitations for the early medieval 'impoverished' populations (Boyle 2004) may include isolated house structures (with or without an associated souterrain); unenclosed settlement sites within field systems; and coastal habitations sites. The conventional dating of souterrains in the ninth to twelfth century (Clinton 2001, 92-94), places those unenclosed houses with souterrains towards the end of the primary rath occupation period, rather than contemporary with it. This lack of chronogical certainty and absence of clear synchronicity makes it very difficult to argue that unenclosed sites and enclosed sites are clear indicators of differences in social standing or individual liberty.

It is possible that sites with a small number of domestic artefacts, such as Shewis, or Croom, Co. Limerick (Shee-Twohig 1977) and Drumbroneth, Co. Down (Brannon 1980c), may represent raths for the lower status (Kinsella 2010). Equally, however, it is possible that many of these sites which had no artefactual remains were not intended for human habitation, but may have been used for corralling animals, for example, Garryduff II, Co. Cork (O'Kelly 1963, 120-25) or Magheraboy, Co. Sligo (Ryan 2001:1171). Excavations at a univallate rath at Shewis, Co. Armagh (Brannon 1980d, 108) uncovered one sherd of souterrain ware, and a small number of scattered post-holes were discovered at the site. The site did not appear to have been occupied for any great period of time and the excavator suggested that it was an animal enclosure, rather than a human occupation site.

A few attempts have been made to identify the dwellings of the various grades described in the *Críth Gablach* (e.g. Stout 1991; Kerr and McCormick 2004), but neither of these settlements models adequately deal with non-rath settlements, and both have an implicit assumption of contemporaneous occupation. Stout used cluster analysis to divide the raths in baronies of Clonlisk and Ikerrin in counties Tipperary and Offaly into six groups and then attempted to assign each group to a certain early medieval social grade (Stout 1991, 238; Stout 1997, 127). Based on these statistical 'clusters', Stout attempted to interpret the status of the site occupants, and, by doing so, attempted to understand how the early medieval

landscape was organized socially. Large, multivallate raths seemed to be central to the settlement system, and may be taken to correspond closely to the dwellings of the typical *aire forgaille* or high lord. Well-defended, univallate raths may have been the settlements of the *aire déso* – a lower grade of lord, who seems to have had an inter-territorial military function. These sites may have functioned as places of refuge for the cattle of the local community in times of danger. Similar use of cluster analysis was employed in Co. Fermanagh (Kerr and McCormick 2004).

This rather simplistic settlement model of arguing social grade by site type has a number of significant flaws. Although it identifies major differences in society in the relative domestic sites, it fails to identify the subtle variations within the grades. Many early medieval sites, such as crannogs or settlement enclosures, tend not to be included within social settlement models for this period. The size and nature of early medieval promontory forts would suggest that they had a high status role, yet this is not confirmed by excavation on site. The material culture remains from settlement enclosures suggest that the inhabitants on different sites had differing social status (Kinsella 2010). Two of these sites produced evidence for international imports in the form of E ware – Roestown, Co. Meath (O'Hara 2007, 262; 2009a) and Rosepark, Co. Dublin (Doyle 2008, 112-15) – and the discovery of brooches, pins and a shield boss at Castlefarm, Co. Meath suggest that it may also have been a high status site (O'Connell 2006, 19-21; 2009). Other sites, like Newtown, Co. Limerick (Coyne 2006), however produced very little material culture, and thus were presumably of a lower status.

Various archaeologists and historians have also suggested that there was a shift *c.* A.D. 800 from a social organization based around clientship, to a system of labour services to a lord indicative of proto-feudalism (Graham 1993, 44; O'Keeffe 2000a, 26; Kerr 2009, 74). Many raths may have been abandoned due to actual population relocation within new territorial frameworks under lordship control (O'Keeffe 2000a, 26), and this reorganisation may have necessitated the emergence of the central lordly 'fortress' (Graham 1993, 44). O'Keefe argues for the emergence of nucleated settlements around these 'fortress' sites which, in the historical sources for this period, are interchangeably referred to as *caislean, longphort or dun* (2000a, 26-9). A number of potential sites have been mooted as potential *caislen* sites, for example *Caistel Duin Leodha* at Ballinasloe, *Dun Echdach* (Duneight), Co. Down, and the English Mount, Downpatrick, as well as pre-Norman fortification at Limerick and Dunamase, and the destroyed fort at Dun Mor, Galway. There is some similarity in form between these sites, for example both Duneight and Dun Mor are large, flat-topped mounds, and the site at Downpatrick consists of a raised central mound enclosed by a large bank. This shift of social organization (Kerr 2007, 111-13; McCormick and Murray 2007, 111-15; O'Sullivan and Downey 2007, 35) coincides with potential changes in the predominantly pastoral economy and the emergence of a more mixed farming system (Chapter 5).

Traditionally, scholars have interpreted the social 'function' of crannogs from what were deemed the essential properties of a crannog – i.e. high visibility, difficulty of access, and laboriousness of construction. As such, crannogs have often been seen as island strongholds or defensive refuges, providing a secure residence to be occupied at times of conflict and danger (e.g. Warner 1994). The archaeology and the early Irish historical sources suggest that some crannogs were high status or even royal sites. There is evidence for high-status feasting (McCormick 2002), and also evidence that they may have been used as re-distribution centres for the patronage of crafts and industry (O'Sullivan A 1998a, 141). As with multivallate raths, the size, complexity of construction and impressive architecture of crannogs, may have been used to display the social and ideological power and status of their owners. The early medieval crannogs of Lagore, Co. Meath (Hencken 1950) and Island MacHugh, Co. Tyrone (Davies 1950; Ivens and Simpson 1988) could certainly be interpreted as the island residences of kings or nobles. Perhaps they were used as summer lodges, public assembly places, and as places for recreation and the strengthening of social ties through feasting, drinking and gift giving. Early medieval crannogs have also been associated with the patronage and control of craft production, typically fine metalworking (O'Sullivan A 2010, 85-86). Moynagh Lough, Co. Meath (Bradley 1991; 1993), a probable lordly crannog –

particularly during its mid-eighth century occupation phase – was clearly a place where various specialist craft workers resided and worked; while Bofeenaun crannog, on Lough More, Co. Mayo (Keane 1995) appears to have been devoted to the processing of iron ore by specialist blacksmiths.

It is clear from archaeological surveys that most crannogs were essentially small islands or lakeshore dwellings, occupied at various times by different people, not necessarily of high social status. Recent archaeological excavations at Sroove, on Lough Gara, Co. Sligo (Fredengren *et al*. 2004, 164) have suggested that some small crannogs were the habitations of social groups or households who had little wealth or political power. This may be manifested by clusters of crannogs found in the same lough (O'Sullivan A 2010, 84). It has also been demonstrated that many crannogs were small islets situated in shallow water, quite unlike the classic image presented by the larger early medieval 'royal sites'. Indeed, several crannogs have produced relatively modest material assemblages and could be interpreted as the island homesteads of the 'middle classes' or perhaps even the poor. The unusually high incidence of the consumption of horse-flesh at Sroove could be an indication of poverty (McCormick 2007, 92).

Perhaps the most fundamental problem with attempts to model the social landscape of early medieval Ireland is that every model has assumed a synchronicity of occupation which is patently not the case. It seems clear, for example, that multivallate raths were high status sites, yet the dating of these suggest that they were not occupied through the entire early medieval period. The same point may be made about certain high status crannogs. It may be possible to divide the early medieval period into two phases for settlement modelling – one in which the primary sites were univallate raths, multivallate raths, and crannogs; and a later phase which includes raised raths, cashels and settlement enclosures. This is a rather crude division, and it is only when the chronologies of site types are better understood that it will be possible to create a more nuanced reading of the social landscape. Even then such settlement models may well only be applicable to specific areas, since the diversity in form of settlement enclosures and unenclosed settlements means that they may need to be dealt with on a case-by-case basis.

Viking Settlement

The Vikings are first reported in the annals at a raid on *Rechru* (probably Rathlin Island, Co. Antrim) in A.D. 795 (A.U. 794). From the early-ninth century until the late-twelfth century they played a significant role in shaping the ethnic, political, economic, social and military development of Ireland. The peoples of Scandinavian origin that lived in Ireland in the ninth and tenth century were distinguished by the annalists as '*dubhgennti* 'or '*dubhgall'* ('dark foreigners') and '*finngennti'* or '*finngall*' ('fair foreigners') (Etchingham 2010). Although the term 'Norse' is often used interchangeably with 'Viking' in Irish studies, this creates an over-simplification of the wider socio-political reality, blending Vikings of Norwegian, Danish, Irish and Hebridean origin into one group. From the tenth century onwards the most important Viking group in Ireland were the '*Gall-Gaedhil* ('foreign Irish'), the result of colonisation and inter-marriage throughout Ireland and the Irish Sea zone. They became especially recognisable in the Irish port towns of the eleventh and twelfth centuries by which time they had converted to Christianity and had become fully integrated within the local political landscape.

The reasons and motivations behind the location of Viking settlements is another area of current debate. Many historically recorded ninth-century Viking bases were situated on the border of political kingdoms, for example *Linn Duachaill* – between the territories of the Conaille and Ciannachta – and *Duib Linn* – between Southern Brega and Laigin (Ó Floinn 1998a, 162). A number of bases, including Ireland's Eye, Scattery Island, Clondalkin and Dublin itself appear to have been established on or adjacent to early medieval monastic sites (*ibid*. 163). It has also been noted recently that Woodstown, Co. Waterford is likely to have been located on the site of a former early medieval monastery (O'Sullivan and Breen 2007,

120). Viking burials have also been discovered adjacent to a number of ecclesiastical sites (Harrison 2001, 74). This evidence throws up interesting ideas about the interaction and relationship between pagan ninth- or tenth-century Vikings, and the local church authorities.

The Longphort.

The first century of Viking incursions into Ireland left little structural remains, with the exception of a number of temporary fortified camps – *longphuirt* (ship-camp). Mass (2008, 229-231) notes that terms '*dúnad' and 'dun'* were also occasionally used to describe such camps. The term '*longphort'* (pl. '*longphuirt'*) was first used in A.D. 840 to describe a Viking defended ship encampment on Lough Neagh (Maas 2008, 223), and *longphuirt* were mentioned in the following year for *Linn Duachaill* (Annagassan, Co. Louth), and *Dubhlinn* (Dublin). The *longphort* has been typically interpreted as a fortified base, often located at the confluence of a river and its tributary, from which the Vikings carried out raids into the neighbouring territories (Ó Floinn 1998a, 161). The archaeological identification of these sites has become a matter of considerable debate and discussion in recent years (e.g. Gibbons 2004; Kelly 1998; Kelly and Mass 1995; Maas 2008; Valente 2008, 37-56; Wallace 2008)

A number of *longphuirt* are historically recorded in the annals in the ninth and tenth centuries. In addition to those mentioned above Viking raiding bases were located *Inbher Dee* (Arklow? Co. Wicklow), Narrow Water and Strangford Lough, Co. Down; Lough Ree on the Shannon, and at Cork and Limerick (Ó Floinn 1998a, 162). A 'D-shaped' enclosure at Dunrally, Co. Laois on the banks of the River Barrow has been identified as *Longphort Rothlaib* – 'the camp of Rodolf' - which was destroyed in A.D. 860 (Kelly and Mass 1995, 30-32). The search for the Lough Ree *longphort* led to excavations at Ballaghkeeran (or Ballykieran) Little, Co. Westmeath (Fanning 1983; Youngs *et al*. 1983, 221). The earth had been considerably disturbed by subsequent ridge and furrow cultivation, but a substantial eastern bank was found upon excavation. Some iron slag and fired clay fragments were also found in a cutting made directly south of the promontory in a large banked-up hollow beside the mouth of the River Breensford, but nothing inherently 'Viking' was found (Youngs *et al*. 1983, 221; O'Sullivan A 1998a, 150).

The discovery of a silver weight, spearhead and spear-butt from a 'D-shaped' enclosure at Athlunkard, Co. Clare, led the excavator to interpret this as a potential historically unreferenced *longphort* (Kelly and O'Donovan 1998, 13). This interpretation has recently been challenged on the basis that neither the place-name nor the archaeological evidence is strong enough to make such a claim (Gibbons 2005, 24; Gibbons and Gibbons 2009, 10). Convincing archaeological evidence for a Viking longphort has recently been discovered at Woodstown, Co. Wexford (O'Brien and Russell 2005). Trial excavation of the site indicates a settlement area on the banks of the River Suir some 6km downriver from Waterford. There was evidence for occupation over and area of about 500m along the bank. Many finds of unequivocal Scandinavian origin were present including weaponry and lead weights (McNamara 2005). A Viking burial was also discovered (O'Brien and Russell 2005, 121). Geophysical survey indicated a series of discontinuous lengths of possible ditches or running parallel to the river (*ibid*. 118). Excavation produced evidence of ditches, and entrance and a palisade defence. Some of the excavated ditches, however, appear to be op pre-Viking date. An iron working furnace located in one of the ditch terminals produced a calibrated date of AD 420-620 (2Σ) (O'Sullivan and Stanley 2005, 152). The excavators (O'Brien and Russell 2005, 124) suggested the possibility that Woodstown had originally been a monastic site although there was no convincing evidence for his. Unfortunately, further excavation of the site was curtailed when the proposed roadway through the site was re-routed.

The archaeological evidence for *longphuirt* is still very limited. Little is yet known about their character, use and form in the ninth and tenth centuries A.D, and there is still a clear lack of understanding – and certainly of agreement - about the role, function and character of ninth-century Viking defended ship encampments (Gibbons 2005, 2)

Archaeological evidence for Viking settlement is concentrated in coastal urban areas especially in Dublin. The excavated area at Fishamble Street Dublin dated to the re-settlement of Dublin *circa* 918 after its abandonment in 902. Annalistic evidence indicate that Dublin (*Duib Linn*) was originally established in 841. The location of the pre-Fishamble Street settlement has been a matter of much discussion. The most obvious suggestion was that it had been near the Viking cemeteries of Islandbridge-Kilmainham discovered during the nineteenth century (O'Brien 1995, 1998). More recently, excavations in Temple Bar West to the west (seaward) of Fishamble Street have located Viking-type dwellings dated to the late ninth century (Gowen and Scally 1996; Scally 2002; Simpson 1999; 2010). These dwellings included small sunken buildings but the excavator suggested that these were small scale, even temporary dwellings, and did not represent the original *longphort* (Simpson 2010, 421), perhaps overspill form the latter. Great St Georges Street produced both Viking burials and buildings that also appeared to date to the ninth century. The emerging impression was of scattered settlement in ninth-century Dublin rather than, or in addition to, a longphort. This settlement model might explain the range of scattered Viking warrior burials around Dublin identified by Ó Floinn (1998, 133).

The excavations at Fishamble Street, Dublin, was extensive enough in order to uncover a streetscape and its house plots. Twelve tenement plots can be traced more or less constantly across time, with the occupation of at least 150 different houses over 150 years (Wallace 1992a, 7). These houses were entered directly from the street, and each house had vegetable plots, gardens and midden spaces out the back, as well as pig pens, workshops and storehouses. The town was a major centre for craft production, with imported raw materials such as wood, leather, bone, antler, amber and metals used for domestic equipment and high-status goods (Wallace 1987). Imported goods indicated trade contacts with much of north-west Europe while the presence of silk indicating trade contacts beyond Europe's borders.

The large corpus of excavated buildings from Dublin date primarily to the tenth and early eleventh century (Murray 1983; Wallace 1992a) with a smaller group dating to the late ninth century (above). The Viking period houses from Waterford (Hurley and Scully 1997), Wexford (Bourke 1990) and Cork (Hurley 2010) date from the eleventh and twelfth centuries. Wallace (1992a and b); has produced a typology of the house sites from Viking Irish towns which is summarised below. In general, it can be noted that they differed greatly from earlier Irish house types which tended to be round in shape, with no internal roof supports and with the weight of the roofs being borne by the walls. The Scandinavian houses were rectangular with internal roof supports and the walls were not weight supporting. It could be argued argued that while the design was of Scandinavian origin many of the details' of construction were Irish adaptations. The main house type (Type 1) was aisled, with a central area containing the fire place and two side isles, sometime slightly raised, containing bedding area. Sunken houses were also part of the Scandinavian house design package and it has been assumed by some that rural sunken houses such as Beginish, Co. Kerry (Sheehan *et al.* 2001) and Connemara, Co. Galway (Gibbons and Kelly 2003) are indicative of Viking settlement. Given the lack of precision in the dating or rural Irish houses it is still unclear as to whether or not Viking influence was directly responsible for the change from round to rectangular in rural Ireland. Wallace (1992a, 94) is of the opinion that rectangular aisled house was an Irish development adopted and adapted by the Scandinavians. He cites the rectangular houses at Knowth, Co. Meath and Whitefort, Drumaroad, Co. Down (*ibid*. 72) as evidence for his argument. There is no evidence, however, that these buildings pre-date Viking settlement in Ireland and it is just as likely that their design is due to Viking influence.

Wallace proposed that the house form, or building plan, should be the principal mechanism used to establish a classification of buildings (1982a; 1992a, 19). He suggested that the *Hiberno-Scandinavian* buildings from Dublin could be divided into five principal types. To these may be added two other types (6 and 7) which are predominantly found in Waterford (Wallace 2001, 48-9).

Type 1 structures were the most common building that Wallace discovered in his survey of the Dublin evidence. They amounted to 67% of all the buildings examined by Wallace (1992a, 17) in his survey. They were rectangular in plan usually with a doorway at each end and with a floor space divided into three strips which comprised a central nave flanked on either side by narrow bedding area. This type of building appears to have been used throughout the Viking period.

Type 2 buildings were less common and sub-rectangular in plan. They were smaller than Type 1 buildings and did not contain three aisles or often formal hearths (Wallace 1992a, 14). They were often found associated with Type 1 buildings. Less than 6% of Wallace's surveys were Type 2 buildings.

Type 3 class of building was created for shortened and slimmed down versions of the Type 1 building but which did not create evidence for threefold division (Wallace 1992a, 16). They often contained a doorway at either end like the Type 1 building. Slightly more than 6% of Wallace's types were classified as Type 3 buildings. Type 4 class buildings denote those sunken-floored buildings (SFS) which were generally rare in the Irish archaeological record. One example excavated at Winetavern Street was dug into a steep hillside and had an internal walling comprised of earthfast vertical planks (Wallace 1992a, 17). Type 5 buildings dealt with those structures that could be described as small post and wattled huts often sub-rectangular in plan and contained no internal roof supports. Less than 5% of Wallace's surveys were classified as Type 5. They were found in all levels of occupation. Type 6 buildings refer to sill-beam structures with load-bearing walls which appear to have been constructed from the early-twelfth century onwards, particularly in Waterford. Type 7 refers to rectangular stone buildings found within Hiberno-Scandinavian towns. They have also only been found at Waterford and date to the mid twelfth century.

Viking Type 1 Buildings clearly dominate and comprise approximately 300 (or 50%) of the total number of excavated buildings. They have also been discovered outside Dublin in Cork, Wexford and Waterford. Although Type 2 buildings constituted a small percentage of Wallace's (1992a) survey results, they comprised 33% of the total number of building found during the Waterford excavations from 1986-92 (Scully 1997, 37). This does not appear, however, to be an indication of regionalisation, since Type 1 buildings made up a large proportion of the Viking houses excavated in Waterford at Essex Street West (*ibid.*). Type 3 buildings and Type 5 buildings were found principally in Dublin, Waterford and Cork.

The location of different political, economic and industrial activities may have affected the distribution and density of different Viking building types. A small number of sunken-floored buildings have been discovered in the towns of Waterford, Limerick and Dublin. Four were excavated at Waterford and were dated to the late-eleventh century A.D. (Walsh 1997b, 45). Similar structures have been excavated at King John's Castle and date mainly to the twelfth century (Wiggins 1991). An early-eleventh-century example was recorded at Werburgh Street, Dublin (Hayden 2002). They have been compared to ninth/tenth century examples from English towns but do not appear to have been a major feature of the architectural landscape of their Irish counterparts. Suggested sources for their origins include the native Irish souterrain, the Anglo-Saxon *Grübenhauser* tradition of England and parts of northern Europe, and most likely the parallels in English towns (Walsh 1997, 52). With the exception of the tenth-century Winetavern Street example (Wallace 1992a, 17), most date to the twelfth century. Stone-footed and walled buildings appear to have succeeded sill-beam structures in Waterford (Scully 1997, 39), and at least one stone-walled example from Waterford predated the coming of the Anglo-Normans. It is not completely clear if stone was an important resource used for constructing buildings in the other town previous to the coming of the Anglo-Normans.

An unusual early house was discovered at Copper Alley during the excavations at Temple Bar West (Simpson 1999, 9). It was a rectangular structure (7m x 4.5m) and consisted of a

double row of large post holes with a hearth and side entrance (*ibid*.). It did not adhere to any of the Wallace's 'Type' building plans and has been compared to Anglo-Saxon houses in England dating to the late-fifth/early-sixth centuries A.D. Radiocarbon dates suggest that it belonged to between A.D. 780 and 890 (2Σ). If it does date to around A.D. 800, then it could represent evidence for potential Anglo-Saxon contacts that are occasionally indicated in burial practice, art and trade. It is unique in Ireland and its function and origin are still a matter of debate.

Viking and *Hiberno-Scandinavian* Rural Settlement in Ireland, A.D. 800-1100

The question or rural Viking settlement in Ireland is a perplexing one. Did Vikings actually settle in the rural hinterlands of the known Viking urban settlements or were these areas settled by the native Irish, presumably under the control of the Irish. Evidence for this is confined to the Dublin area where there was an area known as *Dyflinarskiri* or 'Dublin-shire'. Bradley (1988; 2010) has concluded that it likely to have extended as far as Lust in the north and Dalkey in the south. To the west it appears to have extended as far as the Dublin/Kildare border. Its boundary is unlikely to have been static and it may have been totally abandoned after the fall of Dublin in 902.

The term *Dyflinarskiri* is found in a number of sagas but there were only committed to writing in the thirteenth century. It is referred to in Egil's saga which is set in the tenth and early eleventh century. Bradley (2010, 43) argues that the term *Dyflinarskiri* can be equated with the Irish terms *Crīth Gall* and *Fine Gall* in the Irish sources. The former appears in the late tenth century while the latter first appears in the eleventh century. Bradley notes that when terms like *Finngaill* and *Findgaill* are used in earlier sources they refer to a people and not a territory. The emergence of such a distinctive territory may reflect the spread of intermarriage outwards into the country from the original urban core.

The archaeological record provides rather limited evidence for the existence for the *Dyflinarskiri*, a problem that is amplified that many artefacts of the period are not good indicators of ethnicity (Bradley 2010, 44). To further complicate matters the distinct Scandinavians of the ninth century had evolved into Hiberno-Scandinavians during the tenth century. Had the crannog at Ballinderry I (Hencken 1936), with its large Hiberno-Scandinavian assemblage of artifacts, been located much closer to Dublin it would be tempting to conclude that it was a Scandinavian rather than native site.

Distinctive ninth/early tenth century Scandinavian burials can be found in a radius of about 5k of the centre of Dublin (Harrison 2001, 65-66). These may not all reflect settlement. The recently found Vikings woman's burial at Finglas seems to have been buried near a monastic site (Sikora 2010, 414) perhaps reflecting the forging of political alliances between via Scandinavian and native through the institution of marriage.

Viking burials outside Dublin tend to be single burials and located along the coast. They may be indicative of nearby settlement but just as easily represent burial from a passing ship. The 25 burials from Cloughmore cave, Co. Kerry, however cannot be explained as easily. They clearly date from the Scandinavian period, approx. ninth-eleventh century. The deposits were mostly disarticulated but accompanied by grave goods, some of which are clearly Scandinavian. Connolly *et al.* (2005, 170) argue that they represent the burials of Scandinavians or Hiberno-Scandinavians who were buried in a pagan fashion. Historical sources suggest the presence of possible Scandinavian *dún* on the Maine river and it may well be that the burials are related to this or a similar site. It is likely that historical sources greatly under represent the degree of Viking settlement in the west of Ireland. Sheehan *et al.* § (2001) consideration of the placename evidence in Kerry, and Kelly's (2010) analysis of potential Scandinavian Settlement in west county Galway both suggest extensive Viking settlement along Ireland's western seaboard.

A potential rural Viking settlement was discovered at Cherrywood, Co. Dublin (Ó Neill 1999, 8-10; 2006). The earliest phase on site was represented by a ring-ditched enclosure,

containing a sixth/seventh century A.D. inhumation cemetery. The second phase consisted of a possible Viking longhouse, with bowed sides, two accompanying structures and a number of pits. A rectangular pit associated with the two undefined structures contained a decorated whalebone plaque. This type of artefact – dated to the ninth or tenth century – has been found associated with burials of Viking women in Orkney Islands (Ritchie 1993, 45). An example recorded as unlocalised by Boe (1940, 98) is said by Harrison (2001, 68) to have come from Islandbride, Co. Dublin. The form of the buildings, along with the artefactual evidence would suggest that this may have been the location of a rural Viking settlement (*ibid.*).

Excavations at Ninch, Co. Meath (McConway 2002) revealed a highly complex multi-phase settlement dating from the fourth to the twelfth century A.D. (Chapter 4). Coarse pottery, a stave-built bucket, a jet bracelet and two ring-pins were recovered from a series of sub-rectangular enclosures constructed in the southern half of the site during the final phase. A ring-pin, with parallels from Viking Dublin dating to the late-tenth/early-eleventh century A.D., was also recovered. It is possible that the final phase of this site may represent a rural Hiberno-Scandinavian settlement. Both Cherrywood and Ninch were located on previously important Early Medieval cemeteries with associated settlement evidence.

With the exception of the *longphuirt* discussed above, there is limited structural evidence for dispersed rural Viking settlement outside *Dyflinarskiri*. Excavation of a sunken rectangular stone-built house overlooking False Bay, Co. Galway revealed a hearth (with animal and fish bone), and a tenth-century double-sided antler comb that could be interpreted as Hiberno-Scandinavian in style (Gibbon and Kelly 2003, 63; Kelly, 2010); O'Sullivan and Breen 2007, 121). The large unenclosed site of Beginish, Co. Kerry may also have had a Scandinavian phase The lintel of a stone-lined passageway in one of the sunken roundhouses was found to have a runic inscription, and possibly Viking artefacts, such as a bowl made of steatite (soapstone), and Hiberno-Scandinavian ringed pins, were also found on site (O'Kelly 1956, 177). Sheehan *et al.* (2001, 111) have speculated that this site may have been used as a way station for mariners sailing from Hiberno-Scandinavian Cork to Limerick in the later part of the early medieval period. The place-name of 'Smerwick Bay' has been suggested as meaning 'Butter Bay' in Old Norse and many attest to further Viking associations with the southwest coast – although again there are alternative interpretations (Edwards 1990, 191).

At Bray Head, Valentia Island, Co. Kerry, an unusual, sub-rectangular, bow-sided building whose walls consisted of regularly-spaced large posts, overlay an early medieval circular house, and was in turn succeeded by a late medieval stone-walled house. The excavator suggests that this building might be of Viking origin (Hayden 2000:0423). A similarly located (i.e. coastal) 'cashel' at Rinnaraw, Co. Donegal, produced a house that might also be argued to show Norse influences. The aisled stone-built house, with internal roof supports dated to *circa* the ninth century, was compared to similar Scandinavian examples with rounded external corners at the Orkney Islands (Fanning 1988:0011; Comber 2006, 107). Both the historical sources and further ninth century Scandinavian stray-find objects in the general area around Sheephaven Bay (Ir. '*Cuan na gCaorach*' = 'Shiphaven' =? Old Norse '*Skiphǫfn*') support the idea that the northwest coast was an area of importance to the Vikings.

A couple of potential later-Viking, or Hiberno-Scandinavian, sites have also been excavated in Co. Waterford. A rectangular enclosure located on a coastal promontory at Shandon, Co. Waterford (Dennehy 2001:1242; Elder 2002:1790) produced a tenth-century Hiberno-Scandinavian bone trial-motif piece during quarrying in the 1930s, as well as an eleventh-century coin from Dublin (Elder 2002:1790) leading to speculation that it was the site of a Viking base. Finds recovered during excavation between 2000 and 2002 included iron pins, several iron knives and a copper ingot, but none of which are diagnostically Viking.

Viking hoards and artifacts, particularly weapons, have been found across much or Ireland. Ó Floinn (1998, 151) indicates that the majority of non-hoard material is concentrated in north Leinster with smaller concentrations in north Minster and around Limerick. The hoard

evidence (Sheehan 1998, 174) again emphasises the importance of Leinster with a more scattered distribution in Munster and eastern Ulster. It is most likely that most of these represent trade with the native Irish rather than Scandinavian settlement.

Conclusion

The transitional Iron Age/early medieval period (i.e. fifth to seventh centuries A.D.) is still poorly understood, although an increasing number of sites, particularly those containing early burials, have been discovered from this period. Early medieval rural settlement in the tenth to twelfth centuries is also poorly understood. Although the majority of recent studies have examined the archaeology of early Hiberno-Scandinavian towns (Wallace 1985a; Hurley 1988; Hurley *et al*. 1997), the situation in the contemporary rural Irish landscape is less clear. Recent excavations have produced a number of enclosures that were radiocarbon dated to this period, but their relationships to each other and to the surrounding landscape have not yet been fully resolved.

In contrast the early medieval period between the sixth and the ninth centuries A.D. is potentially the most researched phase in Irish archaeology. The character and organisation of houses, dwellings, settlement enclosures (including raths and crannogs), churches and ecclesiastical sites in this period appear to be fairly well understood. Industrial activities and trade are recognised, and much has been made of the contemporary cattle-based economy with its concomitant society based around reciprocity and clientship.

Early medieval raths were the physically bounded, enclosed dwelling places of particular social units – i.e. extended families. In many cases rath banks-and-ditches were back-filled, re-cut or modified over the generations, so that these enclosures also became places associated with the past, with ancestors and the family. In other cases, the building of a rath may have been an event associated with a particular person. Multivallate raths signalled, by their architecture, the ability of the powerful to gather resources and a labour force to construct his residence. The building and use of raths that emerges as a phenomenon in the sixth/seventh century may largely be something that emerges out of a period of radical social change. Population increase, an economic 'boom' in agriculture, and other political, social and ideological changes may have led to an increased need within early Irish society to closely and signal define the extended family (as opposed to the community) social unit through architecture.

While the majority of sites may have functioned as farmsteads, the highly stratified nature of contemporary Irish society suggests raths would also have represented differences in the social hierarchy. It seems obvious that multivallate sites were of higher status than the smaller univallate examples. The old Irish law tracts do not explicitly outline a correlation between status and the number of enclosures in a rath, but the archaeological evidence often demonstrates such stratification on the basis of the artefactual evidence. Fine metal-working, which can be interpreted as evidence of artistic patronage by the higher levels of society, tends to be feature of excavated multivallate raths such as Garranes, Co. Cork (Ó Ríordáin 1942, 134-39) and Ballycatteen, Co. Cork (Ó Ríordáin and Hartnett 1943, 35), but is generally absent from univallate sites (with the exception Garryduff, Co. Cork where there was extensive evidence (O'Kelly 1963, 95-99)). The presence of glass vessels (*ibid*. 77) and relatively large quantities of imported pottery (*ibid*. 103-12) provide further evidence that Garryduff was a high status site. There is, however, substantial evidence for 'every-day' iron-working on univallate raths, as well as on crannogs and non-circular enclosures (Chapter 6), suggesting that these sites were largely self-sustaining.

Settlement enclosures dating to the second half of the first millennium A.D. have been identified in increasing numbers within the archaeological record (Kinsella 2010). It is still not completely clear if they represent a new settlement type with their own unique origin, or if instead they represent a different way of building a rath, or rath. Settlement enclosures which have been previously described in the archaeological record as raths need to be systematically re-evaluated and re-examined to understand how prevalent these sites are and

whether they exhibit a particular range of material-culture or convey any distinct preferences for topographical location.

Stratigraphical relationships and radiocarbon dates suggest that souterrains often date to the final phases of raths and enclosure sites (Clinton 2001, 204). Previous surveys by Buckley (1988) and Clinton (2001, 45) found that isolated souterrain sites often constituted over 50% of the total number of excavated sites, and it is possible that souterrains should be viewed as an independent form of monument whose role was re-defined following the decline of enclosed settlements.

There is now a large corpus of evidence available for both enclosed and unenclosed early medieval rural settlement. Potential new sites have emerged in the archaeological record further highlighting the complicated and diverse nature of settlement across the island during this period. There are indicators of continuity in settlement location between the Iron Age and the early medieval period, but changes in site morphology. The sub-circular rath may have dominated the sixth, seventh and eighth century records, but non-circular enclosures appear to have been the predominant form of settlement in the latter part of the first millennium. Many theories have been advanced to support the existence of pre-Norman feudalism (or proto-feudalism), but the archaeological evidence for this has been difficult to identify.

It is evident that the settlement pattern and organization of rural society in Ireland from A.D. 400-1150 is more complex than previously considered. The role of unenclosed settlement needs still to be resolved, and it is still unclear how the morphological and typological changes identified in the archaeological resource should be interpreted in the light of social re-organization, economic development and political upheaval.

Table 3.1: Excavated Cashels

Name	Morphology	Reference
Ballyegan, Co. Kerry	Univallate	Byrne 1991
Ballynavenouragh, Co. Kerry	Univallate	Monk 1998 (mentioned in)
Barrees Valley,Co. Cork	Univallate	O'Brien 2002:0238; 2003:0174; O'Brien 2009
Cahercommaun Fort, Tullycommon, Co. Clare	Multivallate	Hencken 1938; Cotter 1999
Caherconnell, Co. Clare	Univallate	Comber and Hull 2008
Cahergal, Co. Kerry	Univallate	Manning 1986:0031; 1990:0067; 1991:0070
Cahirvagliair, Cappeen West, Co. Cork	Univallate	Manning 1987-8
Carn, Co. Fermanagh	Univallate	Brannon 1981-2b
Carraig Aille I, Co. Limerick	Univallate	Ó Ríordáin 1949a
Carraig Aille 2, Co. Limerick	Univallate	Ó Ríordáin 1949a
Carrigillihy, Co. Cork	Univallate	O'Kelly 1951
Carrowdotia (AR 25), Co. Clare	Univallate	Collins 2002:0137; Taylor 2003:0090; Hull and Taylor 2005
Carrowdotia (M27), Co. Clare	Univallate	Collins 2002:0139; Taylor 2003:0089; Hull and Taylor 2005
Cathair Fionnúrach, Ballynavenoor, Co. Kerry	Univallate	Gibbons 1994:0116; 1997:0228
Cathair Mor, Ballycarnlabban,Co. Clare	Univallate	Fitzpatrick 2001
Deerfin Lower, Co. Antrim	Univallate	Bratt 1975:0004
Dunamase Rock, Co. Laois	Multivallate	Hodkinson 1995; Hodkinson 1994:0144; 1995:0176; 1997:0315
Dún Aonghasa, Inishmore, Co. Galway	Multivallate	Cotter 1992:0093; 1993:0112; 1994:0111; 1995:0125.
Dún Eoghanachta, Inishmore, Co. Galway	Univallate	Cotter 1995:0117
Farranablake East (Site 2.6), Co. Galway	Univallate	Janes 2005:0596
Feltrim Hill, Co. Dublin	Univallate	Hartnett & Eogan 1964
Glenbaun, Co. Mayo	Univallate	Grant 1992:0144; 1993:0175
Gragan West, Co. Clare	Univallate	Cotter 1988:0004
Kildreenagh, Loher, Co. Kerry	Univallate	O'Flaherty 1985:0034
Larrybane, Co. Antrim	Promontory Fort	Childe 1936; Proudfoot & Wilson 1961-62
Lecanabuaile, Kimego West, Co. Kerry	Univallate	Ó Ríordáin & Foy 1941
Lismagunshin, Co. Monaghan	Univallate	Coughlan 2005:1276
Lissachiggel, Doolargy, Co. Louth	Univallate	Davies 1939
Loher, Co. Kerry	Univallate	O'Flaherty 1985:34
Mullaboy, Co. Louth	Bivallate	Tempest 1933
Rinnaraw, Co. Donegal	Univallate	Fanning 1987:0011;1988:0011; 1989:0019; 1990:0025; 1992:0032; Comber 2006
Ryan, Co. Down	Univallate	Williams 1987:0014
Whitefort, Drumaroad, Co. Louth	Univallate	Waterman 1956a

Table 3.2: Excavated Raths

Name	Morphology	Reference
Abbeytown, Co. Sligo	Univallate	Wiggins 2004:1486
Aghadegnan, Co. Longford	Univallate	Carroll 1991:0091; Carroll 1993:0152
Aghtaboy, Co. Mayo	Univallate	Morahan 1998:0474
Altanagh, Co. Tyrone	Univallate	Williams 1986
Annagloor, Co. Cork	Univallate (Exc. Souterrain)	Walsh 1964
Antiville, Co. Antrim	Enclosing Ditch	Waterman 1971a
Antrim, Co. Antrim	Bivallate	MacManus 2003:0001
Ardbraccan 2, Co. Meath	Univallate	Fairburn 2004:1158
Ardcloon, Co. Mayo	Univallate	Rynne 1956
Ashfort, Co. Limerick		Gahan 1997:0324; Gahan 1998:0376
Aughnamullan, Co. Antrim	Multivallate	McSparron 2000:0021

Name	Morphology	Reference
Balgatheran 1, Co. Louth	Bivallate	Chapple 2000:0638
Ballaghderg, Co. Donegal	Univallate	O'Hara 2005:0315
Ballaghkeeran Little, Co. Westmeath	Univallate? (Promontory Fort)	Fanning 1983
Ballinamona, Co. Limerick	Rectangular Platform	Ó Ríordáin 1936
Ballindeasig, Co. Cork	Univallate	Breen 1993:0016
Ballingarry Down, Co. Limerick	Platform with motte	Hunt 1951
Ballingoola 3, Co. Limerick	Univallate	Ó Ríordáin 1949b
Ballingoola 4, Co. Limerick	Univallate	Ó Ríordáin 1949b
Ballinlassa, Co. Mayo	Univallate	King 2003:1300
Ballinvinny South, Co. Cork	Univallate	Cotter 2000:0112
Ballyaghagan, Co. Antrim	Univallate	Evans 1950; Proudfoot 1958
Ballybrit, Co. Galway	Univallate	Waddell 1971
Ballybrolly, Co. Armagh	Multivallate	Lynn 1983a
Ballybunion, Co. Kerry	?	McCarthy 1999:0318
Ballycasey Beg, Co. Clare	Univallate	Carey 2000:0043
Ballycasey More, Co. Clare	Univallate	Murphy 2001:0045; O'Neill 2002:0079
Ballycatteen, Co. Cork	Trivallate	Ó Ríordáin & Hartnett 1943
Ballyconneely, Co. Clare	Univallate	Breen 2000:0046; Breen 2000:0047
Ballycummin, Co. Limerick	Bivallate?	McConway 1996:0234
Ballyduff, Co. Limerick	Bivallate	Cleary 1987
Ballyfounder, Co. Down	Platform & motte	Waterman 1958b
Ballygortgarve, Co. Antrim	Univallate	Lynn 1978c
Ballyhamage, Co. Antrim	Possible Enclosure	Crothers 2003:0004
Ballyhenry I, Co. Antrim	Platform	Lynn 1983d
Ballyhenry II, Co. Antrim	Platform	Lynn 1983d
Ballyhill Lower, Co. Antrim	Univallate?	Williams 1985:0002
Ballykennedy, Co. Antrim	Univallate enclosure	Brannon 1980b
Ballykillmurry, Co. Waterford	Univallate	Mongey 1933; Mongey 1934
Ballyknockan, Co. Wicklow	Univallate	Macalister 1943
Ballylacky, Co. Antrim	Bivallate	Cited in Comber 2008, 225
Ballylanders, Co. Limerick	?	Cited in Comber 2008, 227
Ballylessan, Co. Down	?	Collins 1970:0013
Ballymacash, Co. Antrim	Univallate/Bivallate?	Jope and Ivens 1998
Ballymagarry, Co. Antrim	Univallate	Evans 1952
Ballymascanlan, Co. Louth	Univallate?	Campbell 1996:0258
Ballymount Great, Co. Dublin	Univallate?	Stout 1982a; 1982b; Conway 1997:0079 Ó Néill 2000:0205; 2002:0462
Ballymurphy, Co. Antrim	Platform	Lynn 1977-79:0003
Ballynacarriga 1 & 2, Co. Cork	Double Enclosure	Noonan 2001:0115; 2001:0116
Ballynagallagh, Co. Limerick	Univallate with Palisade	Cleary 2006
Ballynarry, Co. Down	Platform	Davison 1961-62
Ballynoe, Co. Antrim	Multivallate?	Lynn 1980a
Ballypalady 2, Co. Antrim	Multivallate	Waterman 1972
Ballypalady 3, Co. Antrim	Bivallate	Waterman 1972
Ballyrobert, Co. Cork	Trivallate	Power 1980-84:0045
Ballyroney, Co. Down	Raised?	Waterman 1955
Ballyshanagill, Co. Antrim	Univallate	Halpin 1990:0002; 1991:0003
Ballysillan Lower, Co. Antrim	'Mound' Destroyed	Evans 1952
Ballyvalley, Co. Down	Univallate	Reilly 1998:0113
Ballyvally ('Beal Boru'), Co. Clare	Univallate and motte	O'Kelly 1962
Ballyvanran, Co. Tipperary	Multivallate	O'Sullivan 1990:0100; 1991:0115
Ballyvas, Co. Kildare	Univallate	Doyle 2007:0760
Ballyvollen, Co. Antrim	Cropmark	Williams 1985b
Ballywee, Co. Antrim	Conjoined	Lynn 1988c, 32-35; Crothers 1993:0002; 1994:0006
Ballywillwill 1, Co. Down	Bivallate	Waterman & Collins 1952; McCormick & Murray 2005:0352
Ballywillwill 2, Co. Down	Univallate	Waterman & Collins 1952
Banduff, Co. Cork	Univallate	Lane 1999:0077
Baronstown, Co. Meath	Multivallate with annexes and field	Linnane & Kinsella 2007; 2009

Name	Morphology	Reference
	enclosures	
Baunogephlure, Co. Carlow	Trivallate	Stafford 2005:0067
Bellaghy Bawn, Co. Londonderry	Univallate?	Brannon 1989:0015; 1990:0024; Hurl 1995:0042
Betaghstown, Co. Meath	Enclosures	Lehane 2004:1187; Murphy 2005:1158
Big Glebe, Co. Londonderry	Raised	Bratt and Lynn 1976:0012; Lynn 1988e
Blackchurch 48, Co. Kildare	Enclosures	Delaney 2003:0885; Duffy 2003:0880; 2004:0800
Blanchfieldsland (Leggetsrath), Co. Kilkenny	Multivallate	Lennon 2004:0868 Lennon 2006
Boho, Co. Fermanagh	Univallate	Proudfoot 1953
Boscabell 20, Co. Tipperary	Univallate	Kavanagh 2003:1705
Bowling Green, Co. Tipperary	Univallate	Fanning 1970a
Brackenagh East, Co. Down	Univallate	Gilmore 2001:0304
Brigown, Co. Cork	Univallate	O'Callaghan 2003:0176; Carroll 2003:0178
British and Seacash, Co. Antrim	Raised	Crothers 1998:0004
Brokerstown, Co. Antrim	Conjoined	Dunlop 2007:0054
Burgage More, Co. Wicklow	Bivallate	Macalister 1943
Caheravart, Co. Cork	Univallate	Lane 1999:0082
Cahernalee, Co. Galway	Univallate?	Quinn 2002:0716
Cahircalla More, Co. Clare	Univallate	Taylor 2004:0141
Carn More, Faughart, Co. Louth	Univallate	Delaney 2003:1272
Carnalbanagh East, Co. Down	Multivallate	Brannon 1979a
Carnlough North, Co. Antrim	Univallate	Hamond 1980-84:0013
Carnmeen, Co. Down	Univallate	Masser & Dalland 2007:0388
Carnmoney, Co. Antrim	Bivallate	Avery 1970:0001
Carr, Co. Tyrone	Raised	McErlean 1980-84:0180
Carrigaline Middle, Co. Cork	Univallate?	Sherlock 2001:0130; 2002:0246
Carrigrohane, Co. Cork	Bivallate	Moloney 2003:0188
Carrowgobbadagh, Co. Sligo	Univallate	Opie 1995:0246
Carrowkeel, Co. Mayo	Univallate	Zajac 2002:1382; 2003:1307
Carryduff (Queen's Fort), Co. Down	Bivallate	Jope 1966
Castlefarm, Co. Meath	Univallate with annex	O'Connell 2006; 2009a
Castlegar, Co. Mayo	Univallate	Zajac 1999:0653; Zajac & Scully 2004
Castlelands, Co. Cork	Univallate	Purcell 2000:0146; 2001:0205
Castleskreen 1, Co. Down	Univallate	Dickinson & Waterman 1960
Castleskreen 2, Co. Down	Univallate with motte	Dickinson & Waterman 1959
Castlewidenham, Co. Cork	Bivallate?	Ní Loingsigh 2003:0201
Cavanapole, Co. Cavan	Enclosure Ditch?	Crothers 1996:0015
Chapeltown, Co. Carlow	Enclosure site	Henry 2004:0086
Cherrywood, Co. Dublin	Enclosed Scandinavian site?	Ó Néill 1999; 2006 Ó Néill 1999:0169
Clasheen, Co. Kerry	Bivallate	Connolly 1993:0119
Cloghabrody, Co. Kilkenny	Multivallate	Moloney 2003:0989
Clogher, Co. Tyrone	Univallate	Warner 1973; 1979; 2000
Clonee Lower, Co. Wexford	Univallate?	Bennett 1991:0131
Cloongownagh, Co. Roscommon	Univallate	Henry 1999:0765; Lennon 2000:0849
Coldwinter, Co. Dublin	Multivallate?	Opie 2001:344
Colp West, Co. Meath	Univallate with annexes	Murphy 2000:0748; Clarke & Murphy 2001:0952
Conva, Co. Cork	Bivallate with annex	Doody 1992:0021; Doody 1995, 12-38.
Cookstown, Co. Meath	Univallate	Clutterbuck 2004:1211
Coolaholloga, Site A1, Co. Tipperary	Two enclosures	Murphy 2000:0935
Coolcran, Co. Fermanagh	Univallate	Williams 1985a
Coolowen, Co. Cork	Univallate	Twohig 1975
Coonagh West, Co. Limerick	Univallate	Hull 2004:0999; Taylor & Ruttle 2005:0975; Taylor 2007

Name	Morphology	Reference
Coraliss, Co. Cork	Hearth outside enclosure	Cleary 1993:020
Corliss, Co. Armagh	Bivallate	Davies 1940
Cormeen, Co. Meath	Univallate	McConway & Halpin 1992:0150
Corrin 1, Co. Cork	Univallate	O'Connell 2003:0240
Craigaphuile, Co. Down	?	Collins 1959b
Cregg, Co. Sligo	Univallate	Halpin 1999:0788
Croft Road, Co. Down	Univallate?	Proudfoot 1959
Croom East, Co. Limerick	Univallate	Shee-Twohig 1974:0030; Shee-Twohig 1977
Croom, Co. Cork	?	Cited in Comber 2008, 226
Croom, Site 7, Co. Limerick	Bivallate? With annex	Breen 1997:0336; Fitzpatrick 1999:0499
Crossnacreevy, Co. Down	Univallate	Harper 1971:0012 Harper 1973-4
Curraheen 1, Co. Cork	Univallate with annex	Danaher 2002:0296
Cush, Co. Limerick	Enclosure Complex	Ó Ríordáin 1940
Dalkey, Co. Dublin	Promontory Fort	Liversage 1968
Deer Park Farms, Co. Antrim	Univallate and Raised	Lynn 1987a & b; 1988f
Derrymore, Co. Armagh	Univallate	Halpin 2000:0025
Doon, Co. Londonderry	?	McCourt Unpublished
Dowdallshill, Co. Louth	Univallate	Channing 1994:0169
Dowdstown 2, Co. Meath	Univallate with field system	Deevy 2005, 83-92; Deevy 2006, 10-11; Cagney and O'Hara 2009
Dressogagh, Co. Antrim	Univallate	Collins 1966
Dromore, Co. Antrim	Platform	Collins 1968
Dromthacker 1, Co. Kerry	Univallate	Cleary 2008
Dromthacker 2, Co. Kerry	Univallate	Cleary 2008
Drumadoon, Co. Antrim	Raised	McSparron & Williams 2004; 2009
Drumbroneth, Co. Down	Univallate	Brannon 1980c
Drumbroneth, Co. Down	Univallate	Halpin 1997:0073
Drumee, Co. Fermanagh	Platform	Warhurst 1967
Drumfin, Co. Armagh	Univallate	Crothers 2004:0043
Dunbell 5, Co. Kilkenny	Univallate	Cassidy 1991
Dunbell 6, Co. Kilkenny	Univallate	Foley 1972:0020; Foley 2006
Dundrum Castle, Co. Down	Limited Evidence	Waterman 1951; 1958c
Duneight, Co. Down	Bivallate & Motte	Waterman 1963b
Dunnyneil Island, Co. Down	Coastal Promontory Fort	McCormick & Macdonald 2002:0441, 2003:0443; McCormick & Macdonald 2004; 2010
Dunsilly, Co. Antrim	Univallate & Motte	McNeill 1991-92
Duntryleague, Co. Limerick	Raised	Ó Ríordáin 1936
Emlagh West, Co. Kerry	Possible Enclosure	Connolly 1993:0122
Fahan (Dunbeg), Co. Kerry	Multivallate Promontory Fort	Barry 1981
Fanningstown, Co. Limerick	'Earthwork enclosure'	Gracie 1997:0340; Collins 1999:0501
Farrandreg, Co. Louth	Souterrain associated with cropmark	Murphy 1998
Ferns, Co. Wexford	Multivallate?	Ryan 1999:0875
Finkiltagh, Co. Antrim	Platform	Williams 1973:0003
Garranebane, Co. Kerry	Univallate	Dunne 1998:0275
Garranes, Co. Cork	Trivallate	Ó Ríordáin 1942a; O'Donnell 1991:0022
Garryduff 2, Co. Cork	Univallate	O'Kelly 1963
Garryduff I, Co. Cork	Univallate	O'Kelly 1963
Garrynamona, Co. Clare	Platform	Rynne 1964
Garryntemple, Co. Tipperary	Levelled	Cleary *et al.* 1987
Gartree (*Langford Lodge*), Co. Antrim	Raised	Waterman 1963a
Glanbane (*Lisdarrig*), Co. Kerry	Univallate	O'Callaghan 2004:0753
Glanturkin, Co. Cork	Univallate	O'Flaherty 1982
Glebe, Site 43, Co. Dublin	Univallate with field systems	Seaver 2004; Seaver 2005a
Glencull, Co. Tyrone	?	Collins 1960a

Name	Morphology	Reference
Glengormley, Co. Antrim	Destroyed Enclosure	Brannon 1986:0005
Glenkeen North, Co. Londonderry	Bivallate	Waterman 1967a
Glenkeen South, Co. Londonderry	Univallate	Waterman 1967a
Glenloughan, Co. Down	?	Proudfoot 1970, 47
Gortatlea, Co. Kerry	Univallate	Connolly 2000:0434; 2001:0569; 2001:0571; 2001:0572
Gorteen, Co. Westmeath	Platform	Prendergast 1959
Grange, Baldoyle, Co. Dublin	Univallate	Elder 2004:0453
Grange, Co. Limerick	Univallate	Ó Ríordáin 1949b
Grange/Nangor, Co. Dublin	Enclosure	McConway 1996:0068; 1997:0086; O'Brien 1997:0087; Doyle 2005
Gransha, Co. Down	Raised	Lynn 1985
Haggardstown, Co. Louth	Univallate	Campbell 1994:0180
Haggardstown, Co. Louth	Univallate?	McConway 1995:0220
Haggardstown, Co. Louth	Multivallate enclosure?	Moore 2001:0858
Hillsborough Fort, Co. Down	Univallate?	Gaskell-Brown & Brannnon 1978
Hughes Lot East/Kilscobin, Co. Tipperary	Bivallate	Fairburn 2003:1759
Inch/Ballyrenan, Co. Down	Univallate	McQuillan 1999:0151
Inch;Ballyrenan, Co. Down	Univallate	MacManus 1997:0074; MacManus 1998:0114
Irish Grange, Co. Louth	?	Tempest 1933
Johnstown 15, Co. Meath	Univallate?	Cotter 2004:1253
Kilbane, Co. Limerick	Bivallate	Hayes 2002:1186; 2003:1148; Purcell 2004:1007; 2004:1008
Kilcarn, Athlumney, Co. Meath	Ditches associated with enclosure	Jones 1999:0701
Kilcloghans, Co. Galway	Univallate	McKinstry & Madigan 2007:0637
Killanully, Co. Cork	Univallate	Mount 1995
Killarn, Co. Down	Univallate	Boal and Moffit 1959
Killeenyarda, Holycross, Co. Tipperary	Univallate	Stevens 1999:0828; Elder 1999:0829
Killeeshal, Co. Carlow	Univallate?	Tierney 2004:0082
Killemly, Cahir, Co. Tipperary	'Two enclosures'	Henry 1999:0815
Killickaweeny, Co. Kildare	Univallate	Walsh 2002:0924; Walsh & Harrison 2003; Walsh 2008
Killybegs Road, Co. Antrim	Raised? & motte	McSparron 1998:0002
Killycanavan Lower, Co. Tyrone	?	McErlean Unpublished
Killyglen, Co. Antrim	Platform	Waterman 1968
Killygreagh, Co. Antrim	?	Lynn 1980-84:0108
Killylane, Co. Antrim	Enclosures	Williams & Yates 1984
Killyliss, Co. Tyrone	Univallate	Ivens 1984a
Kilmore Upper, Co. Tipperary	Bivallate	Hodkinson 2000:0949
Kilmurry, Co. Kilkenny	'Two enclosures'	Carroll 2003:1034
Kilscobin 25(iv), Co. Tipperary	Univallate	Kavanagh 2003:1765
Kiltierney, Co. Fermanagh	Univallate?	Williams 1975:0018
Knockea, Co. Limerick	Platform	O'Kelly 1967
Knowth, Co. Meath	1st Phase: Bivallate Raised Enclosure	Eogan 1968; 1974; 1977
Lackan (Quinn's Rath), Co. Wicklow	Raised	O'Connor 1944
Lackan (Rath na Frishtawn), Co. Wicklow	Univallate	O'Connor 1944
Lackan (Tobin's Rath), Co. Wicklow	Univallate	O'Connor 1944
Lackan, Multyfarnham, Co. Westmeath	Univallate	Desmond 1999:0872; Elliott 2001:1287
Lahard, Co. Kerry	Bivallate	Connolly 1994:0127
Leck, Co. Londonderry	Univallate Conjoined	Waterman 1967a
Letterkeen, Co. Mayo	Univallate	Ó Ríordáin 1951; Ó Ríordáin and MacDermott 1952
Leyland Road, Ballycastle, Co. Antrim	Univallate?	Gahan 2001:0003
Lisanisk 2, Co. Monaghan	Bivallate	Coughlan 2003:1490
Liscahane, Co. Cork	Univallate	Ó Donnabháin 1980-84:0060; Ó Donnabháin 1983
'Lisdana Fort', Co. Limerick	Univallate	Stevens 2000:0572

Name	Morphology	Reference
Lisdoo, Co. Fermanagh	Bivallate	Brannon 1981-2a
Lisdrumchor Upper, Co. Antrim	Platform	Collins 1971:0008
Lisduggan North 1, Co. Cork	Univallate	Twohig and O'Kelly 1972; Twohig 1990
Lisduggan North 2, Co. Cork	Univallate	Twohig and O'Kelly 1972; Twohig 1990
Lisduggan North 3, Co. Cork	Univallate	Twohig and O'Kelly 1972; Twohig 1990
Lislackagh, Co. Mayo	Univallate	Walsh 1992:0146
Lisleagh 1, Co. Cork	Bivallate	Monk 1988; 1995
Lisleagh 2, Co. Cork	Univallate	Monk 1991:0026; Monk 1995
Lislear, Co. Tyrone	Univallate	Ivens and Simpson 1988
Lismahon, Co. Down	Raised	Waterman 1959c
Lismurphy, Co. Derry	Raised	Lynn 1980b
Lisnagade, Co. Down	Trivallate with annex	Jope 1966
Lisnagun, Co. Cork	Univallate	O'Sullivan, J. *et al*. 1998
Lissue and Knockmore, Co. Antrim	Univallate	Nicol 2006:0101
Lissue, Co. Antrim	Univallate	Bersu 1947
Loughnafina, Co. Tipperary	Raised?	Henry 1998:0617
Lough-na-Trosk, Co. Antrim	Univallate?	Woodman 1980-84:0026
Lusk,Co. Dublin	Univallate	Giacometti 2006, 36-39.
Mackney, Co. Galway	Univallate	Delaney 2009
Magheraboy, Co. Sligo	Univallate	Ryan 2001:1171
Marshes Upper, Site 5, Co. Louth	Univallate	McCormick & Crone 2000
Maynetown, Co. Dublin	Univallate	Wallace 2000:0328
Meadowbank, Co. Antrim	Raised	Halpin & Crothers 1995:007
Meanus, Co. Kerry	Possible enclosure	Tierney 1998:0283
Millockstown, Co. Louth	Multivallate?	Manning 1986
Monadreela, Co. Tipperary	'Curvilinear Ditches'	Lennon 2002:1744
Moneygurney, Co. Cork	Univallate	McClatchie 1999:0119
Mount Sandel, Co. Londonderry	Raised	Woodman 1974:0011; 1976:0015
Mountaintop, Co. Donegal	Univallate?	Stephenson 2002:0430
Moyne, Co. Mayo	'Faint Circle' in ecclesiastical site?	Manning 1987
Mullaghbane, Co. Tyrone	Univallate	Harper 1972a
Mullaghharlin; Haggardstown, Co. Louth	Enclosure site and souterrain	Gahan 1998:0469; McLoughlin 1999:0610; Moore 1998:0468
Narraghmore, Co. Kildare	Multivallate	Fanning 1972
Newtown, Co. Limerick	Univallate	Coyne 2001:0079; Coyne 2005; 2006a; Coyne and Collins 2003
Newtownbalregan, Co. Louth	Univallate	Bayley 2003:1286
Old Road, Cashel, Co. Tipperary	Univallate	Moran 1997:0488; 1998:0598
Oldcourt, Co. Cork	Univallate	Murphy and Ó Cuileanáin 1961
Petitswood, Co. Westmeath	Univallate	Channing 1992:0179
Phromphstown 1, Co. Dublin	Univallate?	Byrne 2002:0643
Phromphstown 2, Co. Dublin	Bivallate?	Byrne 2002:0644
Piper's Fort, Co. Down	'Mound'	Waterman 1959b
Platin, Co. Meath	2nd Phase: Promontory fort	Conway 2001:1019; Lynch 2000:0774; 2001:1022
Poleglass, Co. Antrim	Univallate	Harper 1971:0006
Pollardstown, Co. Kildare	Bivallate?	Fanning 1973-4
Portnashanagan 1, Co. Westmeath	Univallate	Keeley 1990:0116; Opie 1993:0221
Posseckstown, Co. Meath	Trivallate	Meenan 2003:1447
Poulacapple, Co. Tipperary	Univallate	Reynolds 1972:0030
Pubble Rath, Co. Tyrone	Univallate?	Gilmore 2003:1848
Raheens 1, Co. Cork	Univallate	Lennon 1993
Raheens 2, Co. Cork	Univallate	Lennon 1994
Raholp 1, Co. Down	Raised	Collins 1959b
Raholp 2, Co. Down	?	Collins 1959b
Rathbeg, Co. Antrim	Univallate	Warhurst 1969
Rathcolman, Co. Westmeath	?	Hayden 2003:2002
Rathdown Upper, Co. Wicklow	Univallate?	Halpin 1994:0232

Name	Morphology	Reference
Rathduff, Golden, Co. Tipperary	Cropmark enclosure	Joubert 2000:0941
Rathgurreen, Co. Galway	Bivallate	Comber 2002
Rathmullan, Co. Down	Univallate with motte	Lynn 1981-2
Ringmackilroy, Co. Donegal	Univallate	Crothers 1992:0037
Rinville West, Co. Galway	Univallate	Ó Faoláin 1992:0094
Rockfield, Co. Mayo	Univallate	King 2001:0924
Roestown, Co. Meath	Univallate	O'Hara 2007; 2009a
Rosanna Lower, Co. Wicklow	Univallate	Kieran 2001:1385 2002:1989
Rosepark, Co. Dublin	Multivallate	Baker & Swan 1999:0162; Baker 1999:0163; Carroll 2000:0209; 2001:0334; Carroll 2008.
Sallagh Fort, Co. Antrim	?	Davies 1938c
Sallymount, Co. Limerick	Univallate	Long 2007:1149
Scholarstown, Co. Dublin	Univallate	Keeley 1985:0026
Scrahane, Co. Kerry	Bivallate	O'Donnell 1997:0246; 1998:0284
Seacash, Co. Antrim	Univallate	Lynn 1978b
Seafin, Co. Down	Univallate	Waterman 1955
Sessiaghmagroll, Co. Tyrone	Univallate	Davies 1938a
Shandon, Dungarvan, Co. Waterford	Univallate Coastal enclosure	Murphy 2000:0990; Elder 2001:1241; 2002:1790; Dennehy 2001:1242
Shane's Castle, Co. Antrim	Univallate	Warhurst 1971
Sheephouse, Co. Meath	?	Moore 2001:1055
Sheepwalk Co. Roscommon		Killeen 1989:0084
Shewis, Co. Armagh	Univallate	Brannon 1980d
Shinnagh, Co. Kerry	Univallate	Kiely 2001:0583
Simonstown, Co. Meath	Univallate	Kelly 1975:0033
Skahanagh North, 3, Co. Cork	Univallate	Murphy 2002:0347
Slugarry, Co. Limerick	Bivallate	Shee-Twohig 1974:0029 Shee-Twohig 2000
Spittle Ballee, Co. Down	Univallate	Waterman 1958a
Srowland, Co. Kildare	Bivallate	Desmond 2007:0859
Tamlaght, Co. Tyrone	Univallate?	Foley 1980-84:0191
Thady's Fort, Co. Clare	Bivallate	Rynne 1964
Togherstown, Co. Westmeath	Bivallate	Macalister & Praeger 1931
Townparks, Tuam, Co. Galway	Univallate?	Crumlish 1995:0127
Tullahedy, Co. Tipperary	Univallate	Murphy 2000:0969
Tully, Co. Antrim	Raised	Harper 1970:0003
Tully, Co. Tyrone	Rath?	Ivens 1985
Tullyallan, Co. Armagh	Univallate	Collins 1971:0009
Tulsk, Co. Roscommon	Platform	Brady and Gibson 2005
Turnarobert, Co. Antrim	Univallate	Williams 1991:0011
Turoe (Feerwore), Co. Galway	Univallate	Raftery 1944
Uisneach, Co. Westmeath	Figure of eight shaped earthwork	Macalister & Praeger 1928; Schot 2006
Urney, Co. Tyrone	Univallate	Scott 1970:0034; 1971:0034
Whiterath 2, Co. Louth	Bivallate	Ó Drisceoil 2000:0721
Whiteriver/Gunstown, Co. Louth	Enclosure with annex?	Bolger 2004:1128; McConway 2004:1129
Woodstown 6, Co. Waterford	Multivallate (Viking longport)	O'Brien and Russell 2004; 2005; McNamara 2005

Table 3.3: Excavated Crannogs

Name	Year	Reference
Ballinderry 1, Co. Westmeath	1932	Hencken 1936
Ballinderry 2, Co. Offaly	1933	Hencken 1942
Ballykean, Co. Offaly	2003	Turrell and Whitaker 2007, 4
Ballywillin, Lough Kinale, Co. Longford	2002	Fredengren 2002a; 2002b.
Bofeenaun, Co. Mayo	1992	Lawless 1992; Moloney and Keane 1992:0141; Keane 1995a & b.
Cloverhill Lough, Co. Sligo	1980	Burhenhult 1984, 126-27

Name	Year	Reference
Coolure Demesne, Co. Westmeath	2004	O'Sullivan *et al*. 2007
Corraneary, Co. Cavan	1937/38	Davies 1942
Cro-Inis, Lough Ennell, Co. Westmeath	1937-38? 1989	Macalister 1938; Farrell 1990
Danesfort Demesne, 'Togher', Lough Atrain, Co. Cavan	1942	Davies 1946
Deredis Upper, Lough Inchin, Co. Cavan	1942	Davies 1946
Derragh, Lough Kinale, Co. Longford	2002	Fredengren 2002a; 2002b
Frenchgrove, Co. Mayo	1998	McDermott 1998:0488
Island MacHugh, Baronscourt, Co. Tyrone	1985-86	Chambré 1937, 1939, 1946, 1948; Davies 1950; Ivens and Simpson 1986
Knocknalappa, Co. Clare	1937	Raftery 1937; 1942
Lagore, Co. Meath	1934-36	Hencken 1950
Lough Enagh, Co. Derry	1940	Davies 1941
Lough Eskragh, Co. Tyrone	1973	Williams 1978
Lough Faughan, Co. Down	1951-52	Collins 1955
Moynagh Lough, *Brittas* td., Co. Meath	1980-89; 1994-95; 1997	Bradley 1982-83, 1984, 1985-86, 1990-91, 1991, 1993, 1994-95, 1997, 1999.
Newtownlow, Co. Westmeath	1984-86	Bourke 1984, 1985:0058, 1986:0078
Rathroeen Lough, Co. Mayo	2002	Gillespie 2002:1407
Robinstown 1, Lough Ennell, Co. Westmeath	1990-92	Brady 1990:0119; 1991:0129; 1992:0180
Sroove, Co. Sligo	1997-99	Fredengren 2001a
Tonymore North, Lough Kinale, Co. Longford	1987	Fredengren 2002a
Tullyleek Lough, Relough, Co. Tyrone	2001	McQuillan 2001:1236; McQuillan 2002
Tullyveery, Clea Lakes, Co. Down	1956	Collins and Proudfoot 1959
Whitewood Lough, Co. Louth	1955	Ó Ríordáin 1955a

Table 3.4: Excavated Unenclosed and Other Miscellaneous Settlement Sites

Name	Site Type	Reference
Aghadegnan, Co. Longford	Structures pre-dating enclosure	Carroll 1991:0091
Ardclone, Co. Kilkenny	Hearth on backfilled ditch	Neary 2000:0514
Balgeen 4, Co. Meath	Possible hearth, pits and structure	Kehoe 2001:0943; O'Hara 2002:1423
Ballintemple, Co. Offaly	Bog hut platform	Turrell 2007:1436
Ballybeg, Co. Sligo	'Circular-shaped' site built with 'double stone circle'	Burenhult 1984, 71-72
Ballyboley, Co. Antrim	Souterrain and possible Structure	Lynn 1977-79:0001
Ballybunion, Co. Kerry	Sandhills Site	McCarthy 1986:0029
Ballycullen 1, Co. Dublin	Possible Structure	Larson 2002:0640
Ballygeale 1, Co. Limerick	Structure	Eogan & Turrell 1999:0485; 1999:0486
Ballykennedy, Co. Antrim	Structure pre-dating enclosure	Brannon 1980b
Ballymacrea Lower, Co. Antrim	Sandhills Site	Flanagan 1966
Ballyutoag, Co. Antrim	Upland transhumance site	Williams 1984
Ballyvollen, Co. Antrim	Possible structure	Williams 1985b
Barrees Valley, Co. Cork	2 Stone Huts	O'Brien 2002:0238; 2003:0174; O'Brien 2009
Beginish, Co. Kerry	Structures within field systems	O'Kelly 1956
Blackhills Lower, Co. Cavan	Possible Structure	McConway 1992:0007
Boolies Little, Co. Meath	Souterrain, hearth and burials	Sweetman 1983a
Bray Head, Valentia Island, Co. Kerry	Unenclosed settlement complex	Hayden 1993:0117; 1994:0117; 1997:0231;1998:0267; 1999:0234; 2000:0423; Walsh 1995:0132, 1997:0230
Carnreagh, Co. Down	Hearth	Large 2003:445
Carrignamuck, Co. Wicklow	3 Stone Huts	Brindley 1977-79:0076
Carrigoran, Co. Clare	Stone Huts and field systems	Reilly 1998:0033; 1999:0047; 2000:0055; Breen 1999:0046;

Name	Site Type	Reference
		Quinn 2000:0056
Carrowmore, Co. Sligo	Earthen Platform	Burenhult 1984, 132
Cloghermore, Co. Kerry	Cave and earthen enclosure	Connolly 2000; Connolly & Coyne 2000; 2005
Cloghlucas South, Co. Cork	Structures	Gowen 1998; Tarbett & Crone 1986:0014
Coarhabeg, Valentia Island, Co. Kerry	Stone Hut	Hayden 1994:0119
Coolbeg, Co. Wicklow	Pits, post-holes, hearths and ditch	Lynch 2004:1860
Corrstown, Co. Londonderry	Structures and Souterrain	Conway 2002:0386; 2002:0387
Craig Hill, Co. Antrim	Structure and Souterrain	Waterman 1956b
Croft Road, Hollywood, Co. Down	Hearths and Stakeholes	Dunlop 2004:0436
Culleenamore 15, Co. Sligo	Shell Midden	Burenhult 1984, 132 & 331-45
Culleenamore 18B, Co. Sligo	Shell Midden	Burenhult 1984, 212
Dooey, Co. Donegal	Sandhills Site	Ó Ríordáin & Rynne 1961; Ó Floinn 1995
Doonloughan, Ballyconneely, Co. Galway	Sandhills Site	McCormick & Murray 1997:0197
Dromiskin, Co. Louth	Souterrains, hearth	Halpin 1988:0045
Drumadonnell, Co. Down	Structure	McSparron 2001
Farrandreg, Co. Louth	Souterrain	Bolger 2000:0674
Ferganstown & Ballymacon, Co. Meath	Souterrain and possible Structure	Hanley 1999:0687
Glannafeen, Co. Cork	Stone Hut	Ó Cuileanáin 1955
Glen Fahan, Co. Kerry	Stone Huts	Bennett 1989:0053
Grange West 1, Co. Sligo	'Circular-shaped' site built with 'double stone circle'	Burenhult 1984, 71-72
Grange West 2, Co. Sligo	'Circular-shaped' site built with 'double stone circle'	Burenhult 1984, 72-95
Kilboglashy, Co. Sligo	Sandhill Middens	Crumlish 1999:0795; Wiggins 2004:1527
Kilkenny Castle, Co. Kilkenny	Structure	Murtagh 1993
Killaspugbrone, Co. Sligo	Sandhill Midden	Rooney 1998:0573
Killoran 66, Co. Tipperary	Bogland: Structure	Gowen *et al.* 2005, 255-56
Knowth, Co. Meath	2nd Phase: Unenclosed buildings & souterrains	Eogan 1968; 1974; 1977
Larne, Co. Antrim	Marshland Site	Cited in Comber 2008, 229
Leyland Road, Ballycastle, Co. Antrim	Structures near rath	Gahan 2001:0003
Luffertan 8, Co. Sligo	'Circular-shaped' site built with 'double stone circle'	Burenhult 1984, 72 & 96-109
Magheramenagh, Co. Londonderry	Pits and post-holes outside souterrain	Reilly 1998:0099; 1999:0130; Gilmore 2000:0163
Markstown, Co. Antrim	Structure	McSparron 2001:0014
Marshes Upper, Co. Louth	Structure and souterrain	Gosling 1980-84:0137; 1980-84:0138; Buteaux 1985:0040
Marshes Upper, Co. Louth	Structure, souterrain and field systems	Mossop 2002:1335; O'Hara 2002:1337
Maynooth, Castle, Co. Kildare	Structures	Hayden 1996:0190; 1999:0405
Mell 3, Co. Louth	Souterrain and field ditches	Breen 2000:0696
Minnis North, Co. Antrim	Sandhills Site (Shell Midden)	Simpson *et al.* 1993
Murgasty, Co. Tipperary	Structure	Cummins 1998:0626
Murrooghtoohy South, Co. Clare	Sandhills	Rynne 1968
Oughtymore, Co. Londonderry	Sandhills Site (Shell Midden)	Mallory & Woodman 1984
Park North, Midleton, Co. Cork	Cave	Coleman 1942
Platin, Co. Meath	1st Phase: 2 Structures	Conway 2001:1019; Lynch 2000:0774 2001:1022
Rampark, Co. Louth	Souterrains, burials, pits and other features	Campbell 2004:1122
Randalstown, Co. Meath	Possible structure and souterrain	Campbell 1985:0044
Ross Island, Co Kerry	Mine	O'Brien 2004; O'Brien & Comber 2008
Rossbeg II, Co. Mayo	Structure	Gillespie 2001:927
Roundstone, Dog's Bay, Co. Galway	Sandhills midden, hearth and hut	O'Rourke 1945
Seafield 11, Co. Sligo	'Circular-shaped' site built with 'double stone circle'	Burenhult 1984, 71-72

Name	Site Type	Reference
Sheepland Mor, Co. Down	Souterrain and Possible Structure	Rees-Jones 1971
Smithstown, Co. Meath	Structures and souterrains	Gowen 1988:0055
Solsborough, Co. Tipperary	Hearths, pits and kilns	Murphy 2000:0965
Terryhoogan, Co. Armagh	Structure	McSparron 2007
'The Spectacles', Lough Gur, Co. Limerick	Stone Huts	Ó Ríordáin 1949a
Tobertynan, Co. Meath	Structures and kilns	Tobin 2002:1534
Truska, Manninmore, Manninbeg, Co. Galway	Sandhill Midden, gullies and pits	McCormick 1992:0095; 1994:0115; McCormick 1995b
Tullaghgarley, Co. Antrim	Souterrain and possible structure	McQuillan & Long 1999:0018

Table 3.5: Dated Early Medieval Track ways

Name	Date	Context	Reference
Ballinderry II, Co. Offaly	Early medieval	Crannog Site	Hencken 1942, 34.
Ballinvally, Monettia Bog, Co. Offaly	A.D. 760±9	Bogland	O'Carroll 2000:0803
Ballybeg Bog, Co. Tipperary	A.D. 550-710	Bogland	Whitaker 2006:1848
Ballylennon Daingean Bog, Co. Offaly	A.D. 544-816 ± 9 (No Σ given)	Bogland	McDermott 2001:1085
Barnaran/Lullybeg, Co. Kildare	Early medieval	Bogland	Whitaker 2004:0798
Bloomhill, Co. Offaly	A.D. 605-762 (1 Σ)	Pilgrim Road	Breen 1988, 321-39.
Castlearmstrong, Killaghintober Bog, Co. Offaly	A.D. 665±9	Bogland	Bermingham 1996:0326
Castlearmstrong, Killaghintober Bog, Co. Offaly	A.D. 596-7	Bogland	McDermott 1998:0553; O'Carroll 1999:0742; 1999:0743.
Clonbeale More, Killaun Bog, Co. Offaly	A.D. 1030–1277 (No Σ given)	Bogland	Whitaker 2000:0808
Corlea 5, Co. Longford	A.D. 587±9	Bogland	Raftery 1996, 65-71.
Corlea 7, Co. Longford	A.D. 438-572 (1Σ)	Bogland	Raftery 1996, 79.
Derryarroge, Co. Kildare	A.D. 660-890	Bogland	Corcoran 2007:0802
Derryfadda, Baunmore Bog, Co. Kilkenny	A.D. 753-769 (?)	Bogland	Whitaker 2006:1012
Dromiskin, Co. Louth	Likely to be early medieval	Ecclesiastical	Murphy & Conway 1999:0590
Drummany Bog, Co. Cavan	Likely to be early medieval	Bogland	Ó Néill 1998:0020
Kellysgrove, Co. Galway	Likely to be early medieval	Bogland	Prendergast 1946
Killeen Bog, Co. Tipperary	A.D. 650-880 (?); A.D. 150-430	Bogland	Whitaker 2006:1805
Lemanaghan, Derrynagun Bog, Co. Offaly	A.D. 653 ± 9; A.D. 1158 ± 9	Bogland (ecclesiastical)	O'Carroll 1996:0327
Lisdermot, Corhill Bog Co. Offaly	A.D. 783-1149 (2Σ)	Bogland (Platforms)	O'Carroll 2000:0834
Lisdermot, Corhill Bog, Co. Offaly	A.D. 626±9	Bogland	O'Carroll 2000:0829
Littleton, Co. Tipperary	Likely to be early medieval	Bogland	Rynne 1965, 138-44
Lullybeg/Lullymore East, Co. Kildare	A.D. 380-660; A.D. 900-1160 (?)	Bogland	Whitaker 2004:0850
Sharragh Bog, Co. Tipperary	A.D. 575±9	Bogland	Whitaker 1997:0558

Chapter 3: The Early Medieval Church

Antiquarians were fascinated with the early medieval 'Celtic' church in Ireland, and, as a result, this 'Golden Age' of saints and scholars remains the most well-known popular aspect of Ireland's cultural heritage. In this traditional narrative, the early Irish church was persistently linked with a distinctive 'Celtic' form of Church with supposedly similar institutions – the widely-dispersed monastic federation or *paruchiae* – and common religious practices and beliefs (Davies 1992 for criticism). Out of these ideas emerged a national narrative for the development of 'Celtic Monasticism' during this Golden Age period. This 'Celtic Church' had its origins in an episcopally organised mission, shortly followed by the triumph of an abbatial form of government which fell victim to secularization and degeneracy during the Viking Age before reforms reintroduced the diocesan system in the twelfth century (Hughes 1966; Etchingham 1999, 18-21; 455 for a review). Studies of the early Irish church have also traditionally been dominated by art historians and historical architects who focused on upstanding churches, sculpture, metalwork and manuscripts (e.g. Petrie 1845; Champneys 1910; Henry 1965a, 1967, 1970; Harbison 1999b; O'Keeffe 2003).

Since the 1980s, historians have emphasised the diverse character of early medieval ecclesiastical sites, arguing convincingly that relatively few of these establishments were actually monasteries in the primary sense of that word (e.g. Sharpe (1984, 1992) and Etchingham (1991, 1993, 1999)). Instead, episcopal, abbatial and 'coarbial' authority may have coexisted at various church sites – particularly those larger establishments – from the mid-seventh to the eleventh century, and thus any distinctions between monastic and non-monastic churches are potentially misleading (Etchingham 1999, 456-57). It is now commonly accepted that the fifth-/sixth-century church emerged from disorganised growth *in situ*, instead of a well-organised episcopal mission (Sharpe 1984, 242). Instead of widely dispersed monastic *paruchiae*, as outlined in the traditional narrative, the church is now viewed along territorial lines with principal churches controlling vast territories and being affiliated with churches within the same secular kingdom (Etchingham 1993, 152; 2009, 459; Mac Shamhráin 1996; Ó Carragáin 2003b, 130). These competing theories have been tested mostly in areas like the Dingle/Iveragh peninsulas in Co. Kerry with their density and richness of early medieval ecclesiastical sites (Ó Carragáin 2003b, 129). The traditional view can be seen in the interpretation of the various ecclesiastical sites as eremitic monasteries (Henry 1957, 157), though acknowledging that such a concentration of eremitic sites paints a strange picture. In light of the re-reading of church proliferation in Ireland, others have argued that the dense distribution of small ecclesiastical sites in this region support the presence of a proto-parochial system in Ireland from at least the eighth century (Sharpe 1992, 90-91), and that these churches represent the presence of a complex system of ecclesiastical hierarchy in the Iveragh/Dingle peninsulas characterised by 'several different degrees of independence from or subservience to major establishments' Ó Carragáin (2003b, 146). It appears that many of these sites such as Church Island and Reask may have been proprietary churches (i.e. privately owned) (Ó Corráin 1981, 339; Mytum 1992, 63), with the benefice 'transmitted from one generation of non-celibate clergy to the next' (Ó Carragáin 2003b, 130). Furthermore Ó Carragáin (2009b, 119, 149) has suggested that the dense distribution of relatively small early medieval churches indicates that they were built to serve smaller, more diverse, local congregations than their late medieval successors though O'Keeffe (2006) is more sceptical.

Excavations have also thrown some light onto the function of ecclesiastical sites within the wider contemporary population. It is likely that the vast majority of people in early medieval Ireland were Christian or nominally Christian, however there was no obligations on early medieval secular populations to purchase a burial plot within a church graveyard (Swift 2003, 114). As a result, frequently only penitent laypeople and the upper echelons of society may have chosen to be buried, or may have been allowed to be buried, within a church graveyard. This notion of a 'dedicated Christian elite' is gaining some credence in the archaeological record where excavations have revealed early medieval burials in a variety of contexts,

including caves, souterrains, isolated contexts, unenclosed cemeteries and cemetery/settlements (Chapter 4). This has demolished the traditional assumption that all groups of people in the early medieval period were buried within ecclesiastical cemeteries, and may indicate the slow conversion of some groups of people within Ireland to regular Christian beliefs and practices. Recent years has also witnessed the development of other research themes dealing with, *inter alia*, the layout of ecclesiastical sites according to Christian ideologies (Aitchison 1994; Ó Carragáin 2003a), religious monuments (Herity 1995b), the nature of early medieval pilgrimage (Harbison 1991; O'Sullivan and Ó Carragáin 2008; Ó Carragáin 2009a) and the architectural setting of the mass and other ritual aspects (Ó Carragáin 2009b; 2010b, 167-213).

Ecclesiastical sites are generally known – some sites are still in use – and, as a result they have largely been avoided during large scale development schemes. Excavations are often due to graveyard extensions, or limited building work in the vicinity of a known site, although early medieval material may be produced on urban excavations located within the developed enclosures of early monastic sites. The most extensive excavations from the mid-twentieth century onwards tended to be undertaken as research programmes on small coastal sites in the west of Ireland. These sites were generally untouched by subsequent late and post-medieval ecclesiastical activity and were regarded as preserving the archaic qualities and original features of an early medieval Irish 'Celtic' monastery, but may be atypical of the church elsewhere.

Early Ecclesiastical Sites

Christianity was introduced into Ireland in the fourth and fifth century A.D., probably as a result of a combination of developing trading contacts between Romano-Britain and Ireland, and Irish raiding activity in Wales, Cornwall and western Scotland (Laing 1985, 274; Edwards 1990, 1-5). By the early fifth century it is clear a community of Christians existed in Ireland since Pope Celestine is recorded as sending Palladius as bishop 'to the Irish believing in Christ' in A.D. 431 (Thomas 1981a, 294-306). Many of these believers may have been slaves, including Ireland's patron saint, Patrick, who had a Romano-British background. The earliest surviving historical records relate to the late-sixth/early-seventh century, but there is very little information on the nature of contemporary pagan beliefs in Ireland (Ó Cróinín 1995, 27).

In the fifth century, the area of modern Co. Meath and north Co. Dublin was heavily internationalised and influenced from Roman Britain (Gavin and Newman 2007, 2). The density of Romano-British finds (Bateson 1973, 36) and subsequent fifth-/sixth-century pottery (Doyle 2009, 31) in this region confirm the 'outward looking' nature of this particular people (Bhreathnach 2005, 411-12). A collection of third-/fifth-century jewellery and coins around the Neolithic passage tomb at Newgrange, Co. Meath may represent possible evidence for the Romano-British tradition of depositing artefacts around prehistoric funerary monuments (Swift 1997, 13-20). Late Iron Age extended inhumations in the Romano-British tradition found at the royal settlement of Knowth, Co. Meath, have been interpreted as evidence that the earliest Romano-British missions in the fifth century A.D. targeted political centres (*ibid.* 21-22); and, in his *Confessio*, Patrick acknowledges that the success of the earliest Christian missions was dependent on royal support (Conneely 1993, 74).

It has been argued that many ecclesiastical sites developed from pre-existing lay cemeteries, with a church and domestic buildings added later (Thomas 1971, 69, 82). Comprehensive excavations of small ecclesiastical sites in the Dingle/Iveragh peninsulas, Co. Kerry (e.g. Church Island, Reask, Illaunloughan and Caherlehillan), however, have all clearly established that these ecclesiastical sites were from the outset primarily settlements rather than cemeteries, with only relatively small areas set aside for burial (Ó Carragáin 2003b, 129). Many excavated early medieval ecclesiastical sites provided evidence for prehistoric settlement – e.g. the extensive prehistoric flint assemblage found on the Irish monastery at Iona (Barber 1981, 353-354) or Dunmisk, Co. Tyrone (Ivens 1989, 50) – but direct evidence for continuity of settlement is more difficult to establish. The commonly-made suggestion that Inishmurray was originally a secular settlement, for instance, is not based on any firm

evidence (O'Sullivan and Ó Carragáin 2008, 33); and there is no evidence to support Lawlor's claim that the enclosure walls at Nendrum, Co. Down had a secular origin (McErlean and Crothers 2007, 332).

A number of ecclesiastical sites show evidence for earlier Iron Age settlement, for example a Roman fibula-brooch, dated to the first century A.D. (Kelly 1975:0032; Kelly 1976:0020) was found at a church excavation in Randalstown, Co. Meath, and sherds of Late Roman Amphorae, E ware and Merovingian glass indicate activity at this site through the fifth and sixth centuries. Radiocarbon dates from a number of ecclesiastical ditches have also provided Iron Age dates, for example a first- to fifth-century date is reported for Taghmon, Co. Wexford (Mullins 1999:0888) (the raw radiocarbon date was not published); at Kill St. Lawrence, Co. Waterford a radiocarbon date from a pit inside the inner enclosure was calibrated to A.D. 370-540 (O'Connell 2004, 27); and a radiocarbon date of A.D. 130-600 (2Σ) was produced from a basal layer of the ecclesiastical ditch at Armagh (Gaskell-Brown and Harper 1984, 158). The date from Armagh led the excavators to state that: 'the date range does allow the possibility that the ditch existed for some time before the traditional mid-fifth century date of St Patrick's arrival in Armagh and that the primary silting and its contents were of prehistoric date' (*ibid*.). The most convincing evidence for the location of an ecclesiastical site on an earlier settlement site is at High Island, Co. Galway. The church was built on an extensive spread of burning, which, although interpreted as re-deposited, must have originated in a nearby source (Marshall and Rourke 2000b, 87). Radiocarbon dates ranging between 300 B.C. and A.D. 20 were recovered from this layer (*ibid*.).

There are also a number of sites that could be variously described as 'ecclesiastical' or 'settlement/cemeteries' which have revealed possible preceding secular settlement evidence (Chapter 4). At Dunmisk, Co. Tyrone: 'slight traces were found indicating that there were modifications to an already existing Early Christian settlement' (Ivens 1989, 55). That this was an ecclesiastical site, however, is far from clear as the evidence for a church is tenuous. The burial phase at Millockstown, Co Louth is also preceded by an apparently late Iron Age secular settlement (Manning 1986a, 137-141). In the light of more recent excavations elsewhere, however the site is likely to have been a settlement/cemetery site (Stout and Stout 2008, 69-70). The presence of a faint circle, 40m in diameter, in the northern half of the large enclosure Moyne, Co. Mayo, suggested to Manning than an earlier rath preceded the ecclesiastical settlement (1987, 58). The feature was not, however, excavated.

The majority of ecclesiastical sites are found in low-lying riverine contexts that were rarely above 120m and almost never above 180m (Swan 1983, 100). Hurley suggests that locations most favoured for a church site: 'appeared to have been the shoulder of a low hill or ridge, often overlooking a river or stream… other situations which were favoured include sides of hills, coastal headlands islands … and occasionally hilltops' (1982, 310). Most importantly, he noted that 'few sites are situated in isolated or remote areas' (*ibid.*). In Hurley's study of south-west Ireland, he noted that low-lying river valley sites were rare, and that many of these were termed '*Dysert*', which he suggests meant 'hermitage' (*ibid.* 703*)*. He further suggests that these were heavily wooded areas generally eschewed by secular settlement. In midland areas, however, Stout found that ecclesiastical settlements *favoured* a 'low-lying riverine distribution', perhaps reflecting a desire to be near communication opportunities afforded by a riverside location (1997, 100). Clonmacnoise and Iniscealtra serve as obvious examples of this, and Stout (*ibid*. 102-3) provides an example in County Offaly where several ecclesiastical sites are located along the side of the River Brosna. River crossing points also appear to be a preferred location as evidenced at *Dubh Linn*, Clonmacnoise, Kilkenny and a range of crossing-points along the River Shannon including Killaloe and Banagher (Hughes & Hamlin 1977, 24). A desire to be near coastal route ways (Hamlin 2008, 37), could account for the locations of Movilla and Bangor, Co. Down, Lismore, Co. Waterford and the large number of coastal and insular sites along the Irish west coast.

Politics may also have played a role in influencing the location of ecclesiastical sites. Historical sources suggest that monasteries were sometimes located on the borders of *túatha* (Ó Riain

1972, 18), but it is difficult to substantiate this because the locations of early political boundaries are generally unknown. Close correlation between ecclesiastical sites and important pre-Christian political centres does not appear to have occurred during first century of the church in Ireland, and only starts to become apparent in the sixth/seventh century. There is some evidence of an earlier connection at Clogher, Co. Tyrone, between the monastery at Clogher and the nearby seat of the *Uí Crimthainn* (Warner 1988, 55), but it is by no means clear that this is a universal occurrence. This may have only been a regional phenomenon (Stout 1997, 102), and there were no important ecclesiastical foundation near the other Iron Age centres of Rathcroghan, Co. Roscommon and Dún Ailinne, Co. Kildare. The possible connection between Armagh and the Iron Age centre of Navan Fort is unconvincing, but, unlike Clogher, Navan Fort had been abandoned several centuries before the foundation of Armagh.

Ecclesiastical Enclosures

Often the best surviving evidence for early ecclesiastical sites is the enclosure boundary, usually an earthen bank-and-ditch combination (*vallum* and fosse), although sometimes a stone wall. It has been suggested that these defined the *termonn* – the legal area belonging to the ecclesiastical settlement (Hughes and Hamlin 1977, 54) – which was invested with the spiritual properties of sanctuary closely mirroring the Old Testament cities of refuge (Doherty 1985, 57; Edwards 1990, 106). The majority of ecclesiastical enclosures had a diameter between 90m and 120m, however in the case of the larger ecclesiastical sites, the inner enclosures tended to have diameters of between 100m and 200m, with outer enclosures of between 300m and 500m in diameter (Swan 1985, 97). Although circular enclosures dominated, there are a few exceptions. The Irish foundation at Iona, for instance, has a rectangular double enclosure which may have incorporated pre-existing Iron Age earthworks (McCormick 1993, 78-80), and Hamlin identified a rectangular banked-enclosure with rounded corners at Inch, Co Down, but the earthwork might be associated with the later Cistercian abbey which also lies within the enclosure (1977, 85-87). Thomas (1971, 29) proposed a rectangular enclosure at Clonmacnoise, Co. Offaly, but recent excavation and survey suggests a semi-circular shape (Murphy 2003, 21).

Doherty (1985, 57) has argued that Irish ecclesiastical settlements were designed to a set pattern, with a sacred core surrounded by a number of concentric boundaries demarcating areas of decreasing holy importance. The '*Book of Mulling*', showing a monastery comprising two concentric enclosures with crosses at the various entrances, provides an idealized illustration of this hierarchy of holiness (Henry 1965a, 81). This is supported by Swan's aerial survey, which suggested that large ecclesiastical settlements generally contain an inner and outer enclosure (Swan 1985, 77), even though the surviving visible remains from most ecclesiastical sites appear to have only a single enclosure (e.g. Hurley 1982, 314). Nendrum, Co. Down (Lawlor 1925; McErlean and Crothers 2007) is unusual in having three concentric enclosures, although the recently discovered site at Clonfad, Co. Westmeath may also have three enclosures (Stevens 2006, 9). The Lawlor excavations at Nendrum, and subsequent smaller investigations, have been re-appraised by McErlean and Crothers (2007). It was suggested that the inner enclosure, containing the church, round tower, burials, cross slabs and sundial, was the ritual focus of the settlement (*ibid*. 337-70). There was no evidence for industrial activity except for an enigmatic dump of 'half-fired' pieces of souterrain ware. The middle enclosure contained the domestic buildings including a possible '*scriptorium*' (*ibid.* 370-78); and industrial activity was confined to some evidence for non-ferrous metalworking. The evidence from the outer enclosure was less clear, and while there was some evidence for ironworking (*ibid.* 386), the grain-drying kiln belonged to a later medieval type.

The external boundary of monasteries usually consisted of a substantial ditch, and many of these have been excavated in recent years (Table 4.1). The ditch at the Irish foundation on Iona, for instance, was about 3m deep and nearly 3m wide (Barber 1981, 296-99); the primary ditch at Tullylish, Co. Down was of a similar size (Ivens 1987, 73); as were two sections of the ditch at Clonmacnoise, Co. Offaly (Murphy 2003, 16). In some instances there is evidence for re-cutting or replacement of these enclosures, for example at Tullylish, Co.

Down, the original inner ditch seems to have been re-cut twice. The inner ditch eventually filled due to a mixture of silting, dumping, and the deliberate slighting of the enclosure bank, and was replaced by a new ditch located some 6m outside the original ditch line (Ivens 1987, 58-61). This new ditch was regularly cleaned out during the earlier part of its life, but eventually was allowed to fill up (*ibid*. 60). Regular cleaning was also noted at the monastery of Tallaght, Co. Dublin (McConway 1995:0111); and at Dunshaughlin, Co. Meath the original water-filled ditch was deliberately in-filled by the destruction of the bank, and then re-cut (Simpson 2005b, 233-35). The ditch at Clonmacnoise was also deliberately filled, presumably by the demolition of the bank (Murphy 2003, 13). Radiocarbon dating indicated that this occurred between the late-seventh and late-ninth century, when the monastery was a thriving community. It has been suggested (*ibid*.) that the backfilling of the ditch at Clonmacnoise may have coincided with the construction of the bridge over the River Shannon, which dates to A.D. 804 (Moore 1996, 24-27; O'Sullivan and Boland 2000), or with the expansion of the settlement to the east of the core area (King 2009).

The in-filling of these ditches imply that the location of the monastic enclosure could be changed as expansion, or as internal re-organisation of a monastery demanded. In comparison to the thousands of raths with surviving substantial banks, few banks of early monasteries are still extant, and this raises the possibility that ecclesiastical enclosures may have been deliberately levelled at some stage when some important function of the vallum had become obsolete.

While enclosures may be regarded as essential components of an early monastery, they need not be regarded as primary ones. This is most clearly demonstrated at Church Island, Co. Kerry where the cashel wall was one of the last items in the site's early medieval development (O'Kelly 1958, 77). The earliest buildings were the wooden church and sod house, which were subsequently replaced by a stone roundhouse and church. At a later stage a rectangular house was built on top of the large midden that had accumulated outside the roundhouse's door, and the cashel wall was built after this, as it curved to avoid this later rectangular house. The evidence at Church Island might indicate that not all early ecclesiastical sites were necessarily enclosed at the beginning. In some other examples such as Killabuonia and Skellig Mhichil, Co. Kerry, the builders of these monasteries instead sought to manipulate the local surrounding hilly topography to create terraced slopes ideal for organizing and demarcating these sacred spaces (Herity 1995b, 58). At larger, more spread out, ecclesiastical settlements, subsidiary churches and cemeteries such as Reefert at the upper lake of Glendalough and *Temple na ferta* outside the *ráth* at Armagh may have contained their own smaller enclosures independent of the main church. Although relatively extensive excavations at various early ecclesiastical sites have failed to yield any evidence for surrounding *vallums*, banks or walls, it is generally assumed and accepted that enclosures were a very common feature of these sites for symbolically demarcating the boundary between consecrated and profane ground during the early medieval period. This chapter will look at the religious structures associated will these ecclesiastical enclosures (burials will be discussed in Chapter 4), and then will examine the evidence for domestic and industrial structures.

Churches and Other Ecclesiastical Monuments

The various annals, lives of saints and other sources frequently refer to a number of buildings found within the ecclesiastical enclosure. Manning (2000) undertook a comprehensive review of the historical evidence for church building in the Irish annals (A.D. 760-1170) and found that the earliest references generally refer to churches as '*dairthech',* (lit. 'oak house') (*ibid*. 38); '*damliac'* ('stone churches') (*ibid*. 38), and '*tempall'* (which he suggests were also stone-built churches) (*ibid*. 39), only became more common from the tenth and particularly the eleventh century. The written sources also mention '*oratorium'* ('oratory'), '*cloig thech*' ('lit. 'bell-tower', i.e. the round tower), and '*taigi aernaighl*, which, may refer to special oratories built either as leper houses or infirmaries (MacDonald 1981, 309). A range of other smaller churches can potentially be identified in passages in the documentary sources. Manning (2000, 40) has speculated that '*erdamh'* may refer to a small subsidiary church associated

with, but not attached to a larger church; and MacDonald (1999, 259) has suggested that the eleventh/twelfth century term '*recles*' refers primarily to a reliquary church contained in a small complex within the settlement.

Early Pre-Stone Churches

Fifth-/ninth-century ecclesiastical settlements were dominated by the *dairthech*, a wooden or sod-walled church (Hamlin 1985, 286). In comparison to the stone tradition of the Anglo-Saxon church, the construction of wooden churches was regarded as a particularly Irish trait. Bede, in the early eighth century, describes how Benedict Biscop, founder of Wearmouth, went to Gaul to find masons capable of building a church in the Roman manner, while St Finian, an Irish bishop, built a church at Lindisfarne 'after the manner of the Irish, not of stone, but of split oak' (O'Keeffe 2003, 64-65). As late as the twelfth century, a timber oratory built by St Malachy is described by his biographer, St Bernard of Clairvaux, as an 'Irish work' (*ibid.*). It appears, however, that wooden churches were not a strictly Irish phenomenon, and they may have dominated the early ecclesiastical structures across large tracts of continental Europe, for example around half of the early medieval churches excavated around Berne in Switzerland were of wooden construction (Bonnet 1997, 222 – quoted in Ó Carragáin 2010, 15).

Few early medieval wooden churches have been excavated (Table 4.2). Complete plans are rare and the evidence for the most part comprises series of post-holes, frequently found beneath early stone churches. The only two relatively complete plans are from Church Island, Co. Kerry (O'Kelly 1958), and Carnsore Point, Co. Wexford (O'Kelly 1975). The wooden church at Church Island – approximately 3m x 2m – was inferred from seven postholes, and was on the same alignment as the early Christian burials (O'Kelly 1958, 58-59). Excavations at Carnsore Point revealed a number of post-holes beneath the extant stone church of St Vogue's (O'Kelly 1975, 20-22) which were tentatively interpreted as the remains of a small church, measuring 2.25m x 1.5m. Charcoal from these post-holes produced a date of between the seventh and mid-tenth centuries (*ibid.* 22, 62-63). A rectangular structure at Owenbristy, Co. Galway, measuring a maximum of 4.9m x 2.8m, has also been tentatively interpreted as a wooden church (Lehane and Delaney 2010, 62). This structure was identified by four corner posts, which produced radiocarbon dates between *c.* A.D. 580 and A.D. 690 (*ibid.*), and was defined on its southern edge by a group of burials which obviously respected the boundary of this structure (*ibid.*). Another small church was proposed at Reask, Co. Kerry, but since it is based on only two post-holes it is hardly convincing (Fanning 1981, 80, 86), and post-holes and stake-holes found beneath stone churches at Church Island, Co. Mayo (Ryan 1993:0173), Killtullagh, Co. Roscommon (Gregory 2000:0858) and Killelton, Co. Kerry (Manning 1988:0030), may also indicate earlier wooden churches.

Limited excavations of the church on White Island, Co. Fermanagh, produced evidence for a series of 'sleeper trenches', interpreted as indicators of sill-beams (Waterman 1959a, 65-66), and a similar style of construction may have been utilised at Cormac's Chapel, Cashel, Co. Tipperary – which may date to the ninth/tenth century (Hodkinson 1994, 173) – and at Toureen Peakaun, Co. Tipperary (Ó Carragáin 2010b, 20). A possible wooden church at Dunmisk, Co Tyrone was truncated by burials, but appears to have originally been about 2.5m wide and up to 7m in length (Ivens 1989, 60-61). The church at Dunmisk was a composite building, combining slot trenches lined with stone slabs, and post-holes (*ibid.*), as was the wooden structure below the South Church at Derry, Co. Down (Waterman 1967b, 55). It has been suggested that these early wooden churches may have formed the basis for the depictions of churches in manuscripts (e.g. *Hisperica Famina*), metalwork (reliquaries) and stone-carving (High Crosses), which portrayed hipped shingled roof, ridge pools, finials and angle posts (Hughes and Hamlin 1977, 58; Hamlin 1984, 122).

A turf-built oratory, dating from between the seventh/eighth century and the tenth/eleventh century, was excavated at Church Island, Co. Kerry (Ó Carragáin 2010b, 17); and a possible sod-built church was identified at Illaunloughan, Co. Kerry, where two parallel slot trenches containing upright stone slabs were discovered under the stone church. These were assumed

to have contained the turf walls of the earlier church, which would have had an internal width of about 2m, similar to the overlying stone oratory. Its length could not be definitely ascertained but, if a sill stone found within the stone church can be assumed to be part of western door of the sod church, it would have had an internal length of about 6m (Marshall and Walsh 2005, 23-24). Four corner posts may have carried the weight of a thatched low-pitched hipped roof independent of the supporting walls (*ibid*. 24-25).

Internal features from these early churches are infrequently identified. A possible wooden altar, a sump outside its western doorway, and an internal *sacarium* (ablution drain) were discovered at a fifth-/sixth-century wooden church at Caherlehillan, Co. Kerry (Sheehan 2009, 196-97; 204); and the possible remains of an altar were identified as a stain at the east end of a wooden church with earthen walls at Inishcealtra, Co. Clare (Harbison 1982, 628-29; Hamlin 1985, 285; Ó Carragáin 2009b, 130-31). A pair of post-holes inside the possible church at Dunmisk, Co. Tyrone has also been interpreted as the remains of a lean-to altar against the east wall (Ó Carragáin (2009b, 130-31); and a stone-built altar was found at Carnsore, Co, Wexford (O'Kelly 1975, 27).

These small early churches compare rather poorly with the great wooden church at Kildare described in Cogitosus' '*Life of St Brigid*' (Connolly and Picard 1987, 25-26). Harbison has interpreted the building at Carnsore Point as a wooden tomb shrine rather than a church (1991, 150), but Wallace (1982b, 20) argues that these post-holes should be interpreted as internal roof supports, as is the case in tenth/eleventh-century wooden houses in Dublin, rather than evidence of external walls, thus allowing for a larger structure.

Stone Churches

Various construction techniques were employed in building the earliest churches in Ireland, and mortared ecclesiastical structures only became common after the tenth century (Harbison 1982, 618-19; O'Keeffe 2003, 69-72; Manning 2006, 243; Hamlin 2008, 54; Ó Carragáin 2005a, 28, 2005b, 138). Earlier mortared structures, however, would seem to include possible eighth-/ninth-century shrine chapels, such as Temple Ciaráin at Clonmacnoise and St Declan's at Ardmore (Ó Carragáin 2003a, 132); and drystone-wall oratories frequently found in western monasteries, particularly in Co. Kerry (Marshall and Walsh 2005, 103-24).

Gallarus-style Oratory

Eight structures of this type have been excavated (Table 4.3). They are mostly restricted to the Dingle and Iveragh peninsulas in Co. Kerry (Ó Carragáin 2005a, 24-25; Rourke and Marshall 2005, 109), and the only identified Gallarus-style oratories found outside this area are on the two island sites of Duvillaun More and Inishglora, Co. Mayo, and possibly on the summit of Croagh Patrick, also Co. Mayo (Walsh 1994, 5).

The date of these churches has generated much debate. Traditionally, it was widely assumed that Irish church architecture developed typologically from the beehive hut, through the Gallarus-style oratory, to the church with upright walls and stone roof (e.g. Petrie 1845, 37, Leask 1955, 21; Harbison 1970, 45-50 for overview). Archaeologists have emphasised the regional 'western' nature of the Gallarus-style oratory (Ó Carragáin 2010b, 49) which appear to have evolved from curvilinear 'beehive' corbelled huts (*clochauns* – see below) (e.g. Herity 1995b, 176-77, O'Keeffe 1998, 114; Rourke and Marshall 2005, 112). As such these Kerry sites were divorced from the mainstream structural developments in ecclesiastical architecture which culminated in the twelfth-century barrel-vaulted stone-roofed churches (Harbison 1970, 58).

O'Keeffe (1998, 114) has suggested that the recurring association of Gallarus-style oratories and *clochauns* with early cross-slabs and *leachta* in west Co. Kerry supports an early date for these types of buildings. Charcoal from a possible 'boat-shaped' oratory excavated on the summit of Croagh Patrick, Co. Galway (Walsh 1994, 9), was radiocarbon-dated to A.D. 430-890 (Walsh 1995:0224), and based on the stratigraphical sequence of associated radiocarbon-dated burials and structures, excavations at Illaunloughan established an eighth

century date for its drystone dome-shaped oratory (Rourke and Marshall 2005, 120). It has also been suggested that, based on its architectural style, the oratory on the south peak of Skellig Michael may also date to the ninth century (Horn *et al*. 1990, 71-93).

Single Chamber Rectangular Churches

These churches are the most common form of early medieval stone churches. They are typically plain rectangular unicameral structures, with doors in their western gable (Harbison 1982, 618-19; O'Keeffe 2003, 69-72; Manning 2000, 119; Hamlin 2008, 54; Ó Carragáin 2005a, 28; 2005b, 138). Approximately 150 such churches have been identified (Ó Carragáin 2005a; 2005b; 2010b) and, although a small number may date to the tenth century (Manning 1995a, 30-33; 1998e, 56-86; 2002, 18-21), the vast majority were built in the later eleventh and twelfth centuries (Ó Carragáin 2005a, 32; 2005b, 138). More than 30 have been excavated, but nothing of early medieval significance was discovered.

Pre-Romanesque Bicameral Churches

Unlike the simpler single chamber buildings, pre-Romanesque churches are characterised by distinct naves and chancels with lintelled doorways and unadorned pre-Romanesque round-arched chancel openings (O'Keeffe 1998, 121; O'Keeffe 2003, 83-87; Hare and Hamlin 1986, 322). Based on their architectural details, and on the assumption that relatively few nave and chancel churches lack Romanesque sculpture, it has been suggested that these buildings date to the late eleventh or early twelfth centuries (Ó Carragáin 2009b, 144-46). These churches are particularly prominent in the Dublin/Glendalough region and examples are found at Reefert and Trinity Church in Glendalough, Co. Wicklow, Confey, Co. Kildare and Palmerstown and Killiney, Co. Dublin (O'Keeffe 2003, 83-85).

Only two pre-Romanesque bicameral churches have been excavated in Ireland (O'Keeffe 2006, 129-30). A mortared nave and chancel church was excavated within an oval enclosure at Clondalkin, Co. Dublin (Rynne 1967, 30). The remains of an altar were discovered against the inner wall of the chancel, and a *c*. eleventh-century decorated bronze ring-pin was discovered against the northern wall of the nave. Excavations at St Peter's, Waterford revealed that it was started in the early-twelfth century and modified over several centuries. The original church contained an early twelfth-century English Romanesque-style apse which indicated that its Hiberno-Scandinavian community were looking to England for architectural templates for their churches in this period (O'Keeffe 2003, 103). The post-holes below the stone church may suggest an earlier wooden church but they did not reveal a convincing ground plan (Hurley and McCutcheon 1997, 192). O'Keeffe (2003, 102-3) has suggested that a large post-hole depicted in a photograph in the centre of the chancel might represent evidence for a *sacarium* (ablution drain), though this was not stated by the excavators.

Double-Vaulted Churches (Early/Mid-Twelfth Century)

Small double-vaulted oratories with corbelled roofs have been dated to the late eleventh/mid-twelfth century (Radford 1970, 58; Harbison 1970, 46-47; O'Keeffe 2003, 87-91; Ó Carragáin 2005a, 24-27), and are frequently named after the saints associated with the respective ecclesiastical site. Based on historical and architectural evidence, the construction of Cormac's Chapel at Cashel has been securely dated to A.D. 1127-34, (O'Keeffe 2003, 123-165; Stalley 2006, 164). Other barrel-vaulted churches appear to be of a similar date (O'Keeffe 2003, 89), for example St Flannan's Oratory at Killaloe may date *c*. A.D.1100 (Gem 2006, 74); and similar dates are argued for St Kevin's Church at Glendalough, St Columba's Church at Kells and St Mochta's Church at Louth (O'Keeffe 2003, 85-91; Ó Carragáin 2010b, 262-82). It has been speculated that these buildings may have been the products of royal patronage and may have been associated with the re-emergence of the practice of enshrining relics of saints in freestanding structures in the late eleventh and twelfth centuries (Herity 1995b, 287-91; Ó Carragáin 2003a, 153; O'Keeffe 2003, 131-35).

The most comprehensive excavation on a barrel-vaulted church/oratory occurred at Cormac's Chapel, Cashel (Hodkinson 1994, 173-74) and identified evidence for early burials as well as the remains of wooden and stone churches. Earlier burials underlying the walls were also

found at St Molua's Church on Friar's Island, Co. Clare. This site was examined in 1929 in advance of the Shannon Electric Power Scheme, before being rebuilt on the mainland at Killaloe, Co. Clare (Macalister 1929; Leask 1929; 1930).

Internal Ecclesiastical Features

The excavations of the foundations and interior of early medieval churches have produced relatively little in the way of archaeological material from their primary period of use. Although foundations are known from Great Britain *c*. A.D. 1000, there is very little evidence for their use in early medieval church building in Ireland (Marshall and Rourke 2000, 90-91). Exceptions may include Inishlora, Co. Sligo (*ibid.*) where the bottom course of the wall was comprised of a narrow plinth which provided a level base for the building and Kilternan East, Co. Galway where the bottom course overlay packing stones from a foundation trench (Waddell and Clyne 1995, 155). There are also incidences where churches were built on artificial platforms, e.g. St Molua's church, Friar's Island, Co. Clare (Marshall and Rourke 2000, 90-91), but in most cases the wall appears to have rested directly on the ground level.

While there is considerable evidence that wall plaster was common at early ecclesiastical sites in Britain such as Whithorn, Monkwearmouth, Repton and Jarrow (Marshall and Rourke 2000, 85), there has been no detailed study of this practice in early medieval Ireland. Excavations, however, have identified the possible presence of plaster on the internal walls at the churches on High Island, Friar's Island and at Clonmacnoise Cathedral (*ibid*. 85-86; Leask 1930, 130; Manning 1998, 56-86).

Only a few original early medieval floors have been identified and archaeologically investigated. The interior of the church at High Island, Co. Galway seems to have been completely paved although only a relatively small area, immediately inside the door, survived *in situ* (Marshall and Rourke 2000, 86). Further layers of paving beneath this led the authors to conclude that the present church was the latest of a series of churches, although it is not known if the earlier churches were of stone or of wood (*ibid*. 88). Most early churches have not provided evidence for internal paving except for threshold flagstones such as in the case at Church Island, Illaunloughan and Reask, (all Co. Kerry). At Church Island the flags were laid down before the gable door jambs were built (O'Kelly 1958, 62-65); at High Island the floor flags appear to have been laid in a bed of mortar (Marshall and Rourke 2000, 90); and at Illaunloughan the floor level is described as a 'formal grey-white pebbled clay/till flooring' (Marshall and Walsh 2005, 160).

A considerable number of studies have dealt with the ecclesiastical architecture of early medieval churches, yet very few have sought to investigate how different groups of people (clerics, monks, bishops, anchorites, kings and commoners) used these internal spaces for religious worship during this period. The topic of whether early medieval Irish churches were congregational has been the subject of renewed scholarly debate (Hunwicke 2002; O'Keeffe 2006; Ó Carragáin 2006; 2009b; 2010b). Much of this focused on well-preserved small oratories in western Ireland, which were viewed as generally typical of these buildings, while 'larger churches at more important sites, often only surviving as vestiges incorporated into parish churches, tended to be overlooked in this debate' (Ó Carragáin 2009b, 119). The small size of the western buildings contributed to the belief that churches were generally not congregational and that they were either primarily used to store liturgical equipment while the mass was said outside (Henry 1940, 25-27; O'Kelly 1958, 127); or that they were sanctuaries in which the mass was celebrated inside while the congregation stood out in the open air (Macalister 1928, 247; Bitel 1990, 71; Hunwicke 2002, 2-3; Laing 2006, 217). These arguments have been scrutinised by Ó Carragáin (2010b, 167-74), who concludes that 'there is no evidence to support the common assumption that early Irish churches were non-congregational' (*ibid*. 213).

The functional internal organisation of early medieval Irish churches from surviving churches and early documents has been reviewed (Ó Carragáin 2009b; 2010b). Cogitosus' seventh-century discussion of the wooden church at Kildare describes a nave divided longitudinally,

with women on the left side and men on the right (Connolly and Picard 1987, 25-26). Early documentary sources also describe partitions of organic material – '*crann-chaingel'* ('wooden partition') and *'clais tarsna'* ('crosswise groove') – separating the congregation from the sanctuary (Ó Carragáin 2009b, 125-26); and Cogitosus describes a board 'painted with pictures and covered with wall hangings' stretching from wall to wall, which delimited the sanctuary of the church in Kildare (Connolly and Picard 1987, 25-26). No early medieval Irish church has yet produced evidence for such internal divisions, and it has been argued that early medieval Irish churches were too narrow to support such longitudinal divisions (Neuman de Vegvar 2003, 160). Ó Carragáin (2009b, 125) however cites the example of a very small eighth-century church – 4.5m wide – from Whithorn, Scotland whose nave was divided longitudinally into three sections (Hill 1997, 150). The (possible) rectangular wooden churches at Ballygarran, Co. Waterford (Power 1941) and Dunmisk, Co. Tyrone (Ivens 1989) contained a single post-hole on their axes which Ó Carragáin (2009b, 126) tentatively identified as a transverse sanctuary division.

A stone-built altar was found at High Island, Co. Galway (Marshall and Rourke 2000, 83-85), and a stone altar frontal recorded at the site at Reefert may have stood against the east wall (Ó Carragáin 2009b). One such altar frontal (*eneclair)* was purchased for the great altar of Clonmacnoise in the year A.D. 1005 (*recte* 1007) (Ó Floinn 1998b, 94-95). Early documentary sources use the term '*cro chaingel'* ('chancel enclosure'), perhaps referring to a small square enclosure fully surrounding the altar, with the congregation at the sides as well as at the front of the sanctuary (Ó Carragáin 2009b, 126-27). On Inishmurray Island, Co. Sligo, waist-high drystone enclosures surround tenth/eleventh-century outdoor altars (*leachta*), and it has been suggested that these may represent outdoor 'chancel enclosures' (*ibid.*).

Ogham Stones

Ogham stones have been argued to be good indicators of early (i.e. fifth to seventh century) church sites (Swift 1997, 27-48). At least 14% of ogham stones contain cross-inscriptions (Hamlin 1982, 285), although some of these, such as Aglish, Co. Kerry (Macalister 1945, 137-38), are clearly in a secondary position to the ogham script. The ogham script and crosses at Drumconwell, Co. Armagh, however, appear to be contemporary with each other, while an ogham stone at Arraglen, Co. Kerry has a Christian inscription which reads 'Ronán the priest son of Comgán' (Macalister 1945, 298-99; Hamlin 1982, 285). It has been argued by Swift (1997, 127) that ogham stones containing Maltese crosses, Christian titles and Latin names are demonstrably Christian in origin and as Edwards suggests 'are the earliest identifiable evidence of Christianity in Ireland…which may provide the key to the identification of the earliest Christian sites in Ireland' (1990, 103-04).

Ogham stones have been excavated on a number of excavated ecclesiastical sites including Killeen Cormac, Co. Kildare (Macalister and Praeger 1929, 251), Clonmacnoise, Co. Offaly (Manning and Moore 1991, 10-11) and St Brecaun's, Portersgate, Co. Wexford (Breen 1987:0057). A number of cross-inscribed orthostats at Kilgowan, Co. Kildare (Keeley 1989-91b) and Brackloon, Co. Kerry (Moore 1991:0067) mark the sites of early cemeteries, though the crosses may have been added at a later date. Cross-decorated standing stones are said to have also demarcated early ecclesiastical cemeteries at Reask, Co. Kerry (Fanning 1981, 86; 113-15) and Kilnasaggart, Co. Armagh (Hamlin 1982, 291) and it has been suggested that the cross-inscribed stone pillar at Kilnasaggart functioned as an estate-marker as its inscription has been translated as reading: 'This place, Ternoc son of Ciaran the Little has bequeathed it under the protection of Peter the Apostle' (Swift 1997, 41). This may corroborate Ó Riain's theory that early church foundations were sometimes located on the borders of *túatha* (1972, 18), though this is obviously difficult to substantiate as the locations of early political boundaries are generally unknown.

Tomb-Shrines

The burial place and tomb-shrine of the founder saint was an important focus of ritual at early church sites (Thomas 1971, 132-66). These may have originally been marked by ogham-carved, or cross-incised, stones, but, from the seventh century onwards, tomb-shrines

('*memoria*' or '*martyria*') were built to contain the translated corporeal remains of these saints (O'Keeffe 1998, 116), and several recent works have emphasised their role in pilgrimage in Ireland during the early medieval period (Harbison 1991b; Herity 1995c; O'Keeffe 1998; Ó Carragáin 2003a, 2003b). This practice appears to have been common in the eighth and ninth centuries, with evidence for a revival in the late eleventh and twelfth centuries (Ó Carragáin 2003a, 134). There has been a tendency to suppose that tomb-shrines were an essential component of the earliest church sites and Swan (1983, 274) includes them in his criteria for identifying an ecclesiastical site. Whether this is true for the sixth and seventh century is unclear, however this seems to be the case by the eighth-century, where a principal church is defined in the *Córus Béscnai* as one 'in which there are relics of the founder' (Etchingham 1993, 154). Ó Carragáin (2003b, 143) suggests that the growth of the cult of the relics at church sites in this period was driven by a desire by clerics to promote the autonomy of their ecclesiastical foundations.

There have been relatively few early medieval excavated tomb-shrines, mostly in Co. Kerry (Herity 1995b, 277-94; Ó Carragáin 2003a; 2003b). Though these structures exhibit evidence for clear diversity and growing architectural complexity in size and form during the early medieval period, they all share the common principle of being located away from the main church building and frequently above the reputed grave site of the founding saint.

Corner-post tomb shrines have been excavated at Church Island, Co. Kerry and Caherlehillan, Co. Kerry. At Church Island, the possible shrine was excavated inside a natural hollow in the southeast corner of the island (O'Kelly 1958, 87-90). Although O'Kelly believed that its grooved corner-stones were later medieval additions, Ó Carragáin (2003a, 144) has argued that it conforms to a corner-post type shrine, and subsequent excavations by Hayden (2004:0721, 2005:0664) confirmed that the corner-post shrine was situated along the south-eastern side of a monumental terraced shrine mound. The 'corner-post' shrine excavated at Caherlehillan, Co. Kerry was built over a 'special' lintel-type grave of a possible 'saint' or founder of the site. The lintel burial beneath the shrine was different to other graves within the cemetery as it bore clear evidence of tooling and contained a rough stone cross as one of its covering slabs. It was also one of the earliest graves within the cemetery and appears to have been the focus of some veneration resulting in the worn state of the upper edges of its side-stones and covering lintel, probably 'consistent with devotional pilgrimage activity at the grave' (Ó Carragáin 2003a, 134; Sheehan 2009, 198-99). The grave was then structurally elaborated sometime in the seventh/eighth century when a 'corner-post' shrine formed of large sandstone slabs was deliberately placed over it (Sheehan 2009, 199). The excavator suggested that Irish 'corner-post' shrines date to between the later fifth/sixth century and 'the period when the cult of relics from around the eighth century led to the construction of formal reliquary shrines such as 'A-roofed', or 'gable-shaped', structures' (*ibid*. 200).

The complexity and monumentality of 'A-roofed', or 'gable-shaped', tomb-shrines has recently been revealed at Illaunloughan, Co. Kerry (Marshall and Walsh 2005, 58-66). The shrine lay on a raised paved plinth with a formal entrance approached by a paved pathway on its western side. Large quantities of quartz stone were scattered over the plinth. Two long slate stones lying against each other formed the gable-shrine. Within this, two stone cists, shaped like miniature lintel cist graves, contained the bone of two male adults and a child. Although the raw radiocarbon data is not given, calibrated dates of A.D. 686-794, A.D. 666-777 and A.D. 660-780 were produced for these burials (Marshall and Walsh 2005, 62). It has also been suggested that the sepulchral mound at Church Island, Co. Kerry may have originally supported a gable shrine on its top, denuded, terrace (Hayden 2004:0721; 2005:0664).

Other miscellaneous tomb-shrines in the Iveragh Peninsula, Co. Kerry have been discussed by Ó Carragáin (2003b, 144-45) and include small rectilinear enclosures surrounding square drystone features at Beginish and Cappanagroun (O'Sullivan and Sheehan 1996, 248). A 1m^2 paved area, delimited partially by side-slabs and small pillar stones, excavated to the immediate west of the stone oratory at Reask, Co. Kerry was identified as a possible tomb-shrine (Fanning 1981, 84-86). Part of the rationale for this identification was the high level of

phosphorus recorded, however it is obvious that such readings are not unusual in graveyards (Ó Carragáin 2003b, 145).

Shrine Chapels

A group of small mortared rectangular single cell buildings, often containing deep antae and a western doorway, are present on a number of important ecclesiastical sites, and hagiographical, archaeological and folkloric evidence indicate that these small churches were regarded as saint's burial shrines (Ó Carragáin 2003a, 130-76; Harbison 1991, 147-51; Herity 1993b, 190-91; Herity 1995b, 287; O'Keeffe 1998, 116). Ó Carragáin has observed that the location of these buildings varies greatly in relation to the main liturgical church on ecclesiastical settlement supporting the idea that they may have been built over the original founder's grave-site (2003a, 134). It has been suggested that these buildings should more accurately be described as 'shrine chapels' instead of 'tomb shrines', because 'in Ireland "*scrín*" which derived from the same root as shrine, denoted the principal corporeal reliquary of a particular saint, while in origin "chapel" denoted a small free-standing building used to house a relic' (Ó Carragáin 2003a, 130, 165 notes 11-12). Documentary references and radiocarbon dates have suggested that these mortared shrine chapels may date from as early as the eighth or ninth century and therefore slightly pre-date mortared stone churches (Harbison 1991, 151; O'Keeffe 1998, 116; Berger 1992, 880-89; Berger 1995, 159-174; Ó Carragáin 2003a, 131-33, 165 Notes 13-16).

Temple Ciaráin at Clonmacnoise was excavated in the 1950s by Liam de Paor, although the site remains unpublished (Manning 1998, 78; Manning 2003, 65-72). The excavations uncovered a subterranean sub-rectangular stone structure beneath the northeast quadrant of the building. It appears to have been wider and shorter than a normal adult grave, around 1m deep with a roughly corbelled roof of flags just below floor level (Manning 2003, 69). Two human burials contained within partly stone-lined graves were discovered in the interior of the small shrine chapel on Church Island, Lough Key, Co. Roscommon (King 2007), and the chapel shrine of Columba at Iona also contained two slab-lined graves (but these are thought to be of later medieval date (RCAHMS 1982, 42)).

Mortar from Temple Ciaráin produced a calibrated date of A.D. 660-980 (2Σ) (Berger 1995, 169-70), however the burials from Church Island, Lough Key were substantially later and produced radiocarbon dates of A.D. 1021-1216 and A.D. 1034-1229 (2Σ) (King 2007, 369). It has been suggested that these dates make the Church Island structure roughly contemporary with a collection of small freestanding twelfth-century gabled mortuary houses (generally less than 3m long and 2m wide) at Saul, Co. Down, Cooley, Co. Donegal and Banagher, Bovevagh and Tamlaght, Co. Londonderry (Waterman 1960). All these buildings appear to have been reliquary in function and belonged to the long established Irish early medieval tradition of housing relics in freestanding structures independent of the main congregational church (Herity 1995b, 287-291; Ó Carragáin 2003a, 153; O'Keeffe 2003, 131-35).

Leachta

Leachta are open-air, drystone constructions, which are commonly found on a number of western monasteries including Inishmurray, Co. Sligo (O'Sullivan and Ó Carragáin 2008, 239-43); Illauntannig, Illaunloughan and Skellig Michael, (all Co. Kerry) (Cuppage 1986, 295; Marshall and Walsh 2005, 46-51; Horn *et al*. 1989, 42-45); and High Island, Co. Galway (Marshall and Rourke 2000, 36-37). Recent excavations of *leachta* on Illaunloughan and Inishmurray have resulted in re-appraisals of the monument type. The etymology of the term '*leacht*' implies an association with burial, and can be translated as a 'memorial or monument'; a 'heap or mound'; a 'memorial cairn'; or a 'grave' or 'gravemound' (Marshall and Walsh 2005, 49). Thomas (1971, 168-72) has argued that it derives from '*lectus*' (Latin) and '*lecht*' (Old Irish), both of which mean 'bed', in the early medieval sense of a 'grave'. They are often assumed to be 'open-air altars', but they are unsuitable for the purpose of performing the sacrifice of the Eucharist as they are generally too low; they do not afford a level surface for the chalice; and they are 'not constructed so that Mass could be celebrated facing east'

(Hunwicke 2006, 49) and, of the sixty-five known *leachta* in Co. Kerry, only two are likely to have functioned as altars (O'Sullivan and Ó Carragáin 2008, 321).

Several *leachta* have been excavated. The *leachta* at both Inishmurray, Co. Sligo and Omey, Co. Galway were rebuilt and renewed over time, with the latter replaced by a mortared *leacht*, 'probably in the late middle ages' (O'Keefe 1992, 5). These sites, however, have failed to produce conclusive dating evidence for construction and use. The *leacht* at Illaunloughan, Co. Kerry was contemporary with the eighth-/early-ninth-century monastery, as its construction 'predates the stone oratory but possibly not by a significant period' (Marshall and Walsh 2005, 156); and a possible 'Roman' glass vessel from the base of the core of a *leacht* at Trahanareear, Inishmurray, is more likely to be a modern intrusion (O'Sullivan and Ó Carragáin 2008, 233).

Some of the excavated *leachta* were located on top of burials but it is unclear if they were built specifically to mark the location of a particular burial. The *leacht* at Illaunloughan cut through, and damaged, earlier burials (Marshall and Walsh 2005, 156-57), so a direct association is improbable. The two *leachta* in Relickoran, Inishmurray, Co. Sligo were also built over burials which provided calibrated dates of A.D. 711-982 and A.D. 893-1148 (2Σ) (O'Sullivan and Ó Carragáin 2008, 291). The larger *leacht* was located in an area of dense burial activity, so direct association is again improbable. The smaller *leacht*, however, was located over two burials in an area enclosed by a stone wall and otherwise devoid of burials. It could be argued that this *leacht* was intentionally located to mark these burials. O'Keefe (1994b, 16) states that the *leacht* at Omey, Co. Galway was built over a 'special burial' in a lintelled grave, but it was in an area of very dense burial so its position may have been coincidental.

The *leacht* at Trahanareer, Inishmurray, Co. Sligo was built on top of a rectangle of paving at the centre of which was a post hole surrounded by packing stones. The excavators noted that 'the central position of the post-hole leaves no doubt that the *leacht* was erected immediately after the post it had held was removed, because the exact position of the post would have been forgotten if there had been a substantial hiatus between the two monuments (O'Sullivan and Ó Carragáin 2008, 237). They interpret the post hole as evidence for a 'table altar' mounted on a single wooden prop, a type of altar that is said to exist in Ireland at that time (Thomas 1971, 176-78). O'Sullivan and Ó Carragáin (2008, 319-23) conclude that the *leachta* on Inishmurray were built 'towards the end of the first millennium A.D. or the first century or so of the seoncd and based on the available stratigraphic and radiocarbon evidence (*ibid.* 320-21). They suggest that they most likely functioned as altars and that 'a plurality of altars with different dedications was regarded as a basic requirement for important ecclesiastical establishments' (*ibid*. 323). *Leachta* would have been used regularly by the resident clerics but also as part of the liturgy of pilgrimage which was an important component of religious life during the early medieval period (*ibid*. 318-19). Ó Carragáin summarises these arguments in a later work: 'while it is possible that some *leachta* were outdoor altar graves, many seem instead to be monuments dedicated to saints buried elsewhere' (2010b, 191).

Round Towers

The round towers of Ireland have been the subject of frequent study (e.g. Lawlor 1999; O'Keeffe 2004). Lawlor's work provides a good corpus of the extant surviving and lost round towers, with a particular emphasis on constructional features of the monuments, reflecting the author's profession as an architect. O'Keeffe's work is more discursive and contains much speculation on the function of the towers, including their use as bell-towers (*cloig thech*) and ceremonial monuments associated with the expression of kingship. Stalley (2001) has also discussed the function and possible architectural templates for these monuments. The most comprehensive description of the individual towers is still to be found in Barrow's monograph on round towers (1979). Round towers are now widely accepted as an ecclesiastical monument which emerged in the tenth century, though became most common in the eleventh and twelfth centuries (O'Keeffe 2003, 72). They had a general common design with plain round-arched doors and windows frequently replacing lintelled equivalents during the

eleventh century. Irish Romanesque architectural details, 'ranging from minor mouldings to embellished cornices to spectacular portals', appear in the twelfth century on a small number of towers (O'Keeffe 2003, 72, 80-81). There have been several excavations of round towers, or their immediate vicinity, in the period under consideration in the present report.

Barrow (1979, 23) has argued that many round towers would have been built on top of substantial foundations filled with rubble cores. Lawlor also believes that foundations were a necessary feature of round towers, noting that on top of this was usually built a plinth in the form of 'concentric steps [that] occupy the space between the outer circle of the below ground masonry and the line intended for the wall-surface of the tower' (1999, 75). At Leigh, Co. Tipperary the circular foundation of rough limestone boulders was found to be 2.5m deep, with the bottom stones set deep down into the natural boulder clay (Barrow 1979, 25; Glasscock 1970:0030; Glasscock 1970, 31-34; 1971, 45-46). This, however, is the only tower to have provided evidence for such deep foundations. Excavation at the earlier tower at Devenish, Co. Fermanagh (Waterman 1973, 100-02), revealed that the foundation was comprised of a solid circular mass of stones bedded in 'good quality lime mortar, liberally used' (*ibid*. 101). The outside facing survived to only one or two courses. The upper levels, including any plinth, had been removed so the original height of the foundation height is unknown. There was no evidence, as was the case at Leigh, for the digging of a deep trench for the foundations. The southern part of the foundations were built on the 'natural surface' while the northern end were cut only about 0.25m into the old ground surface. This might explain why the tower failed and needed to be replaced. Waterman exposed an area of paving and associated postholes at the eastern edge of the structure which he proposed represents the approach to the original entrance and support for 'the landing at the first floor entrance' (*ibid*. 102).

These two excavations provide contradictory evidence about the nature of round tower foundations. At Devenish the 'foundations' were essentially an above-ground feature, while at Leigh they were constructed in a deep trench. Excavations on the outside of the base of the round at Ardmore, Co. Waterford reveal a combination of these foundation types. The tower had a single course plinth which sat on a 'footing of uncut sandstone slabs' with a depth of 0.5m-0.7m (Lynch 1996:0385). Lynch also noted that that shallow foundations have been recorded at other towers, e.g. 0.6m at Kilmacduagh, Co. Galway and 0.9m at Kilkenny, Co. Kilkenny. The excavator concluded that at Ardmore the 'ground level at the time of tower construction must have been little different of that of today'. This implies that the plinth was above ground and the foundation in a dug trench. Lynch (*ibid*.) refers to 'excavations' in the interior of the Ardmore tower undertaken in the middle of the nineteenth century which discovered that the base of the tower comprised of a layer of mortar which overlay a thick deposit of overlapping flagstones which in turn overlay another layer of mortar. This implies a solid circular foundation similar to that of Devenish. In contrast to this, Barrow's photographs of the Leigh foundation (1979, 25) indicate that they were comprised of a thick rough circular ring of stones, with a circular hollow area in the middle.

Several round towers were excavated in the nineteenth century by antiquarians who sought to establish if the basements were used for sepulchral purposes (e.g. Getty 1855), and a few other the basements have been excavated in the twentieth century (e.g. Clonmacnoise, Co. Offaly (Manning 2003, 85-92), Inishcealtra, Co. Clare (de Paor 1997, 86-87; Kerr *et. al*. 2009, 90; Barrow, 1979, 61-62) and Tullaherin, Co. Kilkenny (Hayden 2004:0930). Most of these investigations provided evidence for Christian burials that pre-dated the construction of the towers. These burials support the ninth-/tenth-century chronology for the Irish round tower which is usually achieved on the basis of architectural styles.

High Crosses

High Crosses are a common early medieval monument at the larger ecclesiastical sites. Stereotypically they frequently contain a ringed cross-head attached to a cross shaft, set into a pyramidal shaped cross-base though monolithic crosses with un-ringed and solid-ringed high crosses are also common. In 1964, approximately 120 crosses were known at 75 sites in

1964 (Henry 1964, 63-70); a figure subsequently increased to *c.* 270 crosses at 151 sites (Kelly 1986, 53-54). Harbison's two volume corpus of Irish high crosses (1992) represents the most comprehensive study of these monuments and describes 235 known high crosses and cross fragments. The various schools of high crosses are now generally regarded as dating mainly from the later eighth century to the tenth century, with a further revival during the twelfth century (Edwards 1990, 164-68)

A handful of excavations on high cross foundations have been undertaken as part of conservation work on the monument. These have found differences in the shape of the base – for example the base of the cross at Ballymore Eustace, Co. Kildare, was of the truncated, pyramidal shape favoured in early medieval Ireland (King 2004a, 168-69), whereas the base of the North Cross at Clonmacnoise, Co. Offaly seemed to be comprised of a re-worked millstone (Manning 1990:0096; King 1992b, 22-23). The cross at Ballymore Eustace sat on disturbed natural soil, and the excavator surmised that the cross was in its original position (King 2004a, 170), however, the South Cross at Clonmacnoise, Co. Offaly lay on top of early medieval cross slabs, as well as a fragment of post-medieval slab (King 1992b, 23). The evidence suggested that the broken slabs were not an original feature, and 'had been placed beneath the cross slabs in relatively recent times' (*ibid.*), thus it is unclear whether the cross had been moved or had merely been propped-up. The removal of the stone South Cross revealed a pit which may have supported the base of an earlier wooden cross (King 1994:0196). It is possible that the high crosses at Kells and Cashel may have been either moved or had support work done to them at some time in the past. The construction of the 1893 plinth under the Market Cross at Kells, however, had obliterated any earlier archaeological stratigraphy (King 2004b, 238), and plinth under the high cross at Cashel may have been constructed after the thirteenth/fourteenth century (Lynch 1983, 15-16).

Early Ecclesiastical Enclosures as Settlement Spaces

The annals and other early sources mention a whole range of different types of buildings and specialised communities living within Irish ecclesiastical settlements, for example a kitchen (*'cucann'*) is mentioned at Kildare in A.D. 915; a guest house (*'les oígedʼ*) at Armagh in A.D. 1003 (MacDonald 1981, 310-311); and a *magnus domus* ('great house') and guest house at seventh-century Iona, the former of which may have been a large, possibly circular, communal building for the religious community on the island (Edwards 1990, 113). Various specialized groups of people are also recorded including heads of monastic schools (*'fer legind'*) at Clonmacnoise in A.D. 857 (Bradley 1998, 45) and vice-abbots, sub-priors and anchorites (*'ancoire'*), at Glendalough (MacShamhráin 1989, 92-95). Various large ecclesiastical establishments also contained the sites of possible nunneries, frequently outside the main ecclesiastical core as evidenced at Clonmacnoise and possibly Glendalough (Harrington 2002, 201, 208, 228-29). While various structures have been identified in the archaeological record, it is more difficult to associate them with this array of buildings within the early medieval monastery.

Archaeological excavations have also highlighted the role of ecclesiastical sites as settlements where a diverse community of clerics, labourers and artisans lived together under the rule of church practice and custom. Emerging from this evidence has been a growing debate about the layout of western monasteries (Herity 1995b), the evidence for 'monastic towns' (Doherty 1985; Bradley 1998), and the social organisation, dwelling practices and economy of these settlement sites.

Trians

At some of the largest ecclesiastical settlements, many buildings may have been situated outside the main ecclesiastical core. Eleventh- and twelfth-century annalistic evidence describe the division of the area outside the *'rath'* surrounding Armagh cathedral into three precincts known as *trian Saxan* (English precinct), *trian masain* (middle precinct) and *trian mór* (large precinct) (Hamlin 2008, 229; Edwards 1990, 108-09). The annals describe the burning of the eastern *trian* of Clonmacnoise in A.D. 1082, which allows for the inference of other putative *trians* there as well (Bradley 1998, 45), and these *trians* would have contained

streets and houses for students, clerics, shrine-keepers and probably craftsmen (*ibid*. 44). An annalistic entry of A.D. 1090 describes the burning of the stone church of *Na Ferta* at Armagh together with 100 houses around it, while an early Anglo-Norman raid on Clonmacnoise in A.D. 1179 is said to have resulted in the destruction of 105 houses (*ibid*. 44, 46). Even allowing for some exaggeration, the figures would indicate relatively large habitation districts in the *trians* of both these two sites in the eleventh and twelfth centuries.

Excavations within the ecclesiastical enclosures at Armagh (Lynn and McDowell 1988b), Clonmacnoise (King 2009) and Downpatrick (Brannon 1988b) have produced domestic and industrial material of an early medieval date. The *trians* at Armagh may have formed part of a large outer enclosure measuring approximately 480m by 360m, but only small parts of its *trians* appear to have been built upon, particularly as excavations on the east side of Castle Street revealed that this area was open until the end of the later medieval period (Lynn 1977, 278). Excavations outside the ecclesiastical core of Clonmacnoise in the southeast of the New Graveyard also produced no stratified deposits of archaeology. This area was designated as the 'Fair Green' on O.S. maps and may have been the location in which 'the great fairs of Clonmacnoise were held' (King 2009, 345). Excavations have yet to identify evidence for a possible *trian* at Clonmacnoise but there is growing evidence for internal ditch divisions within ecclesiastical sites elsewhere, for example Inishcealtra, Co. Clare (de Paor 1997a, 52), 'Kilpatrick', Co. Westmeath (Swan 1976, 92; 1994-95, 4-5), Kill St Lawrence, Co. Waterford (O'Connell 2004, 27) and Kilhorne, Co. Down (Macdonald and McIlreavy 2007).

Domestic Timber and Sod Buildings

Excavations have identified a growing number of domestic structures and workshop evidence on all levels of ecclesiastical site (Table 4.4). As with secular sites (Lynn 1978a, 37; Lynn 1994, 83), roundhouses were the most common form of building from the sixth to the ninth century, with rectangular houses increasing in importance after this period. Numerous excavations at ecclesiastical sites have uncovered the possible remains of circular and rectilinear-shaped timber structures. In most instances they have been vaguely dated to the medieval periods and there is frequently very little information about their size or means of construction. At Church Island, Co. Kerry (O'Kelly 1958, 59-61), a wooden roundhouse was replaced by a stone-built one, and the excavator suggested that the wooden house was contemporary with the wooden church (although this could not be demonstrated archaeologically). The presence of iron slag suggests that this building may have also been used for industrial purposes (*ibid*. 69). At Illaunloughan, three mid-seventh-/mid-eighth-century roundhouses were found to have been constructed of sods in the same manner as the early church on the site (Marshall and Walsh 2005, 11-18). The flimsiest, most exposed and perhaps earliest structure (Hut C) appears to have been quickly converted to storage and industrial purposes. This is indicated by metalworking debris and may have been contemporary with the occupation of the conjoined huts (A and B) on the western side of the island (*ibid*. 18-22). Conjoined wooden houses – or figure-of-eight houses – were also present at a fifth- and early sixth-century church site at Caherlehillan, Co. Kerry (Sheehan 1998:0268).

A post-and-wattle roundhouse (6.25m diameter) was uncovered at Doras, Co. Tyrone (McDowell 1987, 138-144), and three roundhouses, with diameters of between 6m and 8.8m, were found at Killederdadrum, Co. Tipperary (Manning 1994, 245-248). Houses 2 and 3 at Killederdadrum were heavily truncated, but the absence of postholes or a slot trench suggested to the excavator that House 1 was constructed on sleeper beams (*ibid.* 245); four internal postholes in the form of a square suggested they had contained roof supports, and there was an informal central hearth (*ibid.*). A roundhouse defined by a slot trench (7.8m in diameter) was also excavated at Dunshaughlin, Co. Meath (Simpson 2005b, 230-33). The structure was later demolished and partially sealed by a dumped deposit of charcoal containing burnt grain and fragments of slag dated to between A.D. 615-705 and which provide a *terminus post quem* for the hut. The dumped deposit pre-dated industrial activity and an early medieval enclosing ditch (*ibid.*).

Excavations at both Clonmacnoise and Inishcealtra have produced the most significant evidence for domestic buildings at a major early medieval ecclesiastical site. A series of excavations at Clonmacnoise to the west ('Visitor Centre'), northeast ('New Graveyard') and northwest of the medieval ecclesiastical core produced significant evidence for three phases of early medieval habitation and industry (King 2009, 335-36, 1992a, 12-14; Manning 1989:0078, 1990:0096). The uppermost layer was disturbed by post-medieval agriculture and dated to the late-eleventh and twelfth centuries and consisted of flagged and cobbled area, pits, well-shafts and post-holes. The main occupation phase dated to the ninth and tenth centuries and was characterised by a number of houses and other structures. Below these were stake-holes and spreads of burnt soil dating to the seventh and eighth centuries (King 2009, 335-36). The unpublished excavations at Inishcealtra, Co. Clare revealed considerable evidence for circular and rectangular wooden buildings dating particularly to the eleventh and twelfth centuries and associated with a range of metalworking evidence (de Paor 1970:0006, 1971:0010, 1972:0006, 1973:0006, 1974:0009, 1975:0009, 1976:0010).

Curvilinear Drystone Cells (Clochauns)

Curvilinear drystone houses (*clochauns* (e.g. Fanning 1981, 88)) have been excavated at a number of a number of small western ecclesiastical sites (Table 4.5). They have a broad distribution across the west of Ireland but were particularly common on secular and ecclesiastical sites in the Kerry region (Cuppage 1986, 99; O'Sullivan and Sheehan 1996, 135). These *clochauns* rarely survive intact but typically contain inward battered walls which, in most but not all cases, corbel towards the apex of the roof. It is often difficult to identify whether some of these structures were raised in corbelled courses to the apex (in the *clochaun* tradition) or whether they consisted of low battered corbelled walls with a roof of turf or thatch. The drystone walls of the roundhouse at Church Island, Co. Kerry, were not weatherproof and it may have originally been insulated by a layer of sods on its exterior wall, supported by the stonework '*annulus*', a vertical slot that surrounded the house (O'Kelly 1958, 70-71). Houses A and B at Reask, Co. Kerry were also surrounded by a stone *annulus* which could have supported a turf windbreak (Fanning 1981, 87-92).

Excavations at Illaunloughan, Church Island and Reask, (all Co. Kerry) and Ballyvourney, Co. Cork have demonstrated that *clochauns* replaced earlier sod or wooden equivalents. Dating is problematic, but a sample from immediately under the wall of a *clochaun* at Illaunloughan, Co. Kerry produced a calibrated date of A.D. 775-961 (2Σ) (Marshall and Walsh 2005, 42), and other dating factors for occupation of the site imply that the house is unlikely to be later than the early-ninth century (*ibid*.). It is likely that the church and the stone cells A and B on High Island, Co. Galway are of the same date, and, since the construction of the church was bracketed by burials in the ninth and eleventh (Marshall and Rourke 2000, 121), the *clochauns* at High Island share a similar chronology with those at Illaunloughan. A partially destroyed stone roundhouse excavated at Trahanareear on Inishmurray, Co. Sligo (O'Sullivan and Ó Carragáin 2008, 216-39; 320-21), found no archaeological deposits in its interior, although the excavation established that a *leacht* (see below) dated *c.* ninth-/eleventh-century, was built over an area of paving associated with the cell (O'Sullivan and Ó Carragáin 2008, 216-39; 320-21).

None of the excavated *clochauns* have provided evidence for internal partitioning. Much of the interior of the stone house at Illaunloughan, for instance, had been disturbed, and the only surviving internal feature was an informal off-centre fireplace (Marshall and Walsh 2005, 148). Excavations of the *clochauns* at High Island, Co. Galway revealed stone-lined hearths with associated midden material (Scally 1997:0210; Scally 1998:0256), as well as paved floors which appeared to be set in the same mortar used on the church (Marshall and Rourke 2000, 90). There is no standard layout for these structures. The conjoined Houses A and B at Reask, Co. Kerry, for example, had a formal paved entrance into House B where there was a large informal hearth with post-holes at either end, possibly for supporting a spit (Fanning 1981, 87-92); however the smaller conjoined roundhouses (C and D) had no surrounding *annulus*, and the fireplace, actually a fire-pit, was in the inner house rather than in the house with the door.

The interior of the stone roundhouse at Church Island, Co. Kerry (4.5m diameter) contained one of the most intact floors of any early medieval house. The floor was sealed by charred straw which the excavator interpreted as representing collapsed burnt thatch (O'Kelly 1958, 68). The whole floor was essentially a trampled midden composed for the most part of shells, animal and fish bones, interspersed with burnt grain, with an oval spread of peat ash located off-centre. Twelve post-holes along the inside of the wall are likely to have contained roof supports, such as elbow crucks or some other variation (*ibid*. 123). The two post-holes at the sides of the door opening, however, may possibly have acted as door jambs (*ibid*.). A slightly curved rectangular arrangement of post-holes, 2m x 1m, located against the wall opposite the door was interpreted as forming the supports for a bed (*ibid.* 69). A drain, partially rock-cut, ran from the interior of the house out the door. In recent vernacular buildings, drains are indicative of the keeping of animals in a dwelling (Aalan 1997, 148), and Fanning (1981, 88) interpreted the late insertion of a similar drain into the conjoined houses at Reask, Co. Kerry as being evidence for their re-use as byres. It is unlikely, however, that the Church Island *clochaun* was a byre house and it is more likely that the drain was for human use, thus ensuring that the dwellers did not have to go out outside to relieve themselves, particularly during winter. Such sanitary arrangements have not been noted elsewhere in Ireland, but the exposed location of the house may have necessitated such an innovation. It is no coincidence that early examples in Britain are generally confined to similarly exposed coastal locations such as Skara Brae in Orkney and Jarlshof on Shetland (Holman 2007, 51).

Rectangular Stone Houses

Rectangular domestic buildings have been found on a number of ecclesiastical sites (Table 4.6). These tend to be later in date than their circular or curvilinear wooden/organic equivalents (King 2009, 345), and can be differentiated from churches by the presence of hearths and other domestic or industrial activity. Excavations in the 'New Graveyard', Clonmacnoise, Co. Offaly, for example revealed that house types evolved over the seventh to eleventh centuries from post-and-wattle structures, to larger roundhouses on stone-revetted platforms, to rectangular houses on similar footings (*ibid*.). This sequence is further confused by the fact that different house-styles may have been occupied at similar times, for example one stone-built rectangular structure, whose walls survived to a height of five courses, was roughly contemporary with an adjacent roundhouse, and both were surrounded by a walled-in metalled yard with a wooden gate (*ibid*. 335-36, 345).

The poorly-recorded rectangular house at Nendrum, Co. Down (internal dimensions of 9m x 4m), was identified as a 'school' by its excavator on the basis of the presence of styli and slate motif pieces (Lawlor 1925, 143-49). McErlean and Crothers (2007, 376-77), however, suspect that the building is of later medieval date and that the artefacts are from occupation layers predating its construction. At Church Island, Co. Kerry, the rectangular stone house, which measured 5.5m x 3.5m internally, was built on top of the rubbish midden discarded from the stone roundhouse. This house had two opposing doors in the gable ends, similar to the arrangement in the wooden houses in Fishamble Street, Dublin (O'Kelly 1958, 74-75). Like the roundhouse, it too had an internal drain that may have been for sanitary purposes, although the excavator believed that it was for the collection of water (*ibid*.). The roofing support system was similar to the round house (above), with a series of post holes at the base of the wall. The Church Island house is located immediately outside the monastic enclosure wall, and, on the basis of the early documentary evidence which indicate that the guesthouse was sometimes located outside the monastic enclosure, it has been interpreted as such (Marshall and Rourke 2000, 50-51). It should be noted, however, that the enclosure wall post-dated this rectangular house, and a similar function has also been ascribed to the large rectangular structure built against the south-eastern enclosure entrance at High Island, Co. Galway (*ibid.*). A rectangular stone house (E), with internal dimensions of 5.5m x 2.8m, was also built into the enclosure wall at Reask, Co. Kerry, (Fanning 1981, 94-95). Three rectangular houses were present at Kiltieran, Co. Galway (Waddell and Clyne 1995, 162-74), but their date could not be clearly ascertained with any degree of certainty, and much later finds were frequently found in the same stratigraphical horizons as early medieval material.

House I, as at Reask, was attached to the enclosure wall but the others were freestanding. House III was the largest with internal dimensions of 15.9m x 4.27m, and this structure is much larger than any known house from early medieval Ireland (Lynn 1994, 91).

Knowledge of monastic dwelling houses is biased towards small foundations along the Atlantic seaboard. The impression provided by the evidence is that these monastic cells provided accommodation for a small number of occupants, for example it is estimated that the two conjoined *clochauns* at Illaunloughan, Co. Kerry would have housed five or six occupants (Marshall and Walsh 2005, 16). Some of the documentary evidence, however, indicate that all the monks of a monastery, with the possible exception of the abbot, would have dwelt communally. MacDonald (1997, 36-38) has shown that the Adomnán's '*Life of Columba*' indicates that the monks on Iona lived communally and that their sleeping quarters was essentially a large dormitory.

'Streets' and Pathways

Paved pathways are generally not a feature of early medieval secular sites. Notable exceptions are the unique paved entranceway to Deerpark Farms, Co. Antrim (Lynn 1988f, 46) and some pathways outside the rectangular houses at Ballywee in the same county (Lynn 1988c, 33). They tend to be relatively common, however, on ecclesiastical sites. With many functional and domestic buildings scattered through, and around, a monastic enclosure, it is not surprising that annalistic sources often refer to 'streets' connecting these structures (Bradley 1998, 46). The term generally used is '*clochán*' ('paved way'), and although these were generally roughly metalled roadways, an eleventh/twelfth century reference to the unidentified monastery of *Cell Belig* mentions seven streets paved with recumbent pillar-stones (Ó Corrain 2005a, 346). A tenth-/eleventh-century metalled pathway was excavated beside a medieval church site at Chapelizod, Co. Dublin (Walsh 2002:0492) and may have been associated to its early medieval predecessor. In general, however, these formal pavements are associated with the 'sacred' structures within the monasteries. In Downpatrick, Co. Down, a pebbled pathway of unknown date seemed to lead to a medieval cemetery within the enclosure (Brannon 1988c, 3); and at Church Island, Co. Kerry, an extensive paved pathway, ran along the inside of the cashel wall, and connected the rectangular house (House 2) to the stone oratory (O'Kelly 1958, Plate XVII). A straight section of pavement extended from door of the church at Illaunloughan, while an 'L-shaped' length of pavement led to the entrance of the shrine (Marshall and Walsh 2005, 223). The entire area between the church enclosure wall and the church was paved at High Island (Marshall and Rourke 2000, 103), while at Reask, Co. Kerry, short sections of paving survived in the entrance areas of some of the buildings (Fanning 1981, 71, 75, 78-79), and more extensive areas of paving were found around the cells at Skellig Michael in the same county (Bourke 2005, 132). At Trahanareear, Inishmurray, Co Sligo, a paved pathway joined the cell and the *leacht* (O'Sullivan and Ó Carragáin 2008, 224), and at Relickoran, on the same island, a pavement of large sandstone slabs made a complete circuit of the enclosure. An area of cobbling with associated drains at Mainister Chiaráin, Inis Mór, Co. Galway provided early medieval radiocarbon dates (Ní Ghabhláin and Moran 1996:0161; Ní Ghabhláin 1998:0259); and other examples of early medieval paving and metalled paths have been excavated at Cashel (Cormac's Chapel), Co. Tipperary (Hodkinson 1994, 169-70, 173), Devenish, Co. Fermanagh (Waterman 1973, 102) and Aghavea, Co. Fermanagh (Ó Baoill 2000:0352).

The best annalistic references to streets come from Clonmacnoise where an entry for A.D. 1070 mentions two *clocháns*, one stretching from the cross of Bishop Etchen to the sacristy of St. Ciaran's church; and the other from the Cross of Congal to the mound of the three crosses and westwards from there to *Bél na Sráide*, identified as the eastern entrance to Clonmacnoise where the external road led into the interior of the monastery (Bradley 1998, 47). The early medieval wooden bridge over the River Shannon at Clonmacnoise, dated by dendrochronology *c*. A.D. 804, is indicative of some type of roads (*sráid*) in the immediate vicinity of the monastery (O'Sulllivan and Boland 2000). Later excavations at the *Bél na Sráide* produced evidence for the construction, maintenance and re-metalling of streets from the eighth to the twelfth century (King 2009, 345). One of these streets measured 3m wide,

and at least 18.5m long, although its full length ran beyond the scope of the excavation, and was clearly of early medieval date because it was cut by a pit dated to the late-eleventh century (King 1995:0240).

Models for the Layout of Ecclesiastical Settlements

Small Western Ecclesiastical Sites

The extant stone remains at western monasteries offer a unique glimpse into the layout and organisation of early medieval monasteries. The church or oratory, and the founder tomb or cross-slab, were the focal points of these early western ecclesiastical sites (Herity 1995b, 15). These focal structures tended to be situated towards the eastern sides of the enclosure with the domestic quarters frequently to the west facing across to it from an open space called the *platea* (Herity 1995b, 30, 59; Marshall and Walsh 2005, 128). The *platea* may have been used as a place of congregation or point of crossing between the domestic quarters and the church buildings. This layout can be found at Inishmurray, Co. Sligo, Loher (Kildreenagh), Reask (Herity 1995b, 59), Kilreelig (Herity 1995b, 35) and Illaunloughan, Co. Kerry (Marshall and Walsh 2005, 12, 38). The space did not need to be demarcated by partitioning walls though such evidence has been found at Reask (Herity 1995b, 30; Fanning 1981, 78) and Inishmurray (O'Sullivan and Ó Carragáin 2008, 14, 15). In the pre-Cormac Chapel phase (pre-1127/34) on the Rock of Cashel (Hodkinson 1994, 173), there also appears to have been a clear sense of separation in the space between a graveyard to the east and a more profane area to the west with the excavator noting that the subsequent Cormac's Chapel straddled this boundary with the chancel for the clergy in the eastern area and the nave for the laity to the west.

It might be argued that the location of domestic dwellings immediately inside the western enclosure wall might be due to purely practical considerations, as this would provide shelter for the living area from the prevailing southwest winds. At Church Island, however, the living accommodation tended to be on the eastern part of the site (O'Kelly 1958, Plate XVII). A small substantial quadrangular drystone wall (9m by 7m internally) pre-dated but enclosed the existing stone church at High Island, Co. Galway (Marshall and Rourke 2000, 121-24) and a retaining wall for burnt domestic refuse immediately outside this church enclosure produced a 2Σ radiocarbon determination of A.D. 728–971 (Scally 2000:0391). A similar central square wall also enclosed the church and cemetery at Kiltiernan East, Co. Galway (Waddell and Clyne 1995, 156-62, 185, 192). Two burials disturbed by the early medieval stone church were aligned with the central enclosure wall and it is possible that this enclosure may have been constructed on the same alignment as an earlier (wooden?) church, not identified during the excavation (*ibid*. 192).

The excavations at Illaunloughan and Church Island, Co. Kerry have revealed two major phases of occupation in which organic built domestic huts and churches were replaced by stone equivalents (O'Kelly 1958, 114; Marshall and Walsh 2005, 37). This transition was securely dated to the eighth century at Illaunloughan (Marshall and Walsh 2005, 127) and the buildings, finds and pottery from Church Island also indicate a similar date for this transition. The evidence suggests a conscious re-organization of these small western church sites in the seventh and eighth centuries, reflected through the superimposition of new Gallarus-style oratories and drystone huts on top of earlier organic structures and burials. Two major phases of activity were also identified at Reask, Co. Kerry with the second phase involving the repair of the enclosure and the internal partition of the areas between the church/cemetery and domestic houses (Edwards 1990, 118).

Most information for early Irish ecclesiastical sites is still derived from the excavation of small western examples such as Reask, Illaunloughan and Church Island; these clearly were not urban centres. Excavations of the large monasteries from east of the Shannon have been much more limited and much of the material has yet to be fully published. The extensive nature of the evidence from Armagh and Clonmacnoise, however, suggests that these may

have been settlements where many of their inhabitants were not directly involved in agriculture.

'Monastic Towns'

Away from the small western ecclesiastical sites, many church sites in Ireland appear to have developed into large religio-economic complexes, incorporating social, administrative and commercial aspects as well as pastoral care. As the main focus of population within the Irish Landscape, such sites could be regarded as fulfilling many of the criteria for civic urbanism, such as administration and trade (Doherty 1985). The complex layout of the major monasteries, with their sacred cores and *suburban* – an imitation of the biblical city of refuge (*civitas refugii*) – was also taken in support of this proto-urbanism (*ibid*. 57). This standard cosmological layout was imposed on ecclesiastical sites by *c*. A.D. 800, but it was only with the architectural monumentalisation of these complexes from the tenth century onwards that 'one might with confidence begin to use the word 'urban'" (*ibid*. 60). This chronology is often ignored by those who disagree with the 'monastic towns' hypothesis.

Towns are essentially large centres of population where most of the inhabitants are not engaged in agricultural activities. The absence of agricultural buildings in a settlement is therefore sometimes taken as an indicator of urbanism, for example the animal byres and granaries in eighth/ninth-century Dorestad were taken to indicate that the Dutch settlement had not yet fully developed into a town (Clarke and Ambrosiani 1991, 25-26). In contrast, the only agricultural building noted in Dublin was an out-building in Fishamble Street that seems to have been used as a farrowing pen (McCormick and Murray 2007, 226). The keeping of pigs within towns, however, was a common activity in later medieval Ireland (Cantwell 2001, 76-77). Unfortunately, the presence or absence, of agricultural buildings is of little use when considering Irish rural sites, either secular or domestic. Despite the references to barns and animal houses in the documentary sources (Kelly 1997, 243, 264-65) very few of these buildings have yet to be confidently identified in the archaeological record (Chapter 5). Bradley (1998) suggested that an ecclesiastical site should fulfil a range of criteria with evidence for settlement complexity, domestic houses and workshops, streets, trade, markets and fairs, enclosures and defence and a political role to be considered an early medieval 'monastic town'. He argued that Clonmacnoise fulfilled these criteria and indicated that the site may have been functioning as a 'monastic town' prior to the eleventh century (*ibid*. 50). The documentary sources suggest that the *trians* outside the ecclesiastical core of Armagh and Clonmacnoise were relatively densely settled areas. At Armagh there is considerable archaeological evidence, some of it dating to the sixth/eighth centuries, for burials and craft-working over 200 metres from the central core (Lynn and McDowell 1988b, 59-60; Lynn 1988a). Similarly, excavations at Downpatrick revealed considerable early medieval activity over 100m away from the cathedral on the southwest slope of the hill (Brannon 1988b, 62). The presence of craft-working, however, need not be an urban trait as there is evidence for such activity on many contemporary rural sites (Chapter 6).

The presence of house plots, and a more formal street layout, might also be regarded as urban traits (e.g. Bradley 1998, 46-47). These are best represented in Viking Dublin (Wallace 1992b), but there is also extensive evidence for the construction and continuity of house plots and streets at Clonmacnoise from the eighth to twelfth century (King 2009, 335-36, 345). Here the excavations revealed sixth/seventh century post-and-wattle structures, hearths, bone-working and ironworking at the core of the site – an area which was re-designated as a burial ground in the late seventh and early eighth century when a major expansion of the settlement occurred to the east with the construction of new areas of houses and streets. Further areas of expansion occurred to the north over the next three centuries with evidence for the continuity of house plots, the re-metalling of streets and the evolution of post-and-wattle houses into circular and rectangular structures on stone platforms (*ibid*. 345).

Faunal remains can sometimes be used as in indicator of whether a settlement was embedded in a livestock economy or had a more 'urban' character. The age slaughter pattern of cattle can indicate whether a site was a producer/consumer or simply a consumer

settlement. In the latter case the implication is that the site inhabitants were obtaining much of their beef from outside producers. In Ireland rural secular sites almost invariably produce patterns consistent with that of production and consumption. The age slaughter pattern from Clonmacnoise, however, is that of a consumer site and is similar to that noted in Scandinavian Dublin (Soderberg 2004; King 2009, 337-38). This implies that Clonmacnoise was obtaining much, if not most, of its beef from outside producers.

Evidence for trade and exchange at early medieval ecclesiastical sites is difficult to identify archaeologically but can be suggested by the recovery of imported coins and pottery. Gerriets (1985a, 132-33) suggests that the early Irish were using coins for both non-market (bullion exchange) and potentially market trade. Both Gerriets and Kenny (1987, 517; 2005, 844-45) cite the cluster of coin hoards at ecclesiastical sites including Armagh, Glendalough, Durrow, Rahan, Clonmacnoise, Monasterboice, and Kildare as potential supporting evidence for 'monastic towns', though are conscious that these hoards could have been deposited or lost at these sites for a variety of reasons. Early imported continental wares (e.g. Late Roman Amphorae and E ware) also frequently occur on ecclesiastical sites (Chapter 7) and some, such as the amphorae, are perhaps by-products of the importation of wine and olive oil by ecclesiastical communities in this period (Thomas 1959, 92; Doyle 2009, 19). The reference in the *Life of St. Ciarán* to '*mercatores cum vino Gallorum*', has been taken to indicate that Clonmacnoise was involved in a regional and insular networks of trade and exchange along the River Shannon and beyond (Bradley 1998, 47).

The concept of 'monastic towns' has, however, been challenged by a growing number of historians and archaeologists, for example Graham (1987, 12-14, 1993, 28-30), Ryan (1996, 162) and Etchingham (1996, 138). Valante (1998) and Swift (1998) have challenged Doherty's use of urban terminology such as '*civitas*' and '*suburbana*' in his discussion of seventh-century Kildare. This has led to 'the belief in the existence of somewhat ill-defined pre-tenth century towns… because of his use of seventh- and eighth-century texts which are laced with what appears to be urban terminology' (Swift 1998, 118). Swift has argued that urban terms like '*civitas*' and '*suburbana*' used by Doherty can be equated with terms like '*tabernaculum*', '*atrium*' and '*platea*' that were used to depict a distinctive Irish dispersed ecclesiastical settlement pattern. She also suggests that these terms were expressions used to describe settlement areas in both high status ecclesiastical and secular sites (*ibid*. 113-14), and thus it would be dangerous to see ecclesiastical sites 'as being organised in a fundamentally different way from secular sites' (*ibid*. 119). This terminology is evident in a Patrician hagiography which describes the royal Leinster site of Dun Ailinne as a '*Civitas Regalis*' (*ibid*. 114). It has been argued that: 'the functions of the subsidiary churches erected in the tenth and eleventh century clearly demonstrate that Irish ecclesiastical settlements did not develop into major urban centres' (Ó Carragáin 2010b, 219). Thus an increase in the numbers of structures does not necessarily imply a developing urbanism, and it is argued instead that the main drivers on Irish *civitates* 'were liturgical change, the diversification or religious…communities, royal patronage and a dogged adherence to long-established architectural and planning principles (*ibid*.).

Although most opponents accept some degree of 'urbanism' in Irish ecclesiastical sites by the tenth/eleventh century, Valante (1998) has challenged the notion of 'monastic towns' at *any* stage in early medieval Ireland. Though some large ecclesiastical sites may have appropriated the tribal *óenach* by the eighth or ninth century (Doherty 1980, 81; 1985, 67), and though fixed marketplaces defined by crosses may have emerged after this period (Doherty 1985, 98, 100; Swan 1985, 99-101), Valante (1998, 9) has strongly challenged the notion that these sites were at the centre of a redistributive economic system which emerged through interaction with tenth and eleventh century Viking coastal settlements (Doherty 1980, 71-80). While she acknowledges that the historical sources record houses and buildings around major ecclesiastical sites like Armagh, even by the eleventh and twelfth centuries, these sites cannot be described as 'urban' because the majority of inhabitants relied on agricultural production (*ibid*. 15-18). She has concluded that eleventh- and twelfth-century ecclesiastical sites were

surrounded by a dispersed form of secular settlement and that these places did not accrue an urban status until after the arrival of the Anglo-Normans.

Conclusion

Despite the enormous riches of the archaeological record for the early medieval church and its iconic role in early medieval studies generally, the chronological and structural development of ecclesiastical and hermitage sites during this period is still quite limited. Many western hermitage and monastic sites such as Illaunloughan, High Island and Reask, (all Co. Kerry) have been extensively excavated and there is a good understanding of the chronological development and organization of activities at these few sites. It is equally evident however, that few other ecclesiastical sites (with the exception of a very small number of sites including Armagh, Clonmacnoise and Clonfad) have been comprehensively excavated. As such there is still a lack of clear understanding about how ecclesiastical sites were organized in terms of industrial areas, cemetery locations, habitation areas and ecclesiastical structures during the early medieval period. It is also possible that a further study of the settlement, industrial and agricultural evidence may identify regional patterns in terms of the organization, character, layout and function of ecclesiastical sites during the early medieval period.

Table 4.1: Ecclesiastical enclosure ditches and walls dated to the Early Medieval Period.

Site	Enclosing feature	Comments and Dating evidence	Reference
Aghavea, Co. Fermanagh	Enclosure ditch	Ditch with internal palisade slot. Ditch was steep-sided and flat-bottomed with fragments of lignite and an early medieval blue glass bead within its fills. It had a maximum recorded width of 1.85m and depth of 0.80m and was recorded for a distance of 9m along the south-west of the site.	Ó Baoill 2000:0352, Ó Baoill 2000 Anon 2000, 4.
Ardfert, Co. Kerry	Enclosure Ditch and possible Causeway entrance	The church site was enclosed by a bank and external wide, shallow ditch. The enclosure contained a possible entrance causeway defined by two post-holes on its northern terminal, to the east of the Cathedral. The causeway was cut by two pits which contained fragments of bronze, animal bone and an iron chain with spike in its lower fill and green-glazed Saintonge pottery and two pillow stone burials at the top.	Moore 2007, 39-41
Armagh, Cathedral Hill, Co. Armagh	Enclosure ditch	Ditch concentric with graveyard wall midway between the wall and Castle Street. It was originally 6.4m wide at the top, V-shaped in section and between 2-3m deep and may have enclosed an area 50m in diameter. Twigs from organic matter in the bottom of the ditch above the primary silting produced a date of 1660±80 B.P. (UB-283) which calibrates as AD 130-600 2Σ and provides a *terminus post quem* for the ditch's construction. An outer bank was subsequently pushed back into the ditch soon after and the ditch was in part used for the disposal of early medieval metalworking debris.	Gaskell-Brown & Harper 1984, 109, 112-17, 156-58.
Armoy, Co. Antrim	Enclosure ditch	'The ditch was a maximum of 4m in width and 1.2m in depth and an iron staple and fragment of a decorated copper-alloy mount suggest that this feature dates to sometime around the 8th century AD'	Ó Néill 2004:0008 Nelis 2005:0007
Butterfield, Co. Dublin	Palisade Trench	A possible enclosing palisade trench dated to the earliest phase of a site at Butterfield. Animal bone, a penannular brooch terminal, iron knives and a 'pig fibula' pin were found in the palisade trench confirming an early medieval date. It was suggested that the site was probably ecclesiastical.	Carroll 1997:0184
Caherlehillan, Co. Kerry	Enclosing Wall	Enclosing wall was sub-circular in shape and 20m in diameter. Enclosure was a primary feature of church site yielding a 1445±70 BP (GrN-28343) or a 2Σ calibrated date of A.D. 433-687.	Sheehan 2009, 194-96 & 204
Carnsore, Co. Wexford	Enclosing bank and ditch	Enclosing ditch and bank. 40.5m x 33.5m in size. Bank 2.5-3.5m thick and 1m high. It was suggested by O'Kelly that the enclosure was broadly contemporary with 7/8th century wooden church and huts.	O'Kelly 1975; Lynch & Cahill 1976-77
Church Island, Co. Kerry	Enclosing wall	The remains of the cashel wall were 83m long. Missing sections 57m with an approximate total enclosing length of 140m. The walls were 1.5-2m thick and survived to a maximum height of 1m. The cashel dated to the final phase of the early monastery.	O'Kelly 1958, 75-77
Clonfad, Co. Westmeath	Enclosure ditches	Outer enclosure ditch was 3m wide x 1.7m deep. Inner enclosure ditch was 2.8m wide x 1.3m deep. Fills contained early medieval industrial refuse. 'Radiocarbon dates show the inner ditch was backfilled before AD 803-865'. It is not clear how this date was determined.	Keeley 2004:1724 Stevens 2006, 10; Stevens 2007b, 42-43; Stevens 2010.
Clonmacnoise, Co. Offaly	Enclosure ditch	Outer enclosure ditch measuring roughly 5m-6.2m wide x 3.8m deep. Animal bone from the bottom fill of the ditch produced date of A.D. 674-891 2Σ.	Murphy 2003, 13, 26
Connor, Co. Antrim	Outer enclosure ditch	Enclosure ditch on the east side of church measuring 3m wide x 1.5m deep and U-shaped in profile. Souterrain ware in the upper strata of ditch fills.	Brannon 1986:0002
Doras, Co. Tyrone	Inner enclosure	Ditch was 3.75m wide x 1.2m deep and V-shaped in profile. Twigs from the lowest deposit returned date of 1303±90bp. = A.D. 575-949 2Σ	McDowell 1987, 147
Downpatrick, Cathedral Hill, Co. Down	Enclosure ditch	Ditch was 3m wide x 2m deep. Primary layers of ditch produced 'few artefacts, but all were of Early Christian date' (Brannon 1988c, 5). Halpin (1998:0115) excavated 'a sizeable ditch running downslope (south) and cutting two lower curving ditches; their fills contained souterrain	Brannon 1988c, 5; Brannon 1988b, 63 Halpin 1998:0115

		ware'. It is unclear if these represent enclosing ditches.	
Dunshaughlin, Co. Meath	Enclosure ditch	Ditch and internal levelled bank on the north side of the site. Ditch post-dated an early medieval round house and industrial activity and was 4-5m wide at the upper levels and 1-1.4m wide at base and 2.2-2-.4m deep with sloping sides and flat base. Water was originally channelled from a nearby natural spring via a stone drain into the water-filled ditch. Primary infill radiocarbon dated to A.D. 785-975 suggesting a date when the ditch was open. Bank was later demolished and in-filled into ditch which was later re-cut. Re-cut ditch measured 2.80m wide at the upper levels and 1.6-1.8m wide at base and 1.8m deep. It was not water-filled and the infill of the ditch produced radiocarbon date of between A.D. 1010 and A.D. 1165 giving a *terminus post quem* for the ditch.	Simpson 2005b, 233-35.
Kells, Townparks, Co. Meath	Enclosure ditch	Enclosure/Ditch was 22m in diameter. It measured 2.2m wide and 1.5m deep and was V-shaped in profile. 'Finds from it [ditch] included a plain bronze brooch from very close to the base, possibly of 7th-century date. Other finds consisted of a bronze needle and ring fragment, an iron ring-handle, hook and knife, a furnace bottom and slag, a blue glass bead, a bone pin, a stone bead, whetstones and a flat perforated disc.	Byrne 1987:0041
Kilgobbin, Co. Dublin	Enclosure ditches?	A series of excavations were undertaken within the environs of Kilgobbin church in 2004 and uncovered a sequence of enclosures oriented on at least three distinct alignments. 'A glass bead with a zigzag decoration, preliminary dated to the early medieval period, was found in the top layer of one of the concentric ditches situated in the proximity of the church'. Other finds from the ditches included a selection of ferrous and copper-alloy pins, a fragment of a polychrome bead, a lignite bracelet, a highly ornate copper-alloy clasp and metalworking slag and crucible sherds.	Larson 2004:0644, Larson 2004:0645, Larson 2004:0646; Bolger 2004:0647
Kill St Lawrence, Co. Waterford	Outer and inner enclosure ditches	Outer enclosure ditch excavated in two locations on the southern and northern sides of the site. It measured a maximum of 6m wide x 1.48m deep. Charcoal from the primary fill of outer ditch produced a date of 1330±40 BP (Beta-183612) calibrated to A.D. 650-780 (2Σ). Previously unidentified inner enclosure ditch also excavated and measured a maximum of 2.3m wide x 0.96m deep.	O'Connell 2004, 27, 39-43, 61.
Killeany, Co. Laois	Enclosure ditch	Most of the southeastern quadrant of a large bivallate enclosure was excavated at Killeany, Co. Laois. The outer enclosure, measured 180 m by 150 m and was delineated by a single ditch, 3 m wide x 1.5 m deep. A cemetery was within a smaller inner enclosure that contained a curvilinear ditch with an excavated length of 35 m, and measuring 1 m wide and 0.5 m deep. The site has been identified as a possible early ecclesiastical foundation which had fallen out of use by the later medieval period.	Wiggins 2006, 33-35
Lackenavorna (Killederdadrum) Co. Tipperary	Enclosure ditch	Oval-shaped enclosure with a diameter of 72m east-west and 52m north-south. Ditch measured 2.8m wide at the top, V-shaped in section and 1.4-1.8m in depth below the surface. Possible grain drying kiln cut into inner slope of ditch produced date of 1000±60BP or cal. A.D. 895-1172 2Σ.	Manning 1984, 242, 268.
Lusk, Co. Dublin	Enclosure ditch	Outer enclosing ditch measuring 2.5m wide and 1.5m deep V-shaped ditch with straight sloping sides and narrow flat base. Sample of hazel charcoal from the second fill of the ditch was dated to A.D. 420-600. Finds from the ditch included animal bone, an iron nail and a piece of iron slag.	O'Connell 2009c, 52-54.
Maghera, Co. Down	Probable enclosure ditch	The ditch was V-shaped in profile and traced for 25m east-west across the site. Its ditch measured 4m wide x 2m deep and contained a homogeneous gravelly fill, in which sherds of souterrain ware were found.	Lynn 1980-84:0086
Nendrum, Co. Down	Enclosure wall	Charcoal from beneath the outer cashel wall produced a *terminus post quem* for the wall of 1375±45 b.p. (UB-2365).	Brannon 1977-79:0033
Randalstown,	Enclosure	Two sections of a large enclosing ditch measuring 4m	Kelly 1975:0032,

Co. Meath	ditch	wide and up to 2m deep were excavated. A Saxon glass bead was found in ditch.	1976:0020
Reask, Co. Kerry	Enclosing wall	Sub-circular drystone enclosure wall = 45m x 43m, 2.2m thick and five to six courses high. Enclosure wall dated to the earliest monastic phase (4th-7th century A.D.).	Fanning 1981, 98-100.
Tallaght, Co. Dublin	Enclosure ditch	A series of separate excavations have uncovered the remains of early medieval enclosing ditches at Tallaght. Excavations by O'Brien (1990:0043) uncovered a U-shaped ditch, 2.3m wide where it penetrated the boulder clay, and 1.3m wide at the base with evidence for a destroyed bank 2.6m wide, on its inner side. Charcoal, iron slag and animal bone were found in the fill and the ditch produced a date of 1210 ± 100 BP (GrN-18244) from one animal bone. Twigs from the base of a 'monastic ditch', 5m in width and 2.8m in depth produced 'a ^{14}C date of the mid-6th to 8th century' (Walsh 1997:0187). Excavations of two large concentric ditches at the same site produced medieval pottery but this was interpreted as re-cutting of the monastic ditch.	O'Brien 1990:0043 Walsh 1997:0187 McConway 1994:0102 McConway 1995:0111
Tullylish, Co. Down	Enclosure ditches	Inner ditch measured 5m wide x 2.9m. Charcoal from lower fill produced a date of A.D. 455-655 2Σ (1475±60 BP- UB 2671) and A.D. 340-605 2Σ (1590±75 BP UB 2673). Charcoal from fill of outer ditch measuring 5m x 2.85m produced date of A.D. 680-955 2Σ (1210±60 BP UB 2672). Souterrain ware also recovered from fill of outer ditch.	Ivens 1987, 112-113, 119.

Table 4.2: Excavated Early Medieval Wooden/Sod Churches

Site	Comments	References
Caherlehillan, Co. Kerry	A small rectangular wooden church, 3.8m x 2m in external dimensions defined by corner post-holes with its long axis aligned with the nearby burials. The church has been dated to between the mid 5th and early 6th centuries. A context overlying the wooden church produced a date of 1285±80 BP (GrN-28344) yielding a 2Σ cal. range of A.D. 621-631, A.D. 637-897 and A.D. 921-955. An internal post-hole positioned along the longer axis about one third of the way from its eastern end has been interpreted as a possible wooden altar. An internal drain was found and identified as a possible *sacarium* or ablution drain. A slab-covered sump lay directly outside the doorway and it was suggested that it may have been to drain the area of the church.	Sheehan 2009, 196-9, 204.
Carnsore Point, Co. Wexford	Possible wooden church. The excavator suggested that the church may have measured 2.25 by 1.5m in size though Harbison (1982, 628) offered alternative measurements of 6.25m x 4.25 based on the excavation drawings. Charcoal from 3 adjacent postholes inside the stone church interpreted as the remains of a wooden church produced a date of 1290±80 (Har-1380) or a 2Σ cal. range A.D. 607-942.	O'Kelly 1975, 22, 62-63; Lynch & Cahill, 1976-77, 55-60.
Cashel, Co. Tipperary	Wall represented by 'two parallel rows of rock-cut post-holes – there were probably four post-holes in each row, although the exact number is debatable'. The parallel postholes were about 1m apart and the excavator interpreted this to represent 'the south wall of a two-phase post-built church'. Suggested ninth or tenth century date. 'The size and form of the first church is debatable and the conclusion is that the church is 4.2m E-W and the N-S dimensions must lie between 2.5 and 4m'.	Hodkinson 1994, 170; 173
Church Island, Co. Kerry	Five rock cut postholes beneath the stone church indicated a rectangular building 2m wide and an estimated length of 3m. The lack of associated habitation refuse and its alignment with several burials suggested that it was a church.	Kelly 1958, 59
Church Island, Lough Carra, Co. Mayo	Excavation of this site confined to an area 13m x 8m incorporating a medieval church. Five levels were recorded. The earliest level (Level 1) revealed a large wooden structure, indicated by four post-holes. Another nine post-holes may represent evidence for other structures. A small rectangular building was defined by a shallow trench and two post-holes. A large hearth was located to the northwest of this building. These structures were excavated beneath the medieval wooden church and though it was not stated by the excavator, it is reasonable to infer that the large wooden building could	Ryan 1993:0173

	represent the remains of an earlier wooden church.	
Derry, Co. Down	Evidence for a composite timber structure supported on stone foundation walls were excavated below the south church. Short lengths of the wall footings were exposed indicating that the structure measured 4m wide	Waterman 1967b, 55, 67
Dunmisk, Co. Tyrone	A composite building of post holes and slot trenches, 3m wide x 4.5-7m. Its association with particularly elaborate graves suggested that was likely to be "the remains of a small church or shrine'	Ivens 1989, 60-61
Illaunloughan, Co. Kerry	Eastern end of a rectangular sod walled church. Width 2.0m. Length could not be determined but it is longer than the overlying stone church. Three post-holes were identified along the eastern border of the oratory. The basal sods of the church walls were retained by vertical flat stones fixed in slot trenches. A number of closely-spaced graves were placed behind the eastern wall of the primary sod oratory and appear to have been associated with this structure. The church dated to the 7th/8th century and pre-dated an 8th/9th-century stone oratory.	Marshall and Walsh 2005, 23-7, 152-5.
Iniscealtra, Co. Clare	The wooden church was excavated near St Caimin's church. A sequence of at least three phases was identified, not all on the same east-west alignment. The earliest earthen structure measured 5.5m x 4.1m internally with walls over 2.5m thick consisting of earth reinforced with rows of close-set wattles A stain at the east end of the building may represent the position of an altar.	Harbison 1982, 628-29.
Killellton, Co. Kerry	A series of habitation features, including spreads of charcoal enriched clay, pits and stake holes was found to extend under the east wall and clearly predated the oratory. A similar series of features was excavated in a new cutting in the centre of the church and also predate it. These stake-holes may have formed part of an earlier wooden church/structure though this was not stated by the excavator.	Manning 1987:0024; Manning 1988:0030
Kiltullagh, Co. Roscommon	Excavation was undertaken at the site of a raised, rectangular platform extending from beneath the boundary wall of the existing medieval ruins of the Kiltullagh church site. The excavations uncovered the remains of an earlier stone building which post-dated a possible wooden structure identified by post-holes and a destruction layer comprising burnt timber and thatch. There was small difference in the alignment of the post-holes with the orientation of the stone structure and ruined medieval church.	Gregory 2000:0858
Owenbristy, Co. Galway	Four corner posts of a rectangular structure – maximum dimensions 4.9m x 2.8m – were identified within a graveyard inside a 'cashel'. Two posts were radiocarbon dated to A.D. 580-690. The burials appear to respect this structure.	Lehane & Delaney 2010, 62.
Reask, Co. Kerry	Two post-holes 1.2m apart were identified to the west of the stone oratory and 2m south of the slab shrine. They dated to the earliest monastic phase and were tentatively identified as the possible remains of a wooden oratory.	Fanning 1981, 85-87
St Mel's, Ardagh, Co. Longford	Excavated by Liam de Paor. Harbison notes that it was 'unearthed beneath St Mel's church at Ardagh in Co. Longford, but although described in a lecture to the Royal Irish Academy on November 7th 1969, it has not yet been fully published'	Harbison 1982, 628.
White Island, Co. Fermanagh	A small trial excavation within the stone medieval church revealed a number of sleeper trenches, 0.45m deep and 0.2-0.3m wide at the flat bottom but stated that until more excavation was undertaken that 'it is profitless to guess their significance'.	Waterman 1959a, 65

Table 4.3: Excavated Gallarus-Type Oratories

Site	Size	Comments	References
Church Island, Co. Kerry	Approximately 5.7 x 3. 75m internally. approximately 8.5m x 6.5m externally	Gallarus-type drystone oratory with corbel-vaulted roof. Original floor surface consisted of a 2.1m layer of soil black in colour, inter-layered with organic matter as if straw or grass had been spread on the floor at intervals and trampled in.	O'Kelly 1958, 61-65
Croagh Patrick, Co. Mayo	5.57m (E-W) x 3.50m (N-S) internally. 7.76m (E-W) X 5.52m (N-S) externally	Drystone walled with evidence for corbelled roof. The door opening was at the eastern end. Evidence for occupation below the floor level. Charcoal from inside church	Walsh 1994:0186; Walsh 1995:0224; Walsh 1994

		produced date of A.D. 430-980 (Σ not stated). Unusual post-holes inside entrance are likely to be for a door structure.	
Gallarus, Co. Kerry	4.65m x 3.14m internally. 6.86m x 5.74m externally. Wall thickness: 1.0m - 1.2m thick	Limited excavation uncovered a plinth on outside of church. The interior does not seem to have been excavated.	Fanning 1970:0019;
Illaunloughan, Co. Kerry	3.2m (N-S) x 2.2.m (E-W) internally. Wall thickness: 1.3m - 1.6m	Drystone walled with evidence for corbelled roof. Entrance way was flagged with step-down to floor level. Much of interior covered with a formal grey-white pebbled clay/till flooring. The church was built on a deposit of 'pea gravel and shillet' which overlay the sod church.	Marshall & Walsh 2005, 42-46, 157-162
Killelton, Co. Kerry	4.87m (E-W) x 3.15m - 3.7m wide internally	Drystone oratory. Habitation levels pre-dated church. The south wall had drains running parallel to it on both the outside and inside. The inside drain ran under the threshold stone of the western doorway. The drains were probably built to divert runoff from the hillside to the south of the church.	Manning 1987:0024; Manning 1988:0030; Cuppage 1986, 304-05
Reask, Co. Kerry	3.50m x 2.70m internally. 5.71m x 4.67m externally.	Drystone walls survived only to less than 1m but excavator concluded that 'from its almost square plan and the rounded shape of its external eastern corners it seems reasonable to suggest that the oratory originally had a corbelled, dome shaped, roof'. Floor of 'hard trampled clay or daub' with paving in entranceway,	Fanning 1981, 76-8.
Skellig Michael (Little Oratory), Co. Kerry	2.45m x 1.85m internally. 4.05m (E-W) x 3.85m (N-S) externally.	Paving outside oratory was exposed but interior was not excavated	Lynch 1986:0032; Lynch 1987:0025
Skellig Michael (Large Oratory), Co. Kerry	3.65m x 2.45m internally. 6.1m (NE-SW) x 4.25m (NW-SE) externally	Post hole inside doorway. Floor of re-deposited boulder clay?	Lynch 1987:0025

Table 4.4: Excavated Early Medieval Wooden Buildings

Site	Structure	Location	Date	Reference
Aghavea, Co. Fermanagh	Buildings	Evidence for a ditch with internal palisade slot over which a structure was later built.	Early Medieval	Ó Baoill 2000:0352, Anon. 2000, 4.
Armagh, Scotch Street Co. Armagh	Building	Workshop		Lynn & McDowell 1988
Ballyvourney, *St Gobnet's House*, Co. Cork	Building	A (rectangular?) timber building defined by several large post-holes was excavated beneath a circular early medieval stone building known locally as St Gobnet's house. A number of internal pits with lumps of slag and furnace bottoms were found excavated and other associated finds included a blue glass bead, an iron spearhead, and an iron brad.	Early Medieval	O'Kelly 1952, 24-27; 36-39
Caherlehillan, Co. Kerry	Conjoined building	Stake-and post-holes near the centre of enclosure indicating the existence of two conjoined circular structures. Another post-holes structure excavated in southwest quadrant of the site close to the area of metalworking.	Early Medieval	Sheehan 1998:0268; Sheehan 2009
Carnsore, Co. Wexford		Traces of a possible building in the southeastern quadrant of the enclosure identified as a line of three post-holes connected to a gravel-filled trench containing flecks of charcoal, burnt sand and burnt stones. It was suggested that this building was contemporary with the phase 1	Early Medieval	O'Kelly 1975, 22-3, 62-3.

		wooden oratory as they were on the same stratigraphical level. A sample (Har-1382) from the trench produced a date of 1390±80 BP or a 2Σ cal. range of A.D. 435-856.		
Church Island, Valencia, Co. Kerry	Circular building	East of oratory in centre of enclosure. Part of a circular wooden hut (6m in diameter) defined by an arc of stone slabs set on edge was uncovered on the western side of the circular stone house (1). A layer of habitation refuse containing charcoal, winkle, limpet shells, animal bone and a large quantity of iron slag were associated with this building.	Early Medieval Phase 1	O'Kelly, 1958, 59-61
Church Island, Lough Carra, Co. Mayo	Rectangular building	A series of post-holes beneath and in the area of the medieval church were interpreted as evidence for structures. A hearth was excavated to the northwest of a small rectangular structure. The excavator never stated whether any of these structures may represent the remains of a church.	Early Medieval	Ryan 1993:0173
Clonfert, Co. Galway	Buildings	Early medieval buildings and activity in the field to east of Clonfert Cathedral, in the vicinity of a possible outer ecclesiastical enclosure.	Early Medieval	Walsh and Hayden 2001:0496
Clonmacnoise, Co. Offaly	Circular and rectangular buildings	Excavations at the Steeple Garden to the west of the medieval graveyard (Visitor Centre), the area of 'New Graveyard' to the northeast of the medieval core and the sloping ground to the northwest extending from the Visitor Centre to the River Shannon banks. Three main early medieval phases of settlement, industry and economy dating from the 7th to 12th century. Earliest post-and-wattle houses were replaced by larger circular houses and (later) rectangular houses built on stone-revetted platforms over the floor plain.	Early Medieval	Manning 1989:0078, 1990:0096; King 1992a, 12-14, King 2009, 335-36; 345
Doras, *Tullyniskan td*. Co. Tyrone	Circular building	Southwest of extant church immediately inside excavated possible enclosure ditch. Post-and-wattle circular structure with a diameter of 6.25m.	Early Medieval	McDowell 1987, 138-144
Downpatrick, Co. Down	Circular building	Southwest slopes of Cathedral Hill	Early Medieval	Brannon 1987:0012, 1988b and c
Dunmisk, Co. Tyrone	Circular buildings	Southwest quadrant of enclosure; Metalworking area	Early Medieval	Ivens 1988a, 1989
Dunshaughlin, Co. Meath	Oval building	Foundations of a round house, 7.8m in diameter defined by a slot-trench in the northeast corner of the site. Structure was later demolished and partially sealed by a dumped deposit of charcoal containing burnt grain and fragments of slag dated to between A.D. 615 and A.D. 705, providing a *terminus post quem* for the hut. The dumped deposit pre-dated industrial activity and an early medieval enclosing ditch.	5th/7th century	Simpson 1995:0230; Simpson 2005, 230-33.
Dysart, Co. Kilkenny	Circular building	Southwest of medieval church. Circular structure defined by post-holes with an internal pit containing a large quantity of iron slag.	Early Medieval	Murtagh 1994
Glendalough, Temple-na-skellig, Co. Wicklow	Circular building	Evidence for wattle huts connected by paved paths in earliest phase 'which may be of Early Christian date'. Structures were subsequently destroyed by an avalanche of slabs. The slabs were later cleared away and a late medieval wooden house resting on a base of stones was built in the middle of the platform		Long 1994, 253, 263
Illaunloughan, Co. Kerry	Conjoined sod-walled	Conjoined Sod-walled hut A (3.7m internal diam.) and B (3.7m internal diam. & 6.7m	7th/8th century	Marshall and Walsh 2005, 11-18; 140-47

	building (A & B) and circular building (C)	external diam.) against western wall of monastery and dating to Phase 1 of the monastery. Another circular Sod-walled Hut (C) on southwestern side of island. Metalworking debris over the hut indicates it was used later for industrial purposes and this late use may have been contemporary with the conjoined huts (A and B)		
Inishcealtra, Co. Clare	Circular and rectangular buildings	Rectangular and circular wooden structures associated with metalworking.	11th-12th century	de Paor 1970:0006, 1971:0010, 1972:0006, 1973:0006, 1974:0009, 1975:0009, 1976:0010, 1980-84:0043
Inishkea North, Co. Mayo	2 Buildings	Timber structure (House A- Site 3) uncovered on a flat sandy platform to the northeast of the mound called Bailey Mór. Hut measured 7.2m x 6m and was built of large wooden posts and probably wattle-and-daub walls. Associated with various industrial activities including the production of chlorite objects and preparation of dye.	Early Medieval	Henry 1951b, 75-76; Henry 1952b, 163-78.
Kilpatrick, Corbetstown, Co. Westmeath	Circular building	Southern area of enclosure. Foundation trench of circular building 7.4m in diameter. Fragments of antler and metalworking associated with building.	Early Medieval	Swan 1975:0036; Swan 1976, 92-3.
Lackenavorna, Killederdadrum, Co. Tipperary	3 circular buildings	Three circular buildings defined by circular trenches with diameters of between 6m and 8.8m. Building 1 was situated on the western side of enclosure and 2 and 3 on the north side of the enclosure. The absence of post-holes or a slot-trench suggests house 1 was constructed on sleeper beams.	Early Medieval	Manning 1984, 245-48
Movilla Abbey, Co. Down		Vast number of small post- and stake-holes, pits and gullies associated with early medieval glass- and metalworking However, no coherent plan of any building were identified.	Early Medieval	Ivens 1984b, 106
Reask, Co. Kerry	Circular building	A possible circular wooden building formed of large post-holes was examined in the in the central enclosure area of the enclosure and dates to the primary occupation phase of the site. It was associated with a hearth and a habitation deposit containing LR1 ware sherds.	Phase 1-4th-7th C.	Fanning 1981, 102-05, 155.

Table 4.5: Excavated Early Medieval Drystone Curvilinear Cells

Site	Structure	Location	Date	Reference
Ballyvourney, *St Gobnet's House* Co. Cork	*Clochaun*	Circular stone cell with internal floor diameter of 6.1m associated with considerable metalworking evidence. Post-dated earlier wooden structure. Internal central post for support of roof.	Early Medieval Phase 2	O'Kelly 1952, 19-24; 36-39
Church Island, Co. Kerry	*Clochaun*	East of oratory and in centre of enclosure Circular Stone cell with internal diameter of 4.5m. Post-dated a circular wooden hut. Roof supported by internal wooden uprights such as elbow crucks.	Early Medieval Phase 2	O'Kelly 1958, 66-71; 122-23
High Island, Co. Galway	*Clochaun* B Scriptorium	Built against the eastern side of the church's enclosure wall. Large Cell (B) 2.63m x 2.74m internally. Originally corbelled to the apex of the building.	Early Medieval	Scally 1997:0210, 1998:0256, Marshall & Rourke 2000, 132-36
High Island, Co. Galway	Rectangular stone cell (A) (Abbot's cell)	Built into north wall of ecclesiastical enclosure. Little Cell (A) 2.1m x 1.9m internally. Originally corbelled to the apex of the building.	Early Medieval	Scally 1997:2010, 1998:0256, Marshall & Rourke 2000, 59-60; 130-31.
Illaunloughan, Co. Kerry	*Clochaun* D	South-western edge of the island. Diameter = 4.3m-4.4m. Originally corbelled to the apex of the building. Post-dated phase 1 hut (C and conjoined huts (A and B) located few metres to the north.	Phase 2: 8th /early-9th C.	Marshall & Walsh 2005, 37-42
Inishkea North, Co. Mayo	Conjoined cell	Dry stone Conjoined Beehive structure (B and C) situated on the northeast slope of the Bailey Mór.	Early Medieval	Henry 1945, 134-40, Henry 1951b, 75-76.

		Square inside and rounded with protruding corners outside. Originally corbelled to the apex of the building. House C measured 3.3m x 3.9m feet internally. House B heavily disturbed.		
Inishmurray, Trahanareear, Co. Sligo	*Clochaun*	Situated on an eroding cliff edge at western end of Inishmurray island. Remains of a sub-circular Cell with diameter of 1.8m and wall thickness of 0.8m with an associated area of paving. A *leacht* (9th - 11th century) was built over the paved area and the site was enclosed in Phase 2.	Early Medieval Phase 1	O'Sullivan & Ó Carragáin 2008, 216-39; 320-21
Reask, Co. Kerry	*Clochauns* (A & B)	Built along the northern line of the primary enclosure wall Cell A: Int. Diam.= 5.5m. Cell B: Int. Diam.=6.1m. Wall thickness 1.2-1.3m. Roof probably supported by internal posts.	Early Medieval Phase 2	Fanning 1981, 88-92
Reask, Co. Kerry	*Clochaun* (C & D)	Built into the western line of the enclosure wall. Cell C: Internal Diam.= 3.6m x 4m. Cell D: Internal Diam.= 4.5m. Wall thickness 1.10. Probably corbelled to the apex of the building.	Early Medieval Phase 2	Fanning 1981, 91--94
Reask, Co. Kerry	*Clochaun* F	Situated in the south-eastern sector of the site. Cell (F) Int. Diam.= 3.5m. Wall thickness= 90cm. Probably corbelled to the apex of the building.	One of the earliest cells	Fanning 1981, 96
Reask, Co. Kerry	*Clochaun* G	Basal courses of building tied into the north-eastern line of the enclosure wall. Cell (G) Internal Diameter = 2.75m. Wall thickness 0.80-1m.	One of the earliest cells	Fanning 1981, 97-98
Skellig Michael, Co. Kerry	*Clochaun*	'Monk's Garden'. Areas of paving uncovered associated with the various cells.	Early Medieval	Bourke E 2005

Table 4.6 Excavated Early Medieval Rectangular Stone Buildings

Site	Structure	Location	Date	Reference
Church Island, Co. Kerry	Rectangular (external rounded corners)	Northeastern edge of island. Wall thickness 1.5-1.8m and 5.5m x 3.8m internally. Post-dated the circular stone house. Enclosure wall built into (post-dated) rectangular house, dividing it from other monastic buildings. Roof supported by internal posts.	Final Early Medieval Monastic Phase (3)	O'Kelly 1958, 73-75
Clonmacnoise, Co. Offaly	Stone buildings	Rectangular and circular houses built on stone-revetted platforms in the 'New Graveyard' to the northeast of the medieval ecclesiastical core (King 2009, 345). One rectangular house situated 1m west of a circular house defined by a semi-circle of large boulders (8.5m diameter) measured 6.2m by at least 3.4m internally and built of boulders to a height of five courses.	8th-10th C.	King 1993:0187, King 1996:0324; King 2009, 335-36; 345
Inishkea North, Co. Mayo	Rectangular stone buildings	Various stone buildings excavated at Inishkea North in 1938 and 1950. One rectangular hut was situated to the southeast of conjoined beehive huts (B & C) on the northeast slope of the Bailey Mór. Walls lined with upright slabs and slightly corbelled layers of flags laid horizontally. Other drystone huts excavated in 1950 formed a compact group of rooms with walls of stone and earth.	Early Medieval	Henry 1945, 137-40, Henry 1951b, 75-76; Henry 1952, 164.
Kiltiernan East, Co. Galway	Rectangular (I) external rounded corners	Southeast corner of the enclosure. House 1 was c. 7m x 3.96m internally. Walls survived to two courses high and were constructed with rubble masonry. Mortar bonding is not mentioned. Finds included a quern fragment, tanged knife and slag.	Early Medieval	Duignan 1951; Waddell and Clyne 1995, 162-68.
Kiltiernan East, Co. Galway	Rectangular (II) external rounded corners	Southeast corner of the enclosure. Internal dimensions of 15.9m x 4.27m. This drystone structure was poorly preserved and where extant contained a single wall course. Finds included an early medieval iron looped pin and quantities of un-stratified slag.	Possible Early Medieval	Duignan 1951; Waddell and Clyne 1995, 168-72.
Kiltiernan East, Co. Galway	Rectangular (III) external rounded corners	Southeast corner of the enclosure. Drystone structure with external dimensions of 6.4m x 4.27m. The walls were 0.97m-1.22m wide and survived to one to two courses high of rubble masonry. Find included iron slag and an early medieval bone die just outside the northeast wall.	Early Medieval	Duignan 1951; Waddell and Clyne 1995, 172-74.
Mainistir Chiaráin, Oghil,	Stone building (B)	Robbed-out stone Building (B) abutted south wall of church and pre-dated a 16th/17th C building (A).	Possible Early	Ní Ghabhláin & Moran 1996:0161;

Co. Galway		Cobbled surface delimited by a drain uncovered beneath the west wall of building B. The fill of the drain contained early medieval finds and dates of 1190±60 BP, 1250±60 BP and 1280±50 BP were recorded for its fill, the surface overlying it and on either side of it.	Medieval	Ní Ghabhláin 1997:0221; 1998:0259; 1999:0306.
Reask, Co. Kerry	Rectangular cell (E)	Built into the southern line of the enclosure wall. Cell (E) internally 5.5m X 2.8m. Wall thickness varies from 1.25-1.6m. Roof supported by internal post-holes.	Early Medieval Monastic Phase 2	Fanning 1981, 94-96.

Chapter 4: Early Medieval Death and Burial

The centuries from A.D. 400-1100 have traditionally been termed Ireland's 'early Christian period', reflecting the dominant role of Christianity in the ideology, belief systems, art and architecture of the Irish at this time (e.g. Henry 1965; de Paor and de Paor 1967; Lynn 1986; Charles-Edwards 2000; Kerr 2007). It is now thought that the Christian conversion of Ireland was a slow process, with local and regional variations, and it is possible that some pre-Christian beliefs and practices survived into the latter part of the first millennium. Old traditions died hard and the deceased were often interred in a variety of diverse, often ancient, burials. Parallels may be drawn between Ireland and England during these centuries, and studies of paganism and Christianity in Anglo-Saxon England have argued that people drew from both belief sets eclectically and expressed their localised worldviews through a range of material practices, depositions and uses of the past (Carver et al. 2010).

There are numerous publications of early medieval cemetery excavations (e.g. Clarke and Carlin 2008; Manning 1986a; O'Neill 2008); key syntheses on the burial practices of the peoples of early medieval Ireland have been produced by O'Brien (1992, 1993, 1995, 1998, 1999a, 2003, 2009); as well as an edited volume on *Death and Burial in Early Medieval Ireland* (Corlett and Potterton 2010). There are a number of published osteological reports – e.g. Howells 1941; Power 1994; Buckley 1991, 2003, 2008, 2010; Buckley and McConway 2010; Ó Donnabháin 2001; Ó Donnabháin and Hallgrímmsson 2001; Fibiger 2005, 2010; Fibiger *et al*. 2008; Channing and Randolph-Quinney 2006; Hallgrímmsson *et al*. 2004; Mount 2010 – which are key for understanding the populations of early medieval Ireland; their life, physical health and diet and the ways in which their social identities of kinship, social status and gender were 'embodied' (i.e. experienced and performed 'through the body').

Changes in practice and beliefs across time have been revealed in archaeological excavation of early medieval burials and cemeteries. There are differences in the natures and location of burials that date from the fifth-/sixth-century transitional Iron Age/early medieval period, and those from the subsequent Christian early medieval period (e.g. Eogan 1974; McCormick *et al.* 1995; O'Brien 1992; 1999a; 1999b; 2003; 2009; McGarry 2005; 2007; Clarke and Carlin 2006a; 2006b; 2009). This is further confused in the ninth and tenth centuries with the subsequent re-introduction of 'Pagan' Viking burial rites (Hall 1974, 1978; Sheehan 1987; Ó Floinn 1998a, 1998c; O'Brien 1995, 1998; Harrison 2001; O'Donovan 2008; Simpson 2003, 2005). There are also an idiosyncratic range of human burials placed in anomalous contexts throughout the early medieval period. These include early medieval house floors, e.g. Newtown, Co. Limerick (Coyne and Coyne 2003, 17-18), and caves, e.g. Cloghermore, Co. Kerry (Connolly 2000; Connolly and Coyne 2000, 2005) and Kilgreany, Co. Waterford (Dowd 2001, 2002; Movius 1935). Bodies were also discarded in ditches, e.g. Dowdstown 2, Co. Meath (Cagney and O'Hara 2009), pits, e.g. Lismullin 1, Co. Meath (O'Connell 2009b), and even abandoned cereal-drying kilns, e.g. Raystown, Co. Meath (Seaver 2006, 2010) and Colp West, Co. Meath (Clarke and Murphy 2001:0952). These anomalous or 'deviant' burials may represent ritual executions, political acts, or they may relate to the treatment of strangers, the victims of plague or violence, or other socially marginalised people.

This chapter describes and analyses the wide range of early medieval burial evidence that has been discovered in Ireland, A.D. 400-1100. The first section describes the key rites and practices used in burying the deceased – i.e. the actual treatment of the body itself – as well as the location of the burials. During the early medieval period in Ireland there appear to be three main types of burial-grounds – traditional; ecclesiastical; and pagan Anglo-Saxon/ Viking. There is also emerging evidence for a distinctive and new type of archaeological site used right across the early medieval period – the 'settlement/ cemetery' sites (e.g. Kinsella 2010; Manning 1986a, O'Neill 2008; Seaver 2010; Seaver and O'Sullivan forthcoming; Stout and Stout 2008). This will be discussed in greater detail in the second section.

Burying the Dead in Early Medieval Ireland

Early medieval people in Ireland buried their dead in a variety of ways, using a number of different rites and practices. These may be identified by the various shapes in which the body is positioned in the grave, and the presence of grave goods, clothes, or items of stone and wood (O'Brien 1992; 1993; 1995; 1998; 2003; 2009). There are a few early medieval cremations – a low mound at Forenaughts Great, Co. Kildare (Grogan 1984) contained a cremation burial dated to the fifth century A.D.; a barrow at Furness, Co. Kildare (Grogan 1984, 304) contained a cremation dating to A.D. 430-590 (2Σ); and a cremation from Knoxspark, Co. Sligo was dated to A.D. 559-971 (Mount 2010, 203) – but the dominant burial practise is inhumation. Occasionally inhumation burials may be prone (i.e. lying face down) or flexed (i.e. legs drawn slightly upwards). Such burials have been interpreted as being contingent on events, e.g. hurried inhumations during times of war or disease, or as reflect specific cultural practices, e.g. Anglo-Saxon influences or the treatment of marginalized people such as criminals or outlaws. West-east orientated extended supine inhumations (i.e. lying face up with the head to the west), however form the predominant burial rite from the fourth century A.D. to the present – although often these have been described in excavation reports as east-west burials. Similar graves are found in Roman-Britain in the second and third centuries A.D., and the orientation of a body in the grave, with the head to the west, is not necessarily an indicator of Christian funeral rites (O'Brien 2009, 138). The supine inhumations in Ireland are generally not accompanied by grave-goods, and are predominantly found in simple earth-dug graves, or in graves outlined with stones or lined with slabs (O'Brien 1992; 2009). As a result, clothed burials, or those accompanied by wooden biers, grave-goods, 'earmuffs' (i.e. stones placed to either side of the head), 'pillow-stones' (i.e. stones placed under the head) or other features, should be subjected to closer scrutiny.

The treatment of the corpse, as well as the presence or absence of grave furniture, shows some chronological development through the early medieval period. There is, for example, a gradual shift away from burying an unwrapped body towards burying a body tightly wrapped in a shroud-cloth. There are also a few practices, such as the use of pillow-stones and earmuffs, e.g. Mount Offaly, Co. Dublin (Conway 1999) and Cherrywood, Co. Dublin (Ó'Néill 2006), that, although rare, can be found across all periods. Simple earth-dug graves are used throughout the entire early medieval period, but funeral rites may vary within burial grounds. Stone-lined cists are dated to the fifth/sixth century (O'Brien 2009, 139), and lintelled graves (i.e. graves outlined by stone slabs at the edge and end) have been dated to the seventh/eighth century (*ibid*. 145), yet both have been found to be contemporary with the earth-dug graves on a number of sites (*ibid*.). Other sites, however, show a chronological variation between burial rites, for example fifth-century slab-lined inhumations at Ballymacaward, Co. Donegal were succeeded in the seventh century by simple earth-dug burials (O'Brien 1999b).

By the seventh/eighth century in Ireland, the standard burial was an extended west-east inhumation usually, but not always, wrapped in a shroud and interred in lintelled and/or simple earth-dug graves, and located in an ecclesiastical cemetery (O'Brien 2003, 67). Simple earth-dug graves comprise the majority of the burial evidence recovered from ecclesiastical cemeteries, although lintel burials and graves containing earmuffs (and very occasionally pillow-stones) were also found.

The locales used for burial show a degree of continuity between the pre-Christian and Christian eras. Hill-tops and ridge-tops appear to have been significant locations for Iron Age/early medieval transitional cemeteries, and other topographical features, such as rivers and streams, may have also been foci of burials in this period. One possible interpretation of this distribution is that the pre-Christian burial grounds were located on or close to significant political boundaries, for example many Iron Age bog bodies have been found along the edges of putative tribal territories (Kelly 2006). The antiquity of these divisions is a matter for debate although it is worth pointing out that two excavated transitional burial grounds are set on modern county borders – Kiltullagh on the Roscommon/Mayo border (McCormick *et al*. 1995), and Johnstown on the Meath/Kildare border (Clarke and Carlin 2008). It is evident

that these Iron Age/early medieval traditional cemeteries displayed a preference for pronounced topographical points which served as boundary markers and were often imbued with significant mythological, ancestral and political meanings (O'Brien 2009, 142). It has been noted that there was a 'tendency to locate churches on the boundaries of territorial units' (Ó Riain 1972, 19). Since there is little evidence for the consecration of traditional burial grounds, it seems that the liminal locations of churches may have more to do with contemporary politics and the physical geography, rather than the Christianising of earlier cult centres or cemeteries.

Iron Age/Early Medieval Conversion-Era Burial Grounds

At the beginning of the early medieval period the dead were being buried in traditional, possibly familial, burial grounds, occasionally defined by small, annular/penannular enclosures or 'ring-ditches'. Historical sources refer to the continuing practice of burial within un-consecrated cemeteries in the sixth/seventh centuries (O'Brien 1992, 133; Bhreathnach 2010, 23), for example in the *Collectio Canonum Hibernensis*, Tírechán mentions the burial of two daughters of a king inside a round ditch: 'after the manner of a *ferta*, because this is what the pagan Irish used to do' (Bieler 1979, 144-45). Early Irish sources indicated that the Irish were reluctant to abandon their ancestral or familial burial grounds (O'Brien 1999a), and there are numerous references to burials taking place in *fertae*. '*Ferta'* has tended to be translated as 'burial mound', but Tírechán, in his *Life of St Patrick*, states that *fertae* had a 'rounded ditch' (O'Brien 19992, 133), and Charles-Edwards (1993, 260) has argued that a more thorough definition of *ferta* would be a 'collective' burial place enclosed by a bank and ditch. On this basis, fifth-/sixth-/seventh-century descriptions of pagan *fertae* may refer to Iron Age/early medieval ring-ditches or ring-barrows (O'Brien 1992, 133), and several possible examples are given (O'Brien 2003). This claim is explored in greater detail by Bhreathnach (2010, 23-32), who also highlights the use of mounds (*carn*, *duma* and *síd*) and standing stones (*lía*) as grave markers (*ibid*. 24-25). Mounds were important funerary markers in the Late Iron Age/early medieval transitional landscape and had territorial and political significance, for example the 'twelve marks' by which a boundary is defined in the *Bretha Comaithchesa* ('Judgements of Co-Tenancy') include a 'mound mark... i.e. a district marked by a mound, or ditch, or rath, or fosse, or any mound whatever' (Richey 1879, 145).

There is clear archaeological evidence for the re-use of earlier pagan burial places during the fifth, sixth and seventh centuries A.D., and certain sites may have been continuously used as cemeteries from the pre-Christian Iron Age through into the early medieval period. It also seems likely that a number of traditional burying grounds may have been built during the transitional centuries between the pagan Iron Age and the arrival of Christianity, and these largely seem to have been modelled on pre-existing burial places.

Re-use of Earlier Monuments

Ring-barrows (i.e. earthen mounds incorporating burials and enclosed by a circular ditch) appear to have been widely used in Ireland from the second millennium B.C. onwards (Waddell 1998, 365). Some of these survived intact into later periods, but in other cases the mound had been removed leaving only the enclosing ring-ditch. A number of these sites were the subject of re-use during the early medieval period. Five east-west orientated burials were cut into a Bronze Age ring-barrow at Bellinstown, Co. Dublin (Lynch 2002:0473), and three burials were excavated within a 'pennanular enclosure' at Cloncowan, Co. Meath, with a further 13 deposited in the enclosure ditch (Baker 2007a). The enclosure was radiocarbon dated to the Bronze Age and re-visited and adopted as a cemetery in the early medieval period, as indicated by the presence of one burial with earmuffs, and another with a pillow-stone.

Prehistoric mounds or cairns also provided a context for burials from the fifth to the seventh century A.D. Early medieval burials have been excavated in Neolithic passage tombs and Bronze Age cairns and can be viewed in a similar fashion to the re-use of ring-ditches and ring-barrows (Bhreathnach 2010, 24-25). Excavations at Knowth, Co. Meath, for example,

revealed a small cemetery of later burials associated with the passage tomb (Eogan 1974; 1977; O'Brien 2009). Thirteen crouched or flexed burials, accompanied by grave goods, date to the middle Iron Age; four slab-lined cist burials located at the western perimeter of the passage tomb potentially date to the fifth/sixth century; and the final burial phase included three seventh- and eighth-century extended inhumations. Excavations at two funeral mounds at Ballysadare, Co. Sligo (Opie 1995:0244; 1996:0338) revealed a large number of inhumations; one burial with a pillow-stone; two lintel graves; and two furnished inhumations containing a ribbon torque and a bronze ring. Though the radiocarbon dates were not available, it seems that this cemetery was in use from the Late Iron Age through the early medieval period. Early medieval burials were also found in a Bronze Age cairn at Ballymacaward, Co. Donegal (O'Brien 1999b). The cairn was enlarged and altered throughout the prehistoric period and incorporated a number of cremation burials, the last of which was dated to the second and third centuries A.D. Four extended inhumations were later inserted into the cairn, one of which returned a radiocarbon date of A.D. 411–537. The final phase of burials consisted of at least nine extended inhumations, aligned west-east. The feet of one of the burials, dated to the first quarter of the seventh century, were positioned close together indicating the body had been wrapped in a shroud; and the other burials also indicated they had been wrapped in a shroud and were laid directly into the sand.

The area around earlier monuments was also used as a focus for later burial practices. Early medieval burials were found near a standing stone at Killtullagh, Co. Roscommon (McCormick et al. 1995), and near a cross-inscribed standing stone at Kilgowan, Co. Kildare (Keeley 1989-91b). Excavations at Ballykeel South, Co. Clare (Cahill 1988:0003) revealed a burial, radiocarbon dated *c*. A.D. 400, inside a stone-lined cist beside a standing stone. The use of standing stones as grave markers can be found in a number of historical references, including Tírechán's seventh-century description of the burial place of a druid (Bieler 1979, 130-33). This tradition dates back to the Bronze Age, and a particular cult of cemeteries demarcated by standing stones may have emerged in Ireland in the middle of the first millennium A.D. (Swift 1997, 27-48). Other early medieval burials were found close to prehistoric cemeteries. Nine stone-lined graves were found in close proximity to a Bronze Age ring-ditch at Mell II, Co. Louth, (Breen 2000:0695), and an early medieval cemetery – one burial was dated to the fifth century A.D. – was found beside Iron Age cremations pits, a standing stone and a ring-barrow at Kiltullagh, Co. Roscommon (McCormick *et al*. 1995). At Ardsallagh I, Co. Meath, 24 east-west inhumations, radiocarbon dated to the fourth and seventh centuries, were found inside a pennanular enclosure near the site of a Late Bronze Age urn burial and Iron Age cremations; a further six burials were found outside the ditch (Clarke and Carlin 2006a; 2006b; 2009).

Excavations in the 1970s at Betaghstown, Co. Meath revealed a small cemetery of 16 graves. The locale had been the focus of burials for many centuries, and a Bronze Age cist burial was found to the west of the cemetery. The earliest burials in the cemetery were crouched inhumations, one of which produced evidence for grave-goods including two late Iron Age penannular brooches, an iron belt buckle, and remains of two types of textile and a hairnet. These crouched inhumation burials were disturbed by the construction of a later stone-lined grave which included an extended inhumation (Kelly 1977/79:0057). Excavations in the 1990s (Eogan 1998:0503) revealed a larger cemetery that extended along the top of the ridge to the south of the cemetery excavated in the 1970s. This ridge-top cemetery contained 55 extended west-east inhumations, the majority of which were buried in stone-lined graves. An Early Bronze Age flat cemetery was also discovered during this excavation, as well as a Neolithic timber circle which was overlain by the late Iron Age/early medieval cemetery. Other sites also suggest continuity of use through into the later centuries of the first millennium, for example at Corbally, Co. Kildare, a small ring-ditch containing eight burials radiocarbon dated to between A.D. 330 and A.D. 540, evolved into a large sub-rectangular enclosure which was associated with burials dated to between A.D. 770 and A.D. 820 (Stout and Stout 2008; Tobin 2003).

Early medieval burials were often placed in close proximity to earlier burial enclosures, suggesting that either the former burying ground was still recognised as such by the local inhabitants, or that a similar burial rite influenced the location of cemeteries across the centuries. Although there is substantial evidence for the re-use of burial sites during the early medieval period, it is more difficult to establish whether this represents a continuous use of the site, or whether there is a substantial chronological gap between the last Iron Age burial and the first early medieval burial.

Early Medieval Enclosed Burial Grounds

Early medieval traditional burial grounds also appear to have been constructed *a novo* in the fifth/sixth century A.D. This makes them contemporary with the earliest Christian missions in Ireland, although this cannot be taken to signify that they were Christian burial grounds. There is no evidence for church structures on these sites, suggesting that they were not ecclesiastical in nature, and indeed a number of these enclosures appear to have subsequently developed into settlement/cemeteries (see below).

A number of isolated early medieval graves have been excavated. Many of these have been typologically dated (O'Brien 2003, 67) to either the fifth/sixth century, e.g. the slab-lined cists found at Belladooan, Co. Mayo (Morris 1932), or to the seventh/eighth century, e.g. the lintel graves found at Dromkeen East, Co. Kerry (Bennett 1985:0033) or at Lackan, Co. Sligo (Buckley *et al*. 1991, 21-24). This section will, however, discuss the multiple burial grounds which emerged around this time. There is no standard typology for these cemeteries, and excavated examples have included burial grounds within various shapes of enclosures, burial grounds with no enclosure features, and inhumations under burial mounds or in other atypical contexts.

Excavations at Rathmiles, Co. Laois, revealed a sub-circular enclosure containing a cemetery of (un-dated) west-east inhumations (Delany 2001:0722); and six west-east orientated burials, within an enclosure of undetermined size on a gravel ridge above the River Suir at Caherabbey Lower, Co. Tipperary, probably also belong to this period (Cahill 1988:0058). Seven wholly or partially intact skeletons, along with 13 disarticulated skeletons, all orientated east-west and without grave-goods, were found at Murphystown, Co. Dublin. These would appear to fit the general description of early medieval graves, and a shallow depression in the landscape appears to have demarcated the burial enclosure (Breen 2002:0631). Many of the enclosed traditional graveyards seem to have had some associated settlement activity, and these are discussed in greater depth in the section on settlement/cemeteries (see below).

A number of substantial unenclosed cemeteries with no identified ecclesiastical association have been excavated. These appear to have been established in the early centuries of the early medieval period, for example Mount Gamble, Co. Dublin which dates from the sixth century and continued in use into the twelfth century. Total excavation of Mount Gamble uncovered 287 burials, the vast majority of which were set in earth-dug graves, some of which were associated with earmuffs (O'Donovan 2002:0686). A small two-phased cemetery was found on top of a ridge at Boolies Little, Co. Meath (Sweetman 1983a). The 16 earliest burials were contained within shallow stone-lined graves, and some had secondary burials inserted into them. All burials at Boolies Little, however, predated the construction of a souterrain found on site, suggesting that they are earlier than the ninth century (see Chapter 2). Another small unenclosed cemetery of approximately 20 burials at Ardnagross, Co. Westmeath was dated to the mid-sixth century (Eogan 1995:0266). Other graves had been revealed during initial quarrying activity, so it is likely that the cemetery at Ardnagross was originally somewhat greater. The majority of the burials were extended inhumations – one of which was stone-lined, while another contained earmuffs. One body had been buried lying in a prone position and others were in flexed positions, which suggest either that the cemetery was originally of non-Christian origin, or that pagan burial rites were practised alongside Christian burial. A possible sixth/seventh century date was given to the unenclosed cemetery found at Kilshane, Co. Dublin (Gowen 1988:0018), and it continued in use into the early medieval period. This burial ground contained 123 burials, the majority of which were placed

in graves three or four deep. Around a dozen burials, however, contained earmuffs and some had grave-goods in the form of knives and burnt grain, which may be indicative of Anglo-Saxon influences (O'Brien 1993, 98).

There are a number of examples of mounds being built over early medieval graves. Four burials dated to the fourth/sixth century A.D. were found beneath a low mound at Pollacorragune, Tuam, Co. Galway (O'Brien 2003) and a fifth-century extended east-west burial was found beneath a mound at Ninch, Co. Meath (Sweetman 1983b). A cist burial, which, based on comparative dated graves, is likely to date to the fourth and sixth centuries (O'Brien 2003, 65), was discovered beneath a low mound at Farganstown and Ballymackon, Co. Meath (Kelly 1977b); and an extended inhumation beneath a low mound at Muckduff, Co. Sligo (Raftery 1941, 302) has also been interpreted as early medieval in date (O'Brien 2003, 66). The small number of known early medieval cremation burials also seem to have had mounds constructed over them, for example a low mound which contained a cremation burial dating to the fifth century A.D. was excavated at Forenaughts Great, Co. Kildare (Grogan 1984), and charcoal from a cremation found under a barrow at Furness, Co. Kildare (Grogan 1984, 304) was dated to A.D. 430-590 (2Σ).

One of the most intriguing early medieval burial grounds was discovered within a cave at Cloghermore, Co. Kerry (Connolly 2000; Connolly and Coyne 2000; 2005). The earliest phase of burial can be dated to the eighth century A.D., and involved the deposition of selected bones from several individuals over a period of generations. The bones had been de-fleshed and the burials did not include grave goods. This phase has been linked to a pagan Irish population, probably an extended family group, who were using the cave as an ossuary (Connolly and Coyne 2005, 167). A D-shaped enclosure outside the cave entrance, and post and slot-trench features, provided evidence for occupation contemporary with the later burial phase. This occurred in the late ninth and early tenth century, and involved the interment of a few adult and children's bodies in introduced soils within the cave. One consequence of this was the disturbance of the eighth-century 'ossuary', and perhaps this represents a deliberate desecration of the earlier burial deposits. Burial rites included the cremation of animals and the deposition of horse bone, and it is possible that this phase may have been associated with a pagan Viking or Hiberno-Scandinavian population, since similar burial rites are found across the Scandinavian world (Connolly and Coyne 2005, 161-76).

A number of these traditional burial grounds were quite substantial, challenging the argument that these grounds existed as familial or kin cemeteries. Although many of these cemeteries appear to have gone out of use by the eighth/ninth century, it also seems clear that others, such as Kilshane or Mount Gamble, continued in use into the start of the second millennium. The lack of apparent ecclesiastical structures at these sites makes it difficult to reconcile their existence with the claim that 'familial cemeteries had also virtually ceased to exist during the eighth/ninth centuries' (O'Brien 2009, 150). The dating evidence from settlement/cemeteries also casts doubt on this claim (see below). Nevertheless it does appear that 'from the eighth century onwards, burial close to the saints gradually became an acceptable substitute for burial among the ancestors' (O'Brien 2009, 150).

The Church and Early Medieval Ecclesiastical Burial Grounds

Irish society was gradually converted to Christianity from the fifth century A.D. onwards, and by at least the seventh century A.D., burial practices had been amended following the conversion of the aristocracy and the common people. It is clear from archaeological evidence (see above) and documentary sources, however, that pre-Christian burial practices persisted. As late as the eighth century, the writings of ecclesiastical scholars like Tírechán and Muirchú of Armagh, and Adomnán of Iona make clear their antipathy to the continued practice of burial within *fertae* (i.e. circular ditched enclosures). Hughes (1966) argued that it was not until the seventh century A.D. that the church was sufficiently integrated into Irish society to influence the burial practices and beliefs of the great majority of the people on the island. It was during this period that the church sought to establish formal consecrated

Christian burial-grounds to attract patronage and burial from the secular community. This increase in the status of Christian burial grounds was intimately linked to the growth of the cult of saints. The importance of long-dead saints, who had reputedly established monasteries in the fifth and sixth centuries, was strengthened in the seventh century through the translation of their remains or the enshrinement of their relics (O'Brien 1992, 136; Ó Carragáin 2003a, 134). This latter process was closely linked to the establishment of consecrated burial grounds, a relationship highlighted by the use of the word '*reliquiae*' or 'remains of saint' to denote a cemetery or *'reilig'* (Doherty 1984, 53; Ó Carragáin 2003a, 147).

The foundation date of ecclesiastical cemeteries is still a matter of debate. Although it is likely that the majority were formally organised from the seventh century A.D., two of the 60 inhumations uncovered at Scotch Street, on the summit of Cathedral Hill, Armagh, were radiocarbon-dated to A.D. 420-640 and A.D. 560-685 (Lynn and McDowell 1988b, 82). This excavation was near the supposed location of the '*Temple na Ferta*', one of the early churches on the ecclesiastical site. Another burial was discovered inside a wooden coffin, with the grave originally marked by wooden posts. It has been suggested that this might represent evidence for a reliquary of some kind, perhaps the translation of a saint's corporeal remains (Ó Carragáin 2003a). The name of the early church, the fifth/sixth century date of the burials, and the presence of a ring-ditch (Lynn and McDowell 1988b, 59-60), all suggest that a pagan *ferta* at Armagh may have been consecrated for clerical use in the early years of Christianity in Ireland. Similar re-use of a pagan *ferta* has been suggested for the 'Reefert' at Glendalough, Co. Wicklow, which has been interpreted as deriving from '*Riogh-Fheart*' ('*Ferta* of the kings') (Corlett and Medlycott 2000, 161). It is possible that at both Armagh (Ó Carragáin 2003a, 140) and Glendalough (Harney 2006) the original ecclesiastical burial site was focused on an earlier *ferta*, which was then superseded by the construction of the later Christian cathedral.

Early ecclesiastical sites in Ireland rarely appear to have reused existing pre-Christian ritual sites (see Chapter 3) and, with few exceptions, do not appear to have adopted and adapted pre-existing traditional burial grounds. The cases of Armagh and Glendalough have been discussed, and it is possible that the ecclesiastical burial grounds at Omey, Co. Galway, and Kiltullagh, Co. Roscommon may have been set on earlier pre-Christian cemeteries. At Omey, Co. Galway, an ecclesiastical cemetery was located on a potential Late Iron Age/early medieval transitional cemetery that, in turn, succeeded Bronze Age activity (O'Keeffe 1992a, 1994b). A number of burials were uncovered containing beads of blue and red glass which could date 'close to the interface between paganism and Christianity' (O'Keeffe 1994b, 16). Excavations at Kiltullagh Hill (*Cill Tulach* or 'Church of the burial mound') focused on the transitional Iron Age/early medieval cemetery that straddles the boundaries of counties Roscommon, Mayo and Galway (Coombs and Maude 1996:0333; McCormick *et al*. 1995). This burial ground was adjacent to an early medieval cemetery that was found to contain a possible early wooden structure beneath the medieval church ruins (Robinson and Coombs 1998:0561; Gregory 1999:0769; 2000:0858). Another possible wooden church structure was excavated at Owenbristy, Co. Galway (Lehane and Delaney 2010). Radiocarbon dates suggest this structure is seventh century in date (*ibid*. 22, 62), and the building appears to be respected by the surrounding burials (*ibid*.). The majority of the dated burials belong to the second half of the first millennium (*ibid*. 48-50), however a slab-lined and lintelled grave, dated to A.D. 267-538 (2Σ) (*ibid*. 59), may represent a pre-Christian burial on the site.

It has been argued that, during the seventh/eighth century A.D., 'burial near the bones of the saint' became a substitute for 'burial near the bones of the ancestors' (O'Brien 1992, 136; 2009, 150; Ó Carragáin 2003a, 147). It appears that the ecclesiastical authorities may have been largely successful in persuading people to be buried in formal consecrated burial-grounds from the eighth century onwards, although there is evidence for continuing interment in settlement/cemeteries throughout the early medieval period. This raises the question of whether ecclesiastical cemeteries were more widely used by the general

populace, or whether they were the burial places of the clerical and secular Christian elite (Etchingham 1999a; Swift 2003).

Early Medieval Settlement/Cemetery Sites

Excavations on a number of the burial enclosures not associated with ecclesiastical sites have revealed both continuity of burial through the early medieval period – including after the establishment of ecclesiastical burial grounds – but also the presence of associated settlements. These have been recognised as a 'new site-type' (Kinsella 2010, 124; Ó Carragáin 2010a, 217), although it is noted that the existence of such sites had been theorised in the early 1990s (O'Brien 1992, 130-37). There is no agreed terminology, with 'secular cemetery' (Stout and Stout 2008), 'cemetery settlement' (Ó Carragáin 2010a), and 'settlement/cemetery' (Kinsella 2010) all being employed. Industrial activity is mentioned at 'secular cemeteries' and there is a suggestion that the faunal remains from Knowth Site M represent the remains of funeral feasts rather than occupation (Stout and Stout 2008, 77). Ceremonial feasting as part of the burial ritual has not tended to be considered part of Christian burial practice, and the documentary evidence is silent on this matter. Feasting at the graveside, at the time of burial or on anniversaries, was a Roman practice that survived into the early years of the church in Europe, often including offerings and libations to the dead (Effros 2002, 74-79). In early Gaulish hagiography they are sometimes portrayed positively because it allowed the distribution of food among the poor, but, eager to promote the symbolic feast of the mass as being the appropriate method of honouring the dead, the Gaulish church began to denounce such feasting from the sixth century onwards (*ibid*. 75). Edicts against the practice were still being issued by the sixth century (*ibid*. 79) indicating the enduring nature of the practice. It is possible that such ritualistic activity occurred in contemporary Ireland, especially in the cemeteries under discussion where burial rite may not have been under the control of the church. Pre-Christian Roman practice may also be invoked to explain the development of 'secular cemeteries'. In the early Roman Empire, for example, the dead were shunned and kept outside the walls of the town and away from the living, and there is certainly some evidence that this was the case during the early centuries of Christianity in Ireland (McCormick 1997a, 63-67). The association between burial and 'dirty and dangerous pursuits', however, is more difficult to demonstrate and the abundant evidence for settlement on many of these sites belies a sense of 'shunning the dead'. The term 'secular cemetery' tends to underplay the human occupation associated with these sites (Ó Carragáin 2010a, 217) and therefore 'settlement/cemetery' will be used instead.

There is great variation in the archaeology, chronology, organisation and material culture of settlement/cemeteries, but they are all essentially early medieval settlements with an associated communal burial ground. Many of the burial grounds appear to have originated in the fifth century, were used over a considerable period, and are not explicitly associated with any known ecclesiastical site. Settlement/cemeteries also often show evidence for expansion or shape-change, for example there was a series of concentric enclosures, representing expansion of the settlement at Knowth Site M, Co. Meath (Stout and Stout 2008), and at Johnstown, Co. Meath, the secondary ditch cut the original ditch, thus reshaping the enclosure without significantly expanding its area (Clarke and Carlin 2008). Internal structures are infrequently encountered, although two souterrains and a possible house were identified at Raystown, Co. Meath (Seaver 2006, 80; 2010), and a probable roundhouse was found at Parknahown, Co. Laois (O'Neill 2007a, 134). Few structures, however, have been found on plough-truncated raths, and most settlement/cemeteries produced a wide range of artefacts similar to those found on rath excavations.

Occupation evidence for settlement/cemeteries is thus largely comprised of artefacts, food refuse, industrial material and crop-processing. Where soil conditions permit, settlement/cemeteries have produced large quantities of animal bones, e.g. Knowth Site M (Bonner 2008; Hughes 2008), Raystown, (Seaver 2006, 83; 2010, 273), Parknahown (O'Neill 2007a, 136), and Johnstown (McCormick and Murray 2007, 243-45). The processing of agricultural produce is also commonly noted on these sites. Raystown revealed five cereal-drying kilns and up to eight watermills (Seaver 2010), and Corbally produced 26 kilns (Tobin

2003, 32-37). The exceptional nature of this activity can be appreciated when compared to the small numbers of cereal-drying kilns excavated from raths (Chapter 5). The evidence for cereal processing was much less intensive at other sites. Only one drying kiln was present at Balriggan, Co. Louth and they were absent from several other sites. There was also extensive evidence for metalworking – particularly ironworking – on some of these sites, for example two tons of waste slag and furnace bottoms were found at Johnstown, Co. Meath (Walsh 2008, 40-42). At other sites the evidence was more limited, for example the evidence from Balriggan implied 'a small-scale industry, perhaps forging/iron tool making, and repair work' (Delaney and Roycroft 2003, 19; Delaney 2010).

Settlement/cemeteries show huge variations in size – the sixteen 'secular cemeteries' published listed by Stout and Stout (2008, 74) range in size from diameters of nearly 100m, such as Knowth Site M, Ninch, Co. Meath and Balriggan, Co. Louth, to sites such as Westereave, Co. Dublin, with a diameter of only 25m. In general, the sites range from 50m to 70m in diameter, which is similar in size to many settlement enclosures such as Killickaweeny, Co. Kildare (Walsh 2008) and Roestown 2, Co. Meath (O'Hara 2009a). Ecclesiastical sites in contrast typically measure on average between 90m and 120m (Swan 1983a, 274), though some examples measure from 140m-400m in size. The average size of these enclosures is therefore generally a good deal less than that of ecclesiastical sites (Kinsella 2010).

The burial areas were generally confined within the enclosure (e.g. Cherrywood, Co Dublin (Ó Néill and Coughlan 2010, 240)) or, in the case of multiple enclosures, they were generally located within the inner enclosure, e.g. Millockstown, Knowth, Site M, Parknahown and Balriggan (Stout and Stout 2008, 74). There are, of course, exceptions to this general rule. At Raystown, Co. Meath the burials were largely confined within two concentric enclosures, but some were inserted into the ditches and some were located outside the enclosures (Seaver 2010, 264-68); at Mount Offaly, Co. Dublin, burials extended across the in-filled ditches as the cemetery expanded in size (Conway 1999); and at Carrowkeel, Co. Galway, there was no formal boundary to the cemetery (Wilkins and Lalonde 2008). The number of burials discovered has also varied greatly (Kinsella 2010). Mount Offaly produced at least 1,500 burials and the cemetery at Faughart Lower had 800 burials. Castlefarm, however, only had eight burials, and other small numbers were recorded at Balriggan (57), Millockstown (57), and Cherrywood (38). Some of the cemeteries were only partially excavated, for example at Raystown, so many of these small cemeteries may actually have been larger. The graves tended to consist of a mixture of males and females, mature, immature and infants, although Ninch, Co. Meath had a 'striking[ly]' low percentage of juveniles (Buckley 2010, 45).

Chronological progression can be seen on a number of sites, such as Knowth Site M, Castlefarm (both Co. Meath) and Faughart Lower, Co. Louth, which all show an increase in size over time. At Faughart Lower, for example, the initial site consisted of a bivallate enclosure which was then filled-in and replaced by a larger single-ditched enclosure (Bowen 2008). The majority of settlement/cemeteries display evidence for continued ditch-re-cuts and additional annexes (for example Raystown, Ratoath, Castlefarm, Ninch, Balriggan) which is not surprising given their longevity and scale.

The archaeological evidence from Johnstown, Co. Meath demonstrates that the settlement succeeded the first burials and expanded thereafter in tandem with the growth of the cemetery (Clarke and Carlin 2008, 55-86). Raystown and Castlefarm (also both Co. Meath) show a similar pattern, with fifth-century burials representing the earliest activity before the sites expanded and were occupied for centuries afterwards (Kinsella 2010, 122). The statement that 'burials within the innermost enclosure [at Raystown] dated to between A.D. 260 and A.D. 990' (Stout and Stout 2008, 169), is a misreading of the radiocarbon-dating evidence. This fifth-century start date, however, is not universal. At Carrowkeel, Co. Galway, burial only began in the seventh century – the majority were dated between the eighth and eleventh centuries – and continued until the late medieval period (Wilkins and Lalonde 2008). Three of the latest dated burials (A.D. 1400-1477, A.D. 1284-1396 and A.D. 1169-1269) were all foetuses suggesting that the site was evolving into a *cillín* at this stage. The radiocarbon

dates show that these 'ancestral' burial grounds do not seem to have their origin in the pre-Christian era but in approximately the fifth century.

Burial in non-ecclesiastical sites was tolerated until the eighth century, but thereafter Church legislation required that the dead be buried in consecrated ground (O'Brien 1992, 130). There has been a tendency therefore to assume that settlement/cemetery sites were an Iron Age tradition. Certainly, some of these sites seem to be associated with Iron Age and other prehistoric funerary monuments and may have provided continued ancestral burial foci for the local populace (see above). A more complete analysis of the radiocarbon dates, however, indicates that they evolved from late Iron Age/early medieval transitional period burial grounds around the fifth century A.D. (Kinsella 2010, 126). After the fifth/sixth century A.D. they show great variability, and the developmental sequence of individual sites varies dramatically in the scale of burial and settlement and also in the longevity of use. It is clear that many of the Late Iron Age/early medieval transitional burial sites developed into cemeteries with (or without) accompanying settlement evidence and continued to be used up to the twelfth century and beyond. The limited settlement and burial evidence uncovered at other sites, however, suggests that these were only used for a short period of time. It is not clear why some continued to remain focal points of burial and settlement activity, while others disappeared from use. The best explanation may be the 'messiness' of life – i.e. the way that people buried their dead according to the contingencies of their community's own experiences of political events, waxing and waning of social and economic fortunes and other factors – rather than some rigid archaeological categories.

Anglo-Saxon and Scandinavian Furnished Burial Practices

Anglo-Saxon Furnished Burial Practices

In recent years, there has also emerged tantilising evidence for intrusive population groups or 'foreign' burial practices in Irish archaeology. The historical evidence for contact between Ireland and Anglo-Saxon England emphasises military conflict between the islands, for example the Dál Riata forces at the un-located battle of *Fid Eóin* ('John's Wood') in A.D. 632, were augmented by Oric, son of Albirit, 'heir designate' of the Saxons, and his followers (CS 629; ATig 631); and Egfrith, king of Northumbria, is recorded as raiding the churches and lands of Brega in June 685 (AU 685; AFM 683; AC 680; ATig 685). It is also evident, however, that there was also peaceful contact and exchange of ideas and people. A number of Anglo-Saxon clerics are known to have studied in Ireland, for example Egbert and Aethelhun who resided at the Irish monastery of *Rath Melsigi* (Clonmelsh, Co. Carlow) in the mid-seventh century (O'Brien 1993, 94), and a number of ecclesiastical sites, such as Glendalough and Killegar (*Cell Adgair*), (both Co. Wicklow), have also revealed possible Anglo-Saxon connections. Another Anglo-Saxon figure, Berichter, is commemorated on an early cross-slab at Tullylease, Co. Cork, and is remembered at St Berrihert's Kyle, Co. Tipperary.

Excavations in the 1990s and 2000s have revealed strong similarities between some of the burial traditions found in Ireland, especially the east of Ireland, and those found in seventh-century Anglo-Saxon England (O'Brien 1993; 2003). An atypical burial at Betaghstown, Co. Meath – the body was crouched and clothed – contained a number of grave-goods. These included penannular omega-type brooches which appear to have been worn in the Anglo-Saxon fashion, with one on each shoulder (O'Brien 1993, 96, 97). On this basis, this burial has been interpreted as being that of a possible Anglo-Saxon female (*ibid.*). A grave at Levitistown, Co. Kildare was found to contain burnt grain – a pagan Anglo-Saxon practice that is recorded historically and discovered elsewhere in England (O'Brien 1993) – and a possible Anglo-Saxon burial was excavated at Mayfield, Co. Waterford (O'Donnell 1986:0077). This burial, set along the bank of the River Suir, contained a small amount of cremated bone, a bronze strap-tag comparable to similar ninth-century Anglo-Saxon types and ornamented in the Trewhiddle style, as well as a vertical-sided pot. The site remains enigmatic and it is unclear if it represents the burial place of an Anglo-Saxon or whether it is a Viking burial (see below). Other burials with possible Anglo-Saxon associations have been noted at raths at Raheennamadra, Co. Limerick (Stenberger 1966) and Aghalahard, Co. Mayo (Raftery and

Moore 1944, 171-72); and at the burial grounds at Dooey Co. Donegal (Ó Ríordáin and Rynne 1961, 58-64), Westereave and Kilshane (both Co. Dublin). A parallel has also been drawn between the wooden-lined graves found at Ninch, Bettystown/Betaghstown and Claristown (all Co. Meath), and those found at Whithorn in Dumfries and Galloway. It has been suggested that this may represent a connection between eastern Ireland and southwest Scotland during the earl medieval period, whether this be the movement of peoples or of burial practices (Buckley 2010, 48).

O'Brien (1992, 1993, 2003, 2009) has suggested that penannular burial enclosures, such as Colp West, Co. Meath, and Westereave and Greenhills (all Co. Dublin) may be the result of early Anglo-Saxon influences in Ireland. With the exceptions of Castle Upton, Co. Antrim (Gahan 1997) and Chancellorsland, Co. Tipperary (Doody 2008), penannular enclosures are located in areas of Ireland that have both historical and potential archaeological links with Anglo-Saxon England in the seventh century – i.e. the former kingdom of Brega on the east coast. O'Brien (1992; 1993; 2003) argues that penannular enclosures are invariably dated to the sixth/seventh centuries A.D., however, more refined dating of the enclosures at Ardsallagh, Raystown and Cloncowan (all Co. Meath) show that their construction predates the seventh century and that they may therefore represent a variation of the native, insular ring-ditches and ring-barrows.

This, of course, is not to say that Anglo-Saxon contacts and cultural influences were not present in Ireland, especially in the eastern region. A possible example of this contact has been found in the settlement/cemetery at Ratoath, Co. Meath (Wallace 2010). A young female burial, radiocarbon dated to A.D. 668-832, was accompanied with a copper-alloy neck-ring, similar to an example found at Bergh Apton, Norfolk (O'Brien 2009). Contacts with both Gaul/Francia and Anglo-Saxon England were responsible for a cross-fertilization of artistic, iconographic and decorative ideas which combined Celtic, Germanic and Romanic elements from the seventh/eighth centuries A.D. It is possible that burials and grave-goods may indicate the extent of Anglo-Saxon influence and contacts in Ireland during the early medieval period – whether this may have been in the form of the exchange of ideas and practices, or the movement of Anglo-Saxon immigrants into Ireland.

Viking Furnished Burial Practices

The story of Viking settlement in Ireland is more concrete than the tenuous Anglo-Saxon connection. Furnished Viking burials have been found across Ireland since the nineteenth century, although antiquarian records are often patchy. Research and publications by Harrison (2001) and Ó Floinn (1998a) have enabled new insights into 'those [burials] containing individuals, buried according to traditions, which are recognizably Scandinavian in inspiration and which date from the ninth and tenth centuries' (Harrison 2001, 61). Harrison (2001, 63) has noted that the distribution pattern of Viking graves in Ireland differs remarkably to that in Scotland, Cumbria and the Isle of Man where the vast majority of burials are located in isolated single graves. In contrast, 80% of known Scandinavian graves in Ireland have been excavated from within five kilometres of the Dublin city centre. A total of 75% – approximately 60% of all Viking graves found in Ireland – come from the cemeteries of Kilmainham and Islandbridge, Co. Dublin. Altogether it has been suggested that there are approximately 80-90 burials from the Dublin evidence (Ó Floinn 1998a, 142) – a figure that can be slightly increased due to excavations in the 2000s. This suggests an island-wide figure of between 90 and 100 burials.

Viking Burials in Viking / Hiberno-Scandinavian *Dyflin*

The concentration of Viking burials in and around Dublin city centre attests to the significance of this area in the ninth/tenth centuries A.D. The four Viking cemeteries of Kilmainham, Islandbridge, Castleknock (to the west of the city centre), and Palace Row (to the north), have been discovered since the nineteenth century (Ó Floinn 1998a, 132; Harrison 2001, 65). Isolated Viking burials have also been found at College Green, Parnell Square, Cork Street, Bride Street, Kildare Street, Dollymount Strand and Donnybrook (Alyesbury Road) (Harrison 2001, 65). A possible burial mound formerly extant at College Green, Dublin, may have been

of Scandinavian origin (Harrison 2001, 74), and a large 'sepulchral mound' excavated in the nineteenth century at Donnybrook, Co. Dublin (Hall 1978) contained a furnished Viking burial accompanied by two other inhumations. Between 600 and 700 Christian burials were found in this mound, which was regarded as a mass grave for victims of Viking raids, with the Viking burials subsequently added. A less lurid reappraisal of the site has interpreted it as a contemporary 'Irish' traditional burial ground, with a later Viking burial (O'Brien 1992).

Excavations at Ship Street Great and South Great George's Street revealed ninth-century Viking warrior burials (Simpson 2005a), and a further four Viking burials were identified on the periphery of St Michael le Pole cemetery, between 10m and 30m away, at Golden Lane. One skeleton from St Michael le Pole was dated to A.D. 678-832, which suggests that the individual was buried prior to A.D. 832 and the establishment of the historically recorded *longphort* (O'Donovan 2008, 50-53). Simpson (2005a, 56-59) proposes that the South Great George's Street site may represent the southern part of the *longphort* site. She bases this on its strategic location at the southern edge of the 'Black Pool' (*Duiblinn*), its close proximity to the River Poddle and the presence of the early potentially defensive palisade and bank on the eastern side of the inlet. The site appears to have been established prior to the settlement at Exchange Street Upper/Parliament Street and Temple Bar West and may represent the earliest Viking occupation in Dublin related to the first raids in the area. Evidence for continual occupation – both prior to and after the mid-ninth century – also makes it a strong candidate for an early Viking raiding base and settlement.

Viking Burials in *Dyflinarskiri* and Beyond

A number of unusual burials have been discovered in the regional hinterland of Dublin known in the historical sources as *Dyflinarskiri* (Harrison 2001, 65-66). Burials containing the remains of humans and horses have been recorded at Athlumney near Navan, Co. Meath, and at an unknown site between Milltown and Newbridge, Co. Kildare. An iron spear-head was found at the upper level of a prehistoric burial mound at Croghan Erin, Co. Meath (Larcom 1848, 388-89; Harrison 2001, 66), while an iron axe-head was found at Barnhall near Leixlip (Old Norse '*Lax hlaup*' – 'Salmon's Leap') near a possible Viking outlying settlement (Harrison 2001, 66). Excavations near the early medieval ecclesiastical site of Finglas (*Fionn Gall* – 'fair foreigner') in north Co. Dublin, revealed a ninth-century Viking female burial with accompanying Scandinavian oval brooches (Kavanagh 2004:0599), and a whale-bone plaque recovered from a burial at Cherrywood, Co. Dublin (Ó Néill 1999, 10) may also be an indicator of a female Viking grave. The presence of females buried with Viking material is unlikely to have been the result of raiding deaths, and instead suggests a settled Viking presence in this area.

The greatest concentration of Viking burial evidence outside Dublin can be found along the northeast coast in the counties of Antrim and Down. A number of potential burials were discovered at Leger Hill, Larne and Ballyholme, (both Co. Antrim) and St John's Point, Co. Down, and a possible Viking cemetery was excavated at Rathlin Island, Co. Antrim (Harrison 2001, 66). A possible Viking ship burial is known from Ballywillin, Co. Antrim (Briggs 1974). Other recorded examples have been found in Scandinavia and the Western and Northern Isles of Scotland, however, the chronology of the Ballywillin ship burial is uncertain due to the discovery of coins of Edward III (1327-77) (Ó Floinn 1998a, 146).

Elsewhere in Ireland, a furnished Viking grave was discovered at Eyrephort, Co. Galway (Sheehan 1987), and excavations at Woodstown 6, Co. Waterford, have revealed a Viking furnished-burial immediately outside the ditched enclosure on the River Suir (O'Brien and Russell 2005). Two other potential burial sites, dating to the tenth century, were excavated at False Bay, Co. Galway. They were laid out with their heads to the west; a tradition not found in Christian graves, and were found to date to a slightly later period than a possible Viking house and settlement (Gibbons and Kelly 2003; O'Sullivan and Breen 2007, 121). A further potential Viking burial was discovered near a cashel at Rinnarraw, Lough Swilly, Co. Donegal (Comber 2006) and some of the burials at Knoxspark, Co. Sligo may also be representative of Viking funeral rites. Viking swords discovered at Tybroughney, Co. Kilkenny, and Murgesty, Co. Tipperary, might also indicate the locations of furnished Viking burials. It is possible that

the cist found along the banks of the River Suir at Mayfield, Co. Waterford, could represent the internment of a Viking/Hiberno-Scandinavian, or as mentioned above, an Anglo-Saxon. No skeleton was found within the cist, though (un-dated) cremated bone was recorded (O'Donnell 1986:0077); the cremation from Knoxspark, Co. Sligo, which dates to the second half of the first millennium (Mount 2010, 203), also appears to reflect aberrant or non-native burial practice.

The rarity or lack of *definitive* Viking ship burials and mound burials in Ireland suggests that the dominant burial rite is represented by simple earth-dug graves, often with grave-goods. Some Viking burials display Christian influences, and it is likely that many Christianised Vikings, and latterly Hiberno-Scandinavians, were buried without grave furnishings, which makes their ethnic identification incredibly difficult. The concentration of Viking burials around a number of ecclesiastical sites, including St Michael le Pole's and St Peter's in Dublin city centre, Finglas, north Co. Dublin, and St John's Point, Co. Down, also throws up intriguing questions about the relationship between these churches and the pagan Scandinavian authorities in this period.

Conclusion

Archaeological evidence suggests that the period of conversion from paganism to Christianity was slow and often complex, as different communities engaged in the emerging religion in their own ways. Where once there existed a concept of Church-led uniformity, burial practices in early medieval Ireland are now characterised by diversity and variety in both burial rite and context. The traditional description of the fifth to twelfth centuries as 'Early Christian' fails to reflect the real chronological, cultural and ideological complexity of the archaeological data. Between the fourth and sixth centuries, the dead were buried in familial or ancestral burial grounds, occasionally involving ring-ditches, ring-barrows, mounds, standing stones, and other features. These early graves often are stone-lined, but not always; some burial places were quickly abandoned, while others are used over long periods and become the focus for settlement/cemeteries. A sense of ancestry and memory may have created a desire in the inhabitants of these settlements to be buried 'with their own people', rather than in a neighbouring ecclesiastical cemetery. The cemetery at Raystown, Co. Meath has been argued as a possible representation of these burial practices, and there is anthropological evidence for similar activity among small farming communities in early Christian Greece (Effie Photos Jones, pers comm) Archaeological excavations suggest that settlement/cemeteries played a significant role in early medieval Ireland – at least in northern Leinster – yet there is little (if any) documentary sources that would elucidate how they came into being, and what position they occupied within the extremely hierarchical structure defined in the various early Irish laws.

Ecclesiastical graveyards appear to have been established *a novo*, with only a few sites showing re-use of pre-Christian burial grounds. The persistence of other burial grounds suggests that burial in churchyards during the early medieval period was restricted to a privileged religious and secular minority. If this is the case, church burial represents a shift in earlier burial practices where high-ranking individuals appear to have been interred in restricted burial rites in and around prehistoric monuments, for example the fifth-/sixth-century slab-lined cist burials at Ballykeel South, Co. Clare (O'Brien 2003, 67). This earlier burial rite may have been employed to create a claim of sovereignty to the land, and to reinforce the link between the deceased (and their descendants), and the indigenous ancestors. Burial with the saints in an ecclesiastical graveyard may be seen as having a similar function in an increasingly Christianised Ireland.

Although it has been argued that church sites became a focus for burial practices from the eighth century onwards, it is now apparent that other burials grounds carried on in use into the second millennium. Burials from traditional graveyards, settlement/cemeteries, caves and coastal middens, as well as known Scandinavian burials, point to a variety of contexts in which people continued to be buried outside the authority of the church at this time. It is not yet known, however, whether these burials represent the dominant Christian funeral rite in

early medieval Ireland, with only a privileged minority buried in churchyards; whether they represent continuing non-Christian burials in Ireland; or whether they are a construct of regional or population variations

Table 5:1 Excavated Early Medieval Settlement/Cemeteries

Site name	Archaeological evidence	Reference
Augherskea, Co. Meath	Cemetery, pits, gullies, and drains to east, furrows	Baker 2007b
Balriggan, Co. Louth	Cemetery, enclosures, post-built structures, ironworking features, cereal-drying kiln	Delaney 2010; Delaney & Roycroft 2003
Cabinteely, '*Mount Offaly*', Co. Dublin	Cemetery, enclosures, cobbled area, ironworking features	Conway 1999
Carrowkeel, Co. Galway	Cemetery, enclosures, pits	Wilkins & Lalonde 2008
Castlefarm, Co. Meath	Cemetery , enclosures, wells	O'Connell 2006; 2009a
Cherrywood, Co. Dublin	Cemetery, enclosure, structures, pit, cereal-drying kiln	Ó Néill 2006
Corbally, Co. Kildare	Cemetery, enclosure (identified through geophysics), cereal-drying kilns	Tobin 2003
Dooey, Co. Donegal	Cemetery, unenclosed and enclosed areas, postholes, possible structure, ironworking and bronze-working features	Ó Ríordáin & Rynne 1961
Dunmisk Fort, Co. Tyrone	Cemetery, enclosure, rectangular structure, ironworking features. This may be an ecclesiastical site	Ivens 1988a; 1989
Faughart Lower, Co. Louth	Cemetery, enclosures, souterrains	Bowen 2008
Johnstown I, Co. Meath	Cemetery, enclosures, pits, gullies, spreads, ironworking features, possible millrace, cereal-drying kilns	Clarke & Carlin 2008
Knowth (Site M), Co. Meath	Cemetery, enclosures, a platform, possible trapezoidal structure, trenches, pits, furrows	Stout & Stout 2008
Knoxspark, Co. Sligo	Cemetery, promontory fort enclosure, cereal-drying kiln	Mount 2002; 2010
Millockstown, Co. Louth	Cemetery, enclosures, souterrains	Manning 1986a
Ninch (Laytown), Co. Meath	Cemetery, enclosures, circular house slots, souterrains, a well, pits, slots, gullies, cobbled surfaces	McConway 2000:0760, 2001:1007, 2002:1489; McConway 2002
Parknahown, Co. Laois	Cemetery, enclosures, possible structure	O'Neill 2007a; 2008
Rathfarnham, Co. Dublin	Cemetery, enclosure	Carroll 1997:0184
Ratoath, Co. Meath	Cemetery, enclosures, ironworking features, cereal-drying kilns	Wallace 2010
Raystown, Co. Meath	Cemetery, enclosures, souterrains, house slots, hearths, pits, gullies, watermills, cereal-drying kilns	Seaver 2006, 2010

Chapter 5: Early Medieval Agriculture and Economy

Early medieval Ireland was an overwhelmingly rural landscape, with individual farmsteads (raths and crannogs), fields, and route-ways set in a highly managed agricultural landscape. In this rural landscape, farming was the constant in people's daily lives. The majority of the community, especially the ordinary and un-free members of society, such as the low-status commoners, hereditary serfs and slaves, would have spent most of their lives at work in the fields - herding cattle, sheep and pigs, ploughing, sowing and harvesting crops, or building and repairing field-walls. In the home, the daily lives of men and women would also have been dominated by domestic activities relating to agriculture, whether this was in terms of preparing milk and cheeses, grinding grain for flour, salting meats for winter storage, or spinning and weaving wool.

Agriculture, however, was not only important in terms of subsistence. It was also the key element in the organisation of early Irish society. Whether they were a lord or a slave, most people would have depended for their social status, subsistence and livelihood on the agricultural produce of the land. Kinship and community, social status and gender roles – these were all organised around the patterns of land-use and agricultural labour. For these reasons, agriculture and economy have to be seen as key aspects in the study of early medieval Irish society. Documentary sources have tended to emphasise the role of pastoral farming, particularly cattle farming, during the early medieval period. The archaeological evidence for this is largely limited to post-consumption skeletal remains. Archaeological features representative of arable farming – fields, mills, kilns, etc. – suggest a rather mixed pastoral/arable farming economy.

Livestock Farming

Cattle, more specifically cows, were of exceptional importance in the lives of the early Irish (Lucas 1989, 3-4). The cow was the basic unit of wealth and an individual's social status in this rigidly hierarchical society was dependant, to a large extent, on the number of cows at one's disposal. The giving and receiving of cows formed the basis of the contracts, i.e. '*taurchrecc*' (Kelly 1988, 32; Jaski 2000, 106), between members of different social ranks in society. These contracts formed the basis of stability within society. Fines, tribute, and dowries were generally paid in cows; and cattle-raiding was regarded more as a form of political competition than criminal activity. Some payments could also be made in silver, but the authors of the law tracts assume a consistent exchange-value for cattle (Kelly 1997, 57), thus acknowledging their position at the core of the value system. McCormick (1995a, 2008) argues that raths were primarily built to protect cattle during times of raiding, thus reflecting the central role of cattle, and especially the milch cow, in the wealth system. Contemporary writings suggest that early cattle-farming was dominated by dairying, an impression confirmed by the age-slaughter pattern and sex-ratio of cattle from archaeological sites (McCormick 1992b), and by the wide range of dairy products consumed during this period (Kelly 1997 323-30). In contrast the by-products of butchered cattle - i.e. meat, hides, and tallow – appear to be of less importance than live cattle and their by-products. The age-slaughter patter of cattle can also indicate if a site is a producer/consumer or simply a consumer site. The former is characterised by significant number of immature cattle being slaughtered while the latter tends to be dominated by older animals, for example, the majority of cattle slaughtered in Viking Dublin were older animals (McCormick and Murray 2007, 46), indicating that it was a consumer settlement and did not produce the beef that it consumed. Clonmacnoise had a similar age/slaughter pattern, indicating the site for the most part was provisioned by outside producers and not by its own herds (Soderberg 2004, 167-83; McCormick and Murray 2007, 209-17).

The vast quantities of cattle bones from excavations such as Lagore, Co. Meath (Hencken 1950, 225) led to the impression that cattle rearing completely dominated livestock farming, and that other livestock were kept in relatively minor quantities. Advances in

zooarchaeological methodology, however, has shown that the livestock economy was of a more balanced nature than previously thought. This evidence from early medieval Ireland has recently been re-appraised by McCormick and Murray (2007), and it shows clear differences between the livestock economy of the sixth to eighth centuries, and that from later centuries. The distribution of livestock from sites dated *c*. A.D. 600-800 displays a remarkable consistency (*ibid*. 105). During these centuries there was an almost nationwide livestock economy, with cattle being of primary importance, followed by pig, and then sheep. Goat played a very minor role. From about A.D. 800 onwards, distribution of livestock from various sites begins to show much more diversity, and in many places cattle begin to lose their dominant role (*ibid*. 107). This change is equated with a decline in cattle being used as the currency standard and general basis of the wealth system. Other currencies, especially silver, began to gain significant economic importance around this time. As a consequence of this it has been argued that there is an expansion in grain production, which is superior way of generating independent economic wealth than cattle rearing (Kerr 2007, 117-18; McCormick and Murray 2007, 111-15). The great activity in mill building around the turn of the eighth century (Brady 2006, 49) provides complimentary evidence for the expansion in arable farming (Fig. 6.1), although admittedly the supporting evidence form pollen analysis has yet to be demonstrated (see above). The change in the livestock economy coincides with the beginning of the decline of the rath and the emergence of the raised rath in the northern part of the island (Kerr 2007, 98-99; Kerr 2009, 72-74). Slaves too, previously kept only on a domestic scale, became a commercial commodity with warfare now being characterized by the mass taking of prisoners (Holm 1986, 340-45). This is likely to have led to the expansion of the souterrain (Clinton 2001; McCormick and Murray 2007, 111-12) often located in new, unenclosed settlements.

The farm buildings listed in the early Irish legal texts are closely associated with livestock farming *bótheg* (cow-house), *foil muc* (pig-sty), *lías láeg* (calf-pen) and *lías cáerach* (sheep-pen) (Kelly 1997, 365) yet very little archaeological evidence for these structures has been discovered. The relative mildness of the Irish climate allowed cattle to be kept outdoors throughout the year, and this may account for the lack of cattle byres identified from the early medieval period. In the early-eighth century, the Saxon cleric Bede noted that: '[in Ireland] there is no need to store hay in summer for winter use' (Sherley-Price 1965, 39); and a similar statement was made in the *Konung's Skuggsja*, a Norwegian work written *c*. A.D. 1250 – 'all through the winter the cattle find their feed in the open' (Larson 1917, 105).
The few animal houses identified within raths include a lean-to at Ballyknockan, Co. Wicklow (Macalister 1943, 147), and an indeterminate number of 'outhouses' identified from stake-holes at Lisnagun, Co. Cork (O'Sullivan *et al*. 1998, 39). Such structures tend to be labelled as outhouses on the negative basis that they cannot be identified with human occupation. On the same basis, it is possible that a number of enclosures which produced almost no occupation debris may have actually been little more than cattle corrals, for example, Garryduff II, Co. Cork (O'Kelly 1963, 18-20), and the western enclosure at Balriggan, Co. Louth (Delaney and Roycroft 2003, 19; Delaney 2010).

The best positive evidence for animal houses within raths, however, comes from insect material found at Deer Park Farms, Co. Antrim. The presence of dung beetles (*Carpelimus bilineatus*, *Aphodius prodromus* and *Cercyon analis*), animal fleas (*Damalinia ovis*, *D. bovis*, and *D. caprae*), and five sheep ticks (*Ixodes ricinus*), suggest that live animals were brought into the enclosure (Kenward and Allison 1994, 95-96). An environmental sample from one building was found to contain 43 pig lice (*Haemotopinus apri* – a louse usually associated with wild boar (*ibid*. 96)) suggesting it may have been used as a slaughterhouse or pig-pen.

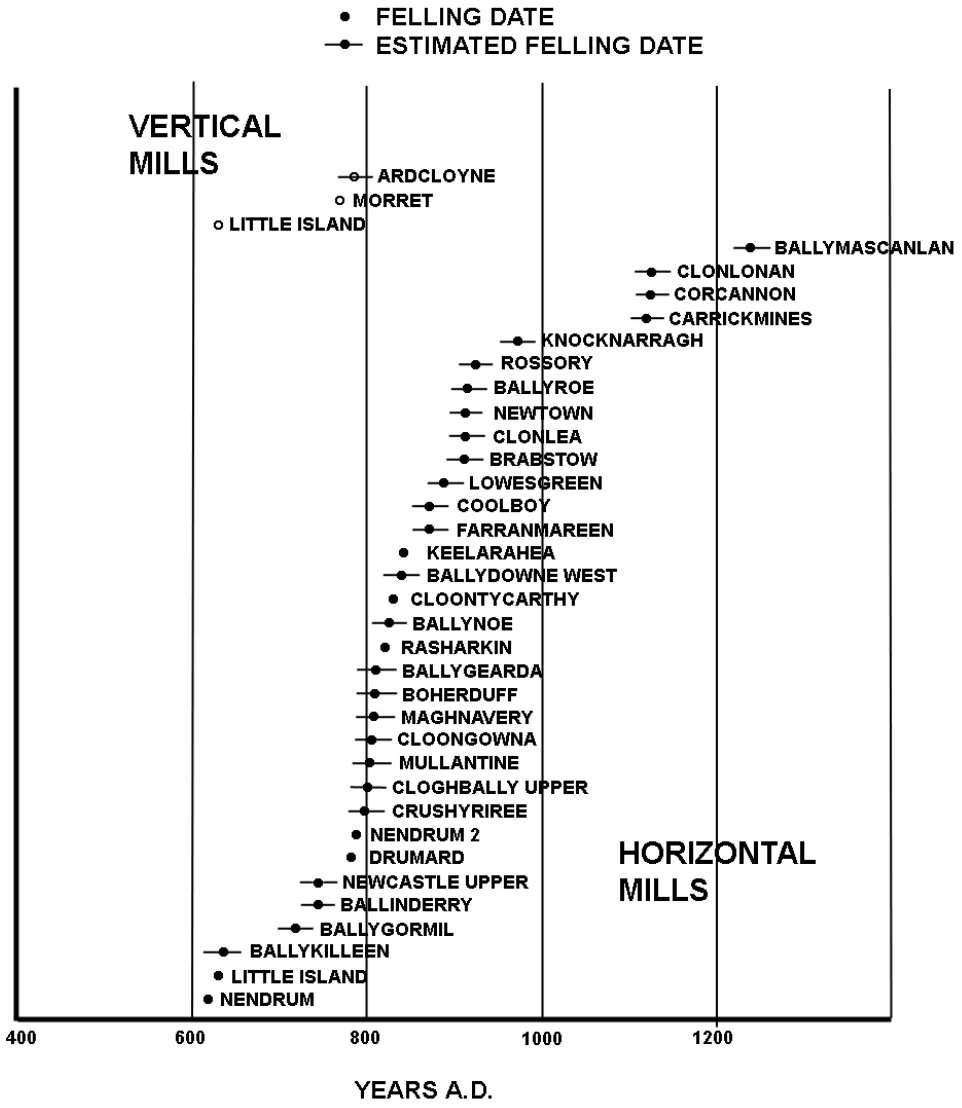

Fig. 6.1: Dendrochronological dates from mills (after McErlean and Crothers 2007, 11; Table 6.1).

The decline in the social value of cattle has profound implications for the settlement patterns of the period. At Knowth, Co. Meath, for instance, the enclosed bivallate rath of the seventh/eighth centuries gives way to an unenclosed settlement which provided evidence for no less than nine souterrains and fifteen houses. This is a settlement created with an emphasis on the protection of people rather than cattle, and seems, at least superficially, to validate the settlement change proposed by McCormick and Murray (2007) and Kerr (2007; 2009). It is also likely that settlement change occurred earlier in Leinster where the influence of the Vikings, and their silver, was greatest. Stout (1997, 54) has shown that density of raths is lower in Leinster than elsewhere in the country. The hypothesis outlined above would suggest the rath went out of use earlier in Leinster and may have continued to have been build for considerable periods elsewhere in Ireland.

Crop Cultivation

The early documentary sources provide a detailed wealth of information on the cultivation of cereals, vegetables, fruit and herbs, unrivalled anywhere in Europe at this time (Kelly 1997, 219-71). This evidence is augmented by macroscopic plant remains from individual sites, for example Monk (1986) and Monk *et al*. (1998) have produced overviews of this evidence with

an emphasis on Munster.The *Bretha Déin Chécht*, an eighth-century law tract, lists seven cultivated cereals – *cruithnecht* (bread-wheat); *secal* (rye); *suillech* (spelt wheat?); *ibdach* (two-rowed barley?); *rúadán* (emmer wheat?); *éornae* (six-row barley), and *corcae* (oats) (Kelly 1997, 219) – it also notes that bread-wheat was of the highest regard and oat the lowest. This is an idealised list, and the crops cultivated at different sites often reflect localised crop-growing capabilities. There are many places in Ireland where it would be extremely difficult to grow wheat, for example, but as yet, the macroscopic evidence has not demonstrated clear regional variations. In Munster, barley and oats, characterised as lower-status cereals in the documentary sources, were the main cereals encountered. There was much variation, however, between sites and even in different samples from a single site (Monk *et al*. 1998, 72). The presence of wheat, or at least wheat straw, at Lagore Crannog (Hencken 1950, 242), may demonstrate the association between wheat and consumers of high status. Wheat, however, is not an accurate indicator of the status of the site since *Triticum sp*. remains were found in most of the Munster assemblages, although in relatively small quantities (Monk 1986; Monk *et al*. 1998).

It is relatively easy to determine if a grain assemblage has been processed or not. In the study of the Munster material unprocessed grain is rare indicating that winnowing and cleaning tended to take place away from the habitation sites. The same has been noted at the early monastery at Illaunloughan, Co. Kerry (Plunkett *et al*. 2005; Murray and McCormick 2005, 70). Secondary evidence for grain production can be provided by the presence of sickles, plough parts, quern stones, corn-drying kilns and mills. Some of this evidence will be considered later in this chapter.

Evidence for fruit and vegetable growing is also provided by the documentary sources and archaeobotanical study. The historical sources indicate that the range consumed was rather limited. The most important vegetables seem to have been beans and peas (Kelly 1997, 248-49) but the exact translation of terms used for other vegetables is unclear. The term '*cainnenn*' has been identified as onion, garlic or leek, although Kelly (*ibid*. 251) prefers onion and suggests that '*borrlus*' refers to leek (*ibid*.). Cabbage and chives are also identified and, perhaps, celery (*ibid*.). The texts do not refer to herbs as such, apart from a single reference to some unidentified 'foreign herbs' used for medicinal purposes which Kelly (*ibid*. 257-58) feels may have been confused with mineral remedies. According to the documentary sources the only cultivated fruits consumed were apple and plum (*ibid*. 259-60). Non-food cultivated plants comprise woad, madder and flax (*ibid*. 264-70).

Most of these cultivated plants are not represented in the pollen or macroscopic early medieval plant record, for example, in the survey of the Munster material, Monk *et al*. (1998, 68) did not note any cultivated species other than cereals. A waterlogged deposit at Augherskea, Co. Meath produced seeds of mint and 'cabbage/turnip/mustard' (Baker 2010, 7).The most comprehensive study of macroscopic plant remains are from tenth/early-eleventh century deposits from the Viking settlement in Fishamble Street, Dublin (Geraghty 1996). The main cereal noted was barley, followed by oat and wheat. The only other cultivated seeds present were flax, horse-pea, and apple (although some of the apple seed may be pear (*ibid*. 40)). Walnut, which must have been imported, was present, as well as a range of native wild edible plants.

The archaeology of grain-processing – mills and kilns

Early Medieval Horizontal and Vertical Mills

Processing grain on a domestic scale could be undertaken with a hand quern, and this appears to have been the only method used in Ireland before the beginning of the early medieval period. More extensive processing, however, necessitates animal, wind or water power. Although animal-powered mills were the most commonly used method for grinding grain in Roman times in southern Europe, there is no evidence for them in early medieval Ireland; and there is no evidence for wind-powered mills in Ireland before the thirteenth century (Brady 2006, 43). The great majority of the early medieval watermills are powered by

rivers, but three – Nendrum, Co. Down; Little Island, Co. Cork; and Knocknacarrage, Co. Galway – are tidal mills, while two – Kilbegley, Co. Roscommon; and Ballygarriff, Co. Mayo – were powered by water fed from springs (Rynne 2009, 88-90). Excavations on early medieval Irish water mills tend to concentrate on the actual mill buildings and associated machinery. As such the excavated evidence for the wider layout of associated watercourses, such as the milldams and millponds, is much more restricted, with the notable exceptions of the monastic mills at Nendrum, Co. Down and High Island, Co. Galway. The great majority of early medieval mills are of the horizontal wheeled type where the water was directed from a wooden flume or chute into the curved millwheel paddles, which in turn rotated the millwheel located in the upper part of the building. Rynne has further subdivided horizontal mills into single and double delivery chute types (2000, 19). Horizontal mills are discussed in detail in the early documentary sources (Mac Eoin 1981; Rynne 2000, 3-12), and appear to have emerged fully-fledged into the Irish landscape, with no obviously experimental forms having yet been discovered.

Rynne (2000) provides a detailed analysis of the construction, engineering and layout of early Irish mills, and has demonstrated the carefully chosen nature of their selected locations (Rynne 2009, 85). Early medieval horizontal mills demonstrate similarities with traditional mill construction across the Mediterranean world as far as the Balkans. Unfortunately in most of these areas there are few, if any, early examples contemporary with Irish mills to allow for comparative analysis to be undertaken. In fact the earliest examples of many aspects of watermill engineering documented in more modern European examples are to be found in the early Irish mills (Rynne 2000, 3).

Building on the previous work of Rynne (2000), Brady (2006) produced a general overview of the chronology and distribution of early medieval mills in Ireland. Brady's article includes a list of all known early and later medieval sites – a total of 97 mill sites. A detailed table of the most recent published list of *dated* Irish mills, and discussions of millstones and paddles from other sites, was produced by McErlean and Crothers (2007, 11) (Fig. 6.1; Table 6.1). Rynne (2007c) considered Brady's figure to be an under-estimate because he did not include incidences of millstones found *near* streams, and more recently Rynne has suggested that here is evidence for about 130 mills (though he does not provide a revised list) (2009, 85).

Vertical undershot watermills were described by Marcus Vitruvius Pollio in his first-century B.C. work, *De Architectura* (McErlean and Crothers 2007, 26)), and are known from at least the third-century A.D. in Roman Britain (Rynne 2000, 17). In contrast the earliest excavated evidence for horizontal mills is from late-third/early-fourth century A.D. Tunisia (McErlean and Crothers 2007, 16). The two types of mill technology – vertical and horizontal – appear to have been adopted almost contemporaneously in Ireland. The publication of Nendrum, Co Down (McErlean and Crothers 2007) provides the most detailed analysis of an Irish mill site. A horizontal tidal mill was built at Nendrum *c*. A.D. 619, with a second mill replacing it *c*. A.D. 789 (*ibid*. 25, 80). Although there are fewer excavated examples of early medieval vertical undershot mills – Little Island, Co. Cork; Morrett, Co. Laois; and Ardcloyne, Co. Cork (McErlean and Crothers 2007, 11); Killoteran, Co. Waterford (Murphy and Rathbone 2006, 26, 130) – the earliest of these (Little Island: dendrochronologically dated to A.D. 630) appear to have been built around the same time as the earliest dated horizontal mills (Nendrum: dendrochronologically dated to A.D. 619). The vertical mill at Killoteran, Co. Waterford produced two calibrated radiocarbon dates of A.D. 410-650 and A.D. 340-600 (2Σ) (Murphy and Rathbone 2006, 26, 130). This may imply that vertical mills were an earlier introduction into Ireland than horizontal mills, however it is not feasible to compare dendrochronological dates (which have a high degree of precision) with radiocarbon dates (which have a larger inbuilt margin of error). The majority of the 48 mills dated by the late-2000s were pre-tenth century in date (Rynne 2009, 86), and showed an intense period of mill-building between A.D. 750 and A.D. 850 (Brady 2006, 49) (Fig. 6.3). This hundred year period coincides with a change in emphasis from livestock to arable farming (McCormick and Murray 2007, 112-15) (Figs. 6.1 and 6.2).

There appears to have been a concentration of milling activity in the south and south-east of the island (Brady 2006), however Rynne (2007, 34) considers this distribution to be the product of systematic fieldwork in search of mills undertaken in the mid-twentieth century by Winedale, Fahy and O'Kelly, and extensive drainage schemes in the last decades of the twentieth century. A number of milling complexes excavated outside the south and south-east, such as Raystown, Co. Meath (Seaver 2006, 2010), support Rynne's argument. This site contains a series of eight watermills, found in association with grain-drying kilns, souterrains and a cemetery, and seems to be a specialised milling site involved in processing grain on an almost industrial scale. A mill-race and a drystone-built undercroft were also excavated at the Island/Martin's Row near the medieval church of Chapelizod, Co. Dublin (Walsh 2002:0492). This mill was rebuilt on at least three occasions, and the mill complex appears to date to the tenth/eleventh century.

Early Medieval Grain-Drying Kilns

Grain-drying kilns were in use along the fringes of Atlantic Europe from the prehistoric period until the late-nineteenth century, when they were gradually replaced by more advanced grain-drying machinery. The damp climate in Ireland made it especially necessary to dry grain before storage, consequently, such kilns were found wherever cereals were harvested and processed. Early documentary sources make frequent reference to their use (Kelly 1997, 241-42), and the *Críth Gablach* indicates that some kilns were part-owned by multiple owners (*ibid.*). These structures tended not to have been located within raths, so were rarely encountered during excavation before the development of road construction projects in recent years. The first overview of the archaeological evidence for Irish grain-drying kilns was published by Monk and Kelleher (2005).

At its most basic form, a kiln consists of a furnace with a flue that supplies hot air to the drying chamber. Archaeologists have defined kilns by their shape in plan, and there are five major typological groups – keyhole-shaped; figure-of-eight shaped; dumbbell shaped; 'L'- or comma-shaped; and pit/irregular-shaped kilns (Monk and Kelleher 2005). This typology is not rigid and there can be considerable overlapping of the types, for example the 'figure-of-eight' and 'dumbbell' differ only in the degree to which they are 'waisted' (*ibid*. 80).

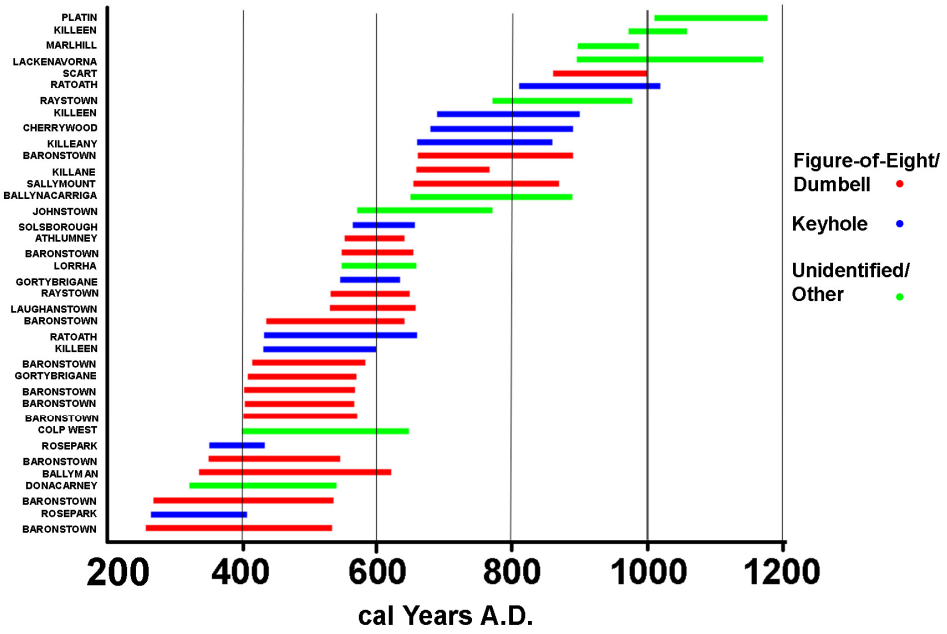

Fig. 6.2: Radiocarbon Dates from Early Medieval Kilns

There are problems in establishing a chronological framework for the development of kiln types in Ireland. Most of the kilns considered in Monk and Kelleher's survey have not been scientifically dated – many have been attributed to the early medieval period on the basis of

their proximity to other known early medieval monuments. Since kilns function better if there is an incline in the flue between the heat source and the bowl, there had been a tendency to build them in pre-existing features such as banks and field fences. The presence of a keyhole kiln in the court tomb at Creevykeel, Co. Sligo (Hencken 1939, 71) provides an extreme example of the danger of dating kilns by their association. Similarly, the keyhole kiln excavated in the bank of the rath at Rathbeg, Co. Antrim (Warhurst 1969, 93) may well date to the later medieval period, since the presence of wheel-thrown medieval pottery provides evidence for later activity on the site. Even where available, radiocarbon dates are not necessarily reliable, since the context and material used to provide a sample is often not stated (Monk and Kelleher 2005, 105) (Fig. 6.2; Table 6.2).

Monk and Kelleher (2005, 105) noted that most excavated keyhole kilns tend to date to the later medieval and post-medieval periods, even though this shape of kiln is known in late-Roman Britain (*ibid*.). They also noted that the figure-of-eight kilns and dumbbell kilns were, 'in evolutionary terms, earlier than the keyhole types' (*ibid*.). Although this chronology is generally correct (Fig. 6.4), there are enough exceptions to this time-scale that it is not possible to definitively date a grain-drying kiln by typology alone. Many keyhole kilns, for example, produced early dates, e.g. A.D. 262-405, A.D. 348-435 (2Σ) (Rosepark, Co. Dublin (Carroll 2008, 26)), A.D. 420-600 (2Σ) (Killeen, Co. Meath (Baker 2009, 43, 60)), and A.D. 563-659 (Solsborough, Co. Tipperary (Murphy 2000:0965)) (Table 6.2). A radiocarbon date of A.D. 790-1030 (2Σ), however, was obtained from a keyhole kiln at Leggetsrath West, Co. Kilkenny (Lennon 2006, 47), suggesting that keyhole kilns were used throughout the early medieval period in Ireland. Dates from the figure-of-eight kilns appear to concentrate in the fifth and sixth centuries (Fig. 6.4), for example cereal grains from figure-of-eight shaped kilns found at Raystown, Co. Meath (Seaver 2006, 82), produced calibrated dates of A.D. 410-560; A.D. 570-660; and A.D. 380-550 (2Σ) (O'Sullivan and Stanley 2006, 134); and three figure-of-eight kilns at Laughanstown, Co. Dublin (Seaver 2005a, 58-59) produced closely-grouped dates of A.D. 530-650, A.D. 540-650 and A.D. 540-660 (2Σ) (O'Sullivan and Stanley 2005, 150). An 'hourglass-shaped' kiln – i.e. 'dumbbell type' – excavated near the ecclesiastical site of Ballyman, Co. Dublin (O'Brien 2005, 296-97) also produced an early calibrated radiocarbon date of A.D 336-620. The shape of the kiln seems to be less important than the manner of its construction, and in general there seems to be a chronological progression from smaller earth-cut kilns to larger stone-lined constructions.

Over thirty sites have evidence for early medieval grain-drying kilns, some producing several examples (Table 6.2). They are generally absent from raths, and where found may well be later additions, for example the slate-roofed kiln at Ballycatteen, Co. Cork (Ó Ríordáin and Hartnett 1943, 11-12), or the keyhole kiln at Rathbeg, Co. Antrim (Warhurst 1969, 93). The disassociation between grain-drying kilns and enclosed settlements may have derived from practical considerations. Monk (1981, 117) notes that the Laws stipulate that kilns should be located away from dwelling houses, presumably because they constituted a fire hazard. Thus the cereal-drying kilns at Balrothery, Co. Dublin were located at the bottom of a hill outside the site enclosure (Carroll 2008, 103), and a number of kilns were excavated on unenclosed sites, un-associated with other settlement. There is a concentration of kilns in Leinster, with Dublin, Meath, Louth and Kildare providing the great majority of the sites, and, while arable farming was likely to have been of more significance in these eastern counties, the bias in modern development may be reflected in this distribution.

A close, symbiotic relationship could have been expected for the use of grain-drying kilns and mills, with kilns providing moisture-reduced cereal to the mills where it would have had less chance of gumming-up the millstones. Damp grain is not a major problem with hand querns as the top quernstone can be easily lifted and cleaned, however millstones tend to be much larger than those of a rotary hand quern – McErlean and Crothers (2007, 191-94) noted that while quernstones had diameters of 0.30-0.50m, millstones regularly had diameters of up to 1.06m – so dismantling would be more difficult. More importantly, however, sudden clogging and jamming of the stones could cause the rynd bar to snap. This mechanism transferred the power of the spindle to the upper millstone, and so if it broke, the mill would have stopped

working, and this would be a major problem to rectify. Dendrochronological dates from mills show an intense period of activity between A.D. 750 and A.D. 850 (Brady 2006, 49) (Fig. 6.1), however the radiocarbon dates from kilns suggest a major phase of use between *c*. A.D. 400 and 600, with relatively few dates contemporaneous with the mill-construction phase (Fig. 6.2). It is possible that, rather than providing dry grain for industrial milling, many of these kilns may have been used to dry out cereal prior to storage and potential small-scale domestic processing. The construction dates of both kilns and mills are also intriguing when viewed against palaeoclimatic reconstructions for this time period. A 'major shift towards wetter conditions is observed *c*. cal. A.D. 770, indicating climatic deterioration' (Kerr *et al*. 2009, 2871), yet this coincides with the major construction phase of mills, and near the radiocarbon-dated end of use for cereal-drying kilns. It seems clear that further work is required to understand the interaction between these cereal processing structures, and the response of the early medieval farming community to climatic events.

Organisation of the Farming Landscape

A mixed farming economy, incorporating both arable and pastoral aspects, will leave physical remains in the landscape, and it is clear that early medieval Ireland was highly organised into fields divided by banks and ditches, wooden fences or stone walls (O'Corrain 1983; Kelly 1997, 372-78). This was especially important in Ireland where hay was not saved, and where *etham ndíguin* (un-grazed 'preserved' grass) was used for winter fodder (Kelly 1997, 45-6). This necessitated that cattle be kept away from this pasture during the summer months. The *Bretha Comaithchesa* (Law of Co-Tenancy) mentions areas called '*faithche*' and '*gort faithche'*, and while '*faithche'* is generally translated as 'green' or 'infield' and seems to refer to an area in front of the rath, '*gort faithche'* suggests a tilled field within the more genera infield (Kelly 1997, 370). Although fundamentally important to understanding how the rural economy functioned, few excavations have been undertaken to establish the dates of fields/field boundaries and their potential association with archaeological monuments. The nature of the local landscape often means that ancillary features survive around cashels, which might not survive elsewhere. Stone field-walls survive quite well in the Burren, Co. Clare, and contemporary fields survive at a number of sites including Ballyegan, Co. Kerry (Byrne 1991), Ballynacragga, Co. Clare (Quinn 2000:0051); and Carraig Aille I and II, Co. Limerick (Ó Ríordáin 1949a).

Excavations revealed a series of outer enclosures and small annexes – about 0.1 hectares each – around the rath at Baronstown, Co. Meath (Linnane and Kinsella 2007, 57-59, 2009, 104-11), and similar small annexes have been found on other early medieval sites, such as Castlefarm, Co Meath (O'Connell 2006, 19; 2009a, 47-51). A number of features were uncovered between the inner and outer ditches of an enclosure at Balriggan, Co. Louth (Delaney 2010). These included a D-shaped enclosure and a square-shaped enclosure, both of which were interpreted as possible paddocks/animal pens. A number of smaller enclosures at Balriggan, as well as the small enclosures/annexes at Baronstown and Castlefarm, were interpreted by the excavators as gardens for growing cereals and/or vegetables. Since vegetables need a high degree of maintenance in the form of thinning, weeding and continual cropping, it is likely that they would have been located near settlements.

The rich soils on the small island monastery at Illaunloughan, Co. Kerry were artificially-made plaggan soils, which must have been derived primarily from organic material brought onto the island, augmented and enriched by discarded food waste. This can only have been deliberately imported in order to create a garden soil (Murray and McCormick 2005, 76). Similarly, it could also be assumed that the soils on the terraced gardens on Skellig Michael (Horn *et al*. 1990, 36) are of early medieval date but this has not been proven. Deepened soils were found at the early ecclesiastical site at Kilnasaggart, Co. Armagh (Hughes and Hamlin 1977, 108). It was assumed that the ground had artificially heightened to provide an adequate depth of soil for burials (*ibid*.), but it seems more likely that this also represents a garden soil of putative early medieval date. Gardens seem to have been especially important in monasteries, and artificially deepened soils have only been found on early medieval ecclesiastical sites. The gardener is listed as one of the seven officers of the church (Kelly

1997, 251), and the French patron saint of gardeners is the Irish Saint Fiachra, who founded a monastery with a fine garden at Breuil near Meaux (Reeves-Smyth 1999, 108). There is no mention of gardeners being among the servants employed by a king or lord.

Evidence for external enclosures and linear fields were found at Corbally, Co. Kildare (Tobin 2003, 34), Ninch, Co. Meath (McConway 2002, 18-19), and Balgatheran (1), Co. Louth (Chapple 2000:0638), but field fences are notoriously difficult to date, and rarely produce diagnostic datable objects or suitably stratified samples for radiocarbon analysis (Table 6.3). A number of sites uncovered cultivation furrows with associated early medieval occupation debris, for example a fragment of lignite bracelet was recovered from cultivation furrows at a settlement/cemetery site at Augherskea, Co. Meath (Baker 2007b, 318). The furrows produced a radiocarbon date of Ad 890-1160 (2Σ) (Baker 2010, 6). Pieces of shale bracelet, a glass bead and an iron knife blade were found in the fill of ridge-and-furrows at Ballyconneely/Ballygirreen, Co. Clare (Breen 2000:0047). The most convincing evidence for early medieval cultivation, however, is from Knowth (Site M), Co. Meath (Stout and Stout 2008) where furrows cut, and were cut by, radiocarbon-dated early medieval burials; some of these furrows also produced early medieval radiocarbon dates (*ibid*. 80). Souterrain ware was found in the bottom of a field ditch at Marshes Upper, Co. Louth, and radiocarbon dates placed the associated small rectangular fields to the eighth/ninth century A.D. (Mossop 2002:1335). Souterrain ware and a lignite bracelet were also found in field ditches at Balriggan, Co. Louth (Delaney 2010); and charcoal from beneath a drystone wall at Clonmoney West, Co. Clare returned a radiocarbon date of A.D. 350-610 (Murphy 2001:0055). A series of field fences at Carrigoran, Co. Clare were dated to the early medieval period by the presence of a fragment of comb of early medieval style (Reilly 2000:0055), and another decorated bone comb was used to date one of a number of curving ditches excavated at Grange, Co. Dublin to the eleventh/twelfth century (O'Brien 1997:0087).

Most boundaries, however, are dated by association, for example some of the field fences at Cush, Co Limerick are argued to have been dug while the rath ditches were still un-silted (Ó Ríordáin 1940, 143). If this interpretation is correct, the raths were set within a landscape of rectangular fields of 0.2 hectares-0.3 hectares in area. The very small fields around 'The Spectacles', Co. Limerick – no more than 0.05ha in area – were also argued to be contemporary with the huts (Ó Ríordáin 1949a, 58-59). Circumstantial evidence suggests that at least part of the upland field pattern at Ballyutoag, Co. Antrim is of early medieval date – the two main curvilinear enclosures contain groups of several hut platforms, two of which produced early medieval radiocarbon dates (Williams 1984, 43). Like the Co. Limerick fields, the enclosures at Ballyutoag are again relatively small – 0.14 and 0.15 hectares. Comparable upland sites have also been discovered in several other parts of Co. Antrim (Williams 1983, 239-45) but these have not been independently dated. The fields at Cush, Ballyutoag and Lough Gur, however, are unlikely to be representative of fields in early medieval Ireland. Cush is a conglomeration of eleven raths, located closely together; Ballyutoag, is likely to be an early medieval upland boolying site (the only one so far identified); and the Lough Gur sites are among the very few known unenclosed house site settlements of the period.

Some possible early medieval field boundaries do not appear to be directly associated with settlement sites. A calibrated radiocarbon date of A.D. 783-1032 (2Σ) was produced from a hearth that overlay a backfilled ditch containing animal bone, a bone bead and a piece of blue glass at Ardclone, Co. Kilkenny (Neary 2000:0514); and a linear arrangement of stake-holes, which was traced for 406m across Derryville Bog, Killoran, Co. Tipperary, was dated to A.D. 668–884 (Murray 1997:0546).

Aerial photography or landscape archaeology may be useful in identifying early medieval fields, for example photographs of Bray Head, Valentia Island, Co. Kerry, and a plan published by Mitchell (1989 44; 47-48), indicated a relict landscape containing a farmyard surrounded by a series of small fields. The 'farm yard' appears to contain some rectangular houses, a grain-drying kiln and a small corral. Further excavations proved that the site was occupied from the sixth to the thirteenth century A.D. (Hayden 1994:0117, 1997:0231,

1998:0267, 1999:0324, 2000:0423; Walsh 1995:0132, 1997:0230). Since cereals and vegetables are almost invariably grown in straight lines to facilitate soil preparation, planting and maintenance, it seems likely that fields used for arable agriculture would be defined by linear field boundaries. Although very small fields would only be suitable for spade work, an ard – a primitive plough that scratched the surface rather than turning the sod – necessitated cross-ploughing, for which 'the square is the most convenient shape' (Mitchell 1986, 162). Mouldboard ploughs, which create a cultivation ridge as part of the ploughing process, would be more suited to elongated plots. The presence of cultivation ridges cannot, however, be taken as an indicator of the use of a mouldboard plough. Tilting an ard produces a rudimentary ridge, and these have been created in Ireland since at least the Early Bronze age (Mitchell and Ryan 1997, 206). It is extremely difficult to ascertain how a cultivation ridge was constructed by its visual appearance (although the literature contains many claims to the contrary). These ridges are also extremely difficult to date – those sealed by an overlay of peat can often be provided with a *terminus post quem* date by radiocarbon dating the basal peat deposits, but other methods of dating are less secure.

If linear fields are representative of arable farming, and, by inference, curvilinear fields are more practically utilised for livestock, the location of these fields in respect to dwellings may help understand the agricultural geography of early farms. The *Cambridge Air Survey* of Ireland, undertaken in the 1950s and 1960s by J. K. S. St. Joseph, recorded examples of irregular fields apparently associated with early medieval sites such as the destroyed rath at Rathangan, Co. Kildare (Norman and St. Joseph 1969, 64 (Pl. 35)), or the irregular field walls around the cashels at Corrofin, Co. Clare (*ibid*. 1969, 61 (Pl. 32)). Irregular fields, defined by both linear and curvilinear banks, were found in association with raths and hut circles in Co. Antrim, for example at Ballyshee, Killyland and Ballyutoag (Williams 1983); and a similar pattern was found at Oldcastle, Co. Meath, where the modern rectangular fields overlie a mosaic of smaller irregular hexagonal or pentagonal enclosures – not exceeding 0.5 hectares on average (Aalen 1970, 212 (Pl. XX)). Potential early medieval fields were also noted in association with the early medieval hut site at Beginish, Co. Kerry (O'Kelly 1956, 169), and on many parts of Valentia Island in the same county (Mitchell 1989, 47-50).

The Early Medieval Environment

Faunal evidence indicates a diversification in livestock-rearing from the ninth century onwards, characterised primarily by a decline in the importance of cattle (McCormick and Murray 2007). Kerr (2007, 114-16; 2009, 72-74) shows a change in the settlement pattern at the same time with a growing preference, at least in the north of Ireland, for high-status settlement in good arable areas. The ninth century is also marked by a significant expansion in horizontal mill construction (Brady 2006, 39-68). Much of this evidence implies an increase in the importance of arable farming. The documentary evidence, especially the Saint's lives, suggests a strong association between monasteries and arable farming (Stout 1997, 129-30). Archaeological evidence for this association is provided by the presence of mills at monasteries such as Nendrum, Co. Down (McErlean and Crothers 2007); High Island, Co. Galway (Rynne 2000, 15-17); and Inismurray, Co. Sligo (O'Sullivan and Ó Carragáin 2008, 246-51), although, of these, only Nendrum has been dated. It has been noted that the early laws indicate that a miller is one of the 'functional grades' of the church and that mills 'should be seen as a characteristic component of an early Irish monastery' (McErlean and Crothers 2007, 433). The archaeological evidence for increased diversification, however, is not supported by the palynological data.

Modern studies 'demonstrate that, when a few metres from the edge of a cereal field, the value of cereal pollen falls sharply from levels as high value of 20% to about 1%, and is still detectible even at many hundred metres distance' (Hall 2000, 348). Thus pollen evidence from blanket bog cores, which would be expected to be a considerable distance from arable fields, can only record the extremes of cereal production and is incapable of recording more subtle, yet significant, changes and differences in farming economy. As such, Hall (2005) deliberately sampled areas near monastic settlements to see if the foundation of these sites affected farming intensity, especially in crop cultivation. She found no evidence for this –

indeed the evidence indicates that monasteries were generally founded in places where arable farming was already established. It was also noted that 'a comparison of evidence from the monastic and secular sites does not indicate change unique to monastic landscapes' (*ibid*. 11). The suggestion that ecclesiastical sites would have had a higher emphasis on arable farming is not presently supported by the pollen evidence.

Reviews of the pollen evidence for early medieval Ireland express a general consensus that, after a period of agricultural decline, forest clearance and agricultural expansion can be seen during the third and fourth centuries A.D. (Cole and Mitchell 2003; Hall 2000; Hall 2005; Plunkett 2007). This clearly predates the traditional arrival of Christianity in the fifth century. Occasionally wholesale forest clearance does not occur until much later, for example there was significant woodland clearance in Co. Antrim in the ninth century (Hall *et al.* 1993). Parkes and Mitchell (2000) suggest similar clearance in Co. Offaly *c*. A.D. 800, but these profiles were not independently dated. Subsequent work in the same area cast doubts on the interpretation of a ninth century decline, but indicated a decline in tree pollen in the mid-thirteenth century (Hall 2003).

Apart from the areas of highlands and extensive bog cover, the pollen evidence for early medieval Ireland indicates a landscape of scrubby woodland and mixed farming, almost invariably dominated by pastureland. Large areas of extensive forest were rare. Ryan (2000, 33) draws attention to a ninth-century text that refers to only three forest wildernesses in Ireland – the woods of Cooley; Deicsiu in Tuirtre; and the Wood of Moithre in Connacht. Arable farming is present to some extent in nearly all areas, and although there is considerable local variation, significant regional or chronological trends in farming are difficult to identify.

Significant increase in arable farming is only noted from the twelfth or thirteenth centuries, a change which can be attributed to the coming of the Anglo-Normans along, perhaps, with the introduction of the mouldboard plough. The chronology of the development of the plough in Ireland has generally been rather speculative, usually inferred from other evidence and heavily dependent on the perceived British chronology. It is known that the improved plough, with heavy share and coulter was present in Roman Britain, for example a coulter is known from a Roman context in Great Witcombe, Gloucestershire (Fowler 2002, 184). The evidence for the use of the mouldboard in the Roman world is less clear, and they are not mentioned in Pliny the Elder's description of various types of ploughs, a source that makes mention of the use of the coulter (Humphrey *et al*. 1998, 104-5). Fowler (2002, 184) however, makes it clear that the more primitive ard still continued in use during this period and that the improved Roman plough was 'used perhaps only on the more advanced estates in the agriculturally richer parts of the province, like the Somerset/Gloucestershire area'. This improved plough seems to disappear and does not appear again in Anglo-Saxon contexts before the tenth century (*ibid*.). Indeed, Anglo-Saxon manuscript illuminations dating *c*. A.D. 1000 clearly show the use of ards rather than improved ploughs. Mitchell (1986, 153-54; 160-62) proposed an Irish chronology which had the coulter being introduced *c*. A.D. 300, coinciding with the beginning of a period of forest clearance and arable expansion in the Irish pollen record. Mitchell saw further development in Ireland with the introduction of the mouldboard at about 600 believing, erroneously, that the mouldboard was illustrated on some seventh century Anglo-Saxon manuscript illumination (*ibid*. 160). Fowler (2002, 198-203) could find no evidence for the mouldboard in his extensive examination Anglo-Saxon illuminated manuscripts and Langdon (1986, 75-76) argues that the plough depicted on the Bayeux Tapestry is a wheeled ard rather than a heavy plough with mouldboard.

Brady (1993, 37), however, has argued that the coulter did not appear in Ireland until about the tenth century and the documentary evidence appears to support this assessment as the earliest reference to its presence is in an eleventh century source (Kelly 1997, 470-71). The introduction of the coulter in Ireland also seems to coincide with an increase in the size of the ploughshare (Brady 1993, 37, 41-42). The final development of the plough consists of the addition of mouldboard. There is no convincing documentary (Kelly 1997, 471) or

archaeological evidence for the presence of the mouldboard in Ireland in the early medieval period. In Britain, the date of the introduction of the mouldboard is also unclear. Fowler (2002, 203-4) suggests it is likely to have occurred in the tenth century, but Langdon (1986, 75-76) suggests that this may not have occurred until after the Norman Conquest. As such, ploughs which included a coulter and mouldboard may well have been an Anglo-Norman introduction into Ireland.

Exploitation of Natural Food Stocks

Discussions on early medieval food production in Ireland have tended to concentrate on cultivated plants and domesticated animals, however, there is evidence, both documentary and archaeological, that wild species of plants and animals were also exploited during this period. Contemporary written accounts mention that wild plants were gathered and consumed during this period (Kelly 1997, 304-15), and plant macrofossils of various wild species, for example hazelnuts, blackberry, elder and sloe, have been found on archaeological sites (e.g. Mitchell *et al*. 1987, 27). Contemporary documentary sources (Kelly 1997, 272-303) mention hunting and fishing, and this is supported by the archaeofaunal evidence (e.g. McCormick and Murray 2007, 73-78 for fowling and fishing; Soderberg 2004 for red deer hunting; and McCormick 1999 for various mammals). Hunting of wild animals, or at least their consumption, seems to have been more prevalent on ecclesiastical sites than secular ones, for example Illaunloughan, Co. Kerry and Iona, Argyll (Murray *et al*. 2004, 184). This seems to be the case even with secular sites located on coastal locations such as Rathgurreen, Co. Galway (Murray 2002a, 186-91; Hamilton-Dyer 2002, 192-93; Murray 2002b, 194-97). The evidence is more equivocal on inland sites, for example Moyne, Co. Mayo produced a higher incidence of red deer than at any other medieval settlement in Ireland, but fish and wild fowl exploitation was very limited (McCormick 1987, 67).

The exploitation of the sea and the coastal environment during the early medieval period has been the subject of greater study than either fowling or hunting. An overview has been provided by O'Sullivan and Breen (2007); with Murray (2007, 128-31) reviewing the exploitation of shellfish resources, including the use of *Nucella lapillus* (dog whelk) for purple dye production. McCormick and Murray (2007, 74-78) have compiled the evidence for the exploitation of fish, sea mammal and sea-birds during the early medieval period, while Büchner (2001) has provided a detailed review of both the documentary and archaeological evidence for the exploitation of whales and other cetaceans. Most of this work has focused on the archaeo-faunal evidence, though documentary evidence also mentions a range of marine and freshwater resources (Kelly 1997, 282-98). These sources, however, mostly refer to salmon and trout, and exclusively marine species are rarely mentioned by name. Although hooks and (possible) net sinkers have been found on a small number of sites (McCormick and Murray 2007, 76), the artefactual evidence for fishing is rather limited, with the exception of the fish trap. One early law tract on land values refers to 'the law of the estuary' (Kelly 1997, 553), which mentions '*ar inber esig nanta*' (*ibid.*). Kelly was unsure of the meaning of the term '*nanta*', suggesting that it meant 'stays' or 'remains', and thus may refer to permanent fish traps. Recent inter-tidal archaeological surveys on the Shannon estuary (O'Sullivan A 2001a; O'Sullivan 2003b; O'Sullivan 2005) and Strangford Lough (McErlean *et al*. 2002, 144-85) have revealed physical traces of such fish traps.

Fish traps are artificial barriers of stone or wood built in rivers or estuaries to deflect fish into a lagoon where they could be trapped in nets or baskets. The fish traps typically consisted of two (or more) converging vertical fences or walls, forming a large V-shaped structure (McErlean *et al*. 2002, 150). A woven wicker basket supported on a framework, a net, or a rectangular/curvilinear enclosure of wooden posts or nets was placed at the apex, or 'eye', of the trap. Medieval fish traps varied significantly in location, form, size, and style of trapping mechanism, depending on the relative size of the catch intended, the foreshore topography and current conditions and the customs and practices of local fishermen. Recent studies of early medieval fish weirs around the coastline of Britain and Ireland indicate that there can be strong continuities of form over centuries. Anglo-Saxon fish traps on the estuaries of the Essex coastline were built, repaired and reactivated through the sixth to eighth centuries A.D.

Similarly Saxon and Norman fish traps on the Severn estuary indicate local continuities of form, so much so that it might be suspected that the fish traps themselves acted to preserve local memories of good fishing grounds. This broader perspective also reveals that early medieval fish traps were most in use around the coastlines of Britain and Ireland in the seventh century A.D., and also again in the thirteenth/fourteenth centuries A.D., presumably relating to some social and cultural processes such as human population growth or perception of fish as an economic resource.

The Strangford Lough fish traps were ebb-weirs, intended to catch fish on the falling tide. They were mostly concentrated in Grey Abbey Bay and around Chapel Island in the north-east part of the lough, and at least fifteen wooden and stone-built traps have been recorded. It was impossible to date the stone traps but a wooden component produced a calibrated date of A.D. 783-979 (1Σ) (McErlean *et al*. 2002, 158), while the wooden traps were radiocarbon dated to between the eighth and thirteenth centuries A.D. A wooden trap at Chapel Island (*ibid*. 158-62), for example, produced radiocarbon dates of A.D. 711-889 and A.D. 685-773 (1Σ), and had been the subject of frequent repairs or attempts to make the fences 'fish-tight' through the use of hundreds of closely-spaced posts. The wooden fish traps from the area of Grey Abbey Bay (*ibid*. 180-85), produced later dates – A.D. 1023-1161; A.D. 1250-1273; A.D 1037-1188 and A.D. 1046-1218 (1Σ) (*ibid*.). The earlier traps, which were over 100m in length, may have been associated with an early medieval ecclesiastical site, while the later ones may have been the property of the Cistercian community at Grey Abbey, which was founded in A.D. 1193.

Archaeological surveys on the Shannon estuary (O'Sullivan A 2001a, 2003b, 2005) revealed evidence for several medieval wooden fish traps designed to catch fish on the flooding or ebbing tide. In season they would have taken large catches of salmon, sea trout, lampreys, shad, flounder and eels (the latter in October-November). These weirs tended to be small, V-shaped post-and-wattle structures (with fences 20-30m in length) with basket traps, set in the narrow, deep creeks that dissect the estuary. Despite being relatively small, their location meant that they could have sieved the water of all fish moving around with the tides. The earliest known fish trap is a post-and-wattle fence, about 8m long, on the Fergus estuary, Co. Clare, a tributary of the Shannon estuary. It has been radiocarbon dated to A.D. 442-664 (2Σ), making it one of the earliest known fish traps in Ireland (O'Sullivan A 1993, 56). It was probably part of a series of fish traps that would have been used by the inhabitants of the raths set on the low hills adjacent to the estuary. Early medieval fish traps have also been located on the mudflats of the Deel estuary, Co. Limerick (which flows into the upper Shannon estuary). Deel 1, dated to A.D. 1041-1208 (2Σ) is a small V-shaped fish trap, with two converging post-and-wattle alder wood fences measuring over 30m in length (*ibid*.); and a fish trap at Bunratty (No. 4) produced a date of A.D. 1018-1159 (2Σ) (O'Sullivan A 2003b, 457). Although a number of these traps were dated to as early as the fifth century A.D., other Shannon fish traps indicate a local continuity of size, form and location between the eleventh and the late-fourteenth century A.D.

Conclusion

A substantial amount of new archaeological evidence for agriculture in early medieval Ireland has been discovered in recent years. The general character of early medieval agriculture; the role of dairying; the role of arable crops and the place of farming in early Irish society have all been reconstructed from archaeological, environmental and historical evidence. There is also good evidence for early medieval fields and enclosures, for kilns and mills, for track ways and fisheries and other features. The well-known revolutions in early Irish farming can now be matched with a revolution of the scale and intensity of settlement and land-use in the Irish landscape, and the emergence of a better understanding of the real role of farming in social life and practice. Further work, however, is still required to understand the driving forces behind these changes in early medieval farming, and especially in trying to judge the impact of the responses to climatic deteriorations and ameliorations.

Table 6.1: Dendrochronological Dates from Early Medieval Mills (McErlean & Crothers 2007, 11 unless otherwise stated)

Mill Site	Mill Type	Dendrochronological Felling Date (A.D.)
Nendrum, Co. Down	Horizontal	619
Little Island, Co. Cork	Horizontal	630
Ballykilleen, Co. Offaly	Horizontal	636 ±9
Ballygormill South, Co. Laois	Horizontal	719 ±9
Ballinderry, Co. Londonderry	Horizontal	744 ±9
Newcastle Upper, Co. Wicklow	Horizontal	744 ±9
Drumard, Co. Londonderry	Horizontal	782
Nendrum 2, Co. Down	Horizontal	789
Crushyriree, Co. Cork	Horizontal	799 ±9
Cloghbally Upper, Co. Cavan	Horizontal	803 ±9
Mullantine, Co. Kildare	Horizontal	804 ±9
Cloongowna, Co. Clare	Horizontal	808 ±9
Maghnavery, Co. Armagh	Horizontal	810 ±9
Boherduff, Co. Galway	Horizontal	810 ±9
Ballygearda, Co. Kilkenny	Horizontal	811 ±9
Rasharkin, Co. Antrim	Horizontal	822
Ballynoe, Co. Cork	Horizontal	827 ±9
Cloontycarthy, Co. Cork	Horizontal	833
Ballydowne West, Co. Waterford	Horizontal	841 ±9
Keelarahea, Co. Cork	Horizontal	843
Farranmareen, Co. Cork	Horizontal	873 ±9
Coolboy, Co. Wexford	Horizontal	873 ±9
Lowesgreen, Co. Tipperary	Horizontal	890 ±9
Brabstow, Co. Kilkenny	Horizontal	913 ±9
Clonlea, Co. Clare	Horizontal	914 ±9
Newtown, Co. Tipperary	Horizontal	914 ±9
Ballyroe, Co. Wexford	Horizontal	916 ±9
Rossory, Co. Fermanagh	Horizontal	926 ±9
Knocknarragh, Co. Galway	Horizontal	973 ±9
Carrickmines Greater, Co. Dublin	Horizontal	1123 ±9
Corcannon, Co. Wexfordq	Horizontal	1128 ±9
Clonlonan, Co. Westmeath	Horizontal	1149 ±9
Ballymascanlan, Co. Louth	Horizontal	1243 ±9
Little Island, Co. Cork	Vertical	630
Morret, Co. Laois	Vertical	770
Ardcloyne, Co. Cork	Vertical	787 ±9
Johnstown, Co. Meath (Clarke 2010, 70)	Vertical	1116-1134

(*±9 figures represent an estimated date of felling where there was insufficient sapwood/heartwood available. This was arrived at by adding 32±9 to the last heartwood ring present)

Table 6.2: Dated Early Medieval Cereal-Drying Kilns

Name	Site Type	Comment	Type	Reference
Athlumney, Co. Meath	Enclosure	A.D. 551-643 (?)	Figure-of-eight	McQuade 2006:1254
Ballyman, Co. Dublin	Ecclesiastical	A.D. 336-620 (?)	Dumb-bell	Monk & Kelleher 2005, 109
Ballynacarriga, Co. Cork	Near enclosure complex	A.D. 650–890 (2Σ)	Unidentified	Noonan 2001:0116
Balriggan (1), Co. Louth	Cemetery/ settlement	A.D. 60-250 (?)	Figure-of-eight	Delaney & Roycroft 2003, 19; Delaney 2010, 97
Baronstown, Co. Meath	Cemetery/ settlement	F1018 A.D. 658-861 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	F1098 A.D. 547-655 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	F1153 A.D. 402-568 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	F2142 A.D. 348-547 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	F1343 A.D. 402-568 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	F2172 A.D. 434-643 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown,	Cemetery/	F3448	Figure-of-eight	Kerr *et al.* 2009, 453-54.

Name	Site Type	Comment	Type	Reference
Co. Meath	settlement	A.D. 401-569 (2Σ)		
Baronstown, Co. Meath	Cemetery/ settlement	F3554 A.D. 415-584 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	F4199 A.D. 263-537 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Baronstown, Co. Meath	Cemetery/ settlement	A.D. 257-532 (2Σ)	Figure-of-eight	Kerr *et al.* 2009, 453-54.
Bray Head, Valentia, Co. Kerry	Unenclosed settlement	A.D. 934 + 110 (?)	Unidentified	Hayden 1993:0117
Castletown, Tara, Co. Meath	Isolated	Two sherds of imported early medieval pottery	Figure-of-eight (x3)	Elder 2006:1279
Cherrywood and Loughlinstown, Co. Dublin	Cemetery/ settlement	A.D. 680-890 (?)	Keyhole?	Ó Néill 2006, 71-2
Colp West, Co. Meath	Enclosure complex	A.D. 400–650 (?)	Unidentified	Clarke & Murphy 2001:0952
Donacarney Great, Co. Meath	Isolated	A.D. 320-540 (2Σ)	Unidentified	Rathbone 2007:1302
Gortybrigane, Co. Tipperary	Enclosure	A.D. 408-536 (2Σ) A.D. 430-570 (2Σ)	Dumb-bell	Long 2009, 20, 22-24
Gortybrigane, Co. Tipperary	Enclosure	A.D. 542-633 (2Σ)	Keyhole	Long 2009, 20, 22-24
Johnstown (1), Co. Meath	Cemetery/settle ment	A.D. 570-770 (?)	Unidentified	Carlin *et al.* 2008, 72.
Kilgrovan, Co. Waterford	Ecclesiastical	LRA (1) pottery	Unidentified	Purcell 2003:1882
Killane, Co. Tipperary	Rath	A.D. 654-768 (2Σ)	Figure-of-eight	Long 2009, 20-22
Killeany, Co. Laois	Enclosure	A.D. 660-810 (2Σ) A.D. 840-860 (2Σ)	Keyhole	Wiggins 2006:1172
Killeen, Co. Meath	In annex of rath.	Kiln (F54): A.D. 430-600 (2Σ)	Keyhole	Baker 2009, 43
Killeen, Co. Meath	Between double ecclesiastical enclosures	Kiln (F11): A.D. 690-900 (2Σ)	Stone-lined keyhole	Baker 2009, 60, 76.
Killeen, Co. Meath	Between double ecclesiastical enclosures	Kiln (F75): A.D. 970-1060 (2Σ)	Stone-lined 'comma-shaped'	Baker 2009, 60,77-78
Lackenavorna, Killederdadrum, Co. Tipperary	Enclosure possibly ecclesiastical	A.D. 895-1172 (2 Σ)	Pit feature - possible kiln	Manning 1984, 242; 268.
Laughanstown, Co. Dublin	In association with possible granary building	A.D. 530-650 (2Σ) A.D. 540-660 (2 Σ) A.D. 540-650 (2Σ possible granary))	Figure-of-eight	Seaver 2005a, 58-9; O'Sullivan & Stanley 2005, 150
Lorrha, Co. Tipperary	Ecclesiastical	A.D. 545–660 (no Σ stated)	Unidentified	Linnane 2002:1738
Marlhill, Co. Tipperary	Enclosure	A.D. 855-990 (?)	Oblong	Moriarty 2006:1894
Marshes Upper, Co. Louth	Field system and enclosures	A.D. 30–580 (no Σ stated)	Unidentified	Mossop 2002:1335
Platin, Co. Meath	Multi-phase settlement	A.D. 1010–1180 (2Σ)	Unidentified	Conway 2001:1019
Rathoath, Co. Meath	Enclosures, field system, cemetery	AD 810-1020 (no Σ stated) AD 430-660 (no Σ stated)	"double sided" Keyhole	Wallace 2010, 300-1
Raystown, Co. Meath	Cemetery/ settlement	Cut by burial dated A.D. 410-570 (?)	Unidentified	Seaver 2010, 264, 275
Raystown, Co. Meath	Cemetery/ settlement	A.D. 530-650 (?)	Figure-of-eight	Seaver 2010, 266
Raystown, Co. Meath	Cemetery/ settlement	A.D. 770-980 (?)	Rectangular	Seaver 2010, 270, 275
Rosepark,	Multi-phase	A.D. 262-405 (2Σ)	Keyhole	Carroll 2008, 63-69

Name	Site Type	Comment	Type	Reference
Co. Dublin	settlement with enclosures			
Rosepark, Co. Dublin	Multi-phase settlement with enclosures	A.D. 348-435 (2Σ)	Keyhole	Carroll 2008, 63-69
Rossinan, Co. Kilkenny	Isolated	Two sherds of pottery in flue.	Keyhole	Monteith 2006:1089
Sallymount, Co. Tipperary	Rath and associated enclosure	A.D. 653-770 (2Σ) A.D. 688-870 (2Σ)	Dumb-bell	Long 2009, 20, 24-5
Scart, Co. Kilkenny	Rath	A.D. 860-1000 (?) A.D. 940-1000 (?)	Figure-of-eight	Monteith & Wren 2008, 28
Solsborough, Co. Tipperary	With ditches, pits and hearths	A.D. 563–659 (?)	Key Hole	Murphy 2000:0965
Taylorsgrange, Co. Dublin	Isolated	A.D. 540-647 (?)	Drying pits	Lynch 1998:0222

Table 6.3: Examples of Excavated Early Medieval Ridge and Furrow

Name	Year	Comments	Reference
Augherskea, Co. Meath	2000	With enclosed burial-ground.	Baker 2007b, 318
Ballyconneely, Co. Clare	2000	Associated with pits and gullies south of early medieval enclosure	Breen 2000:0046
Ballyutoag, Co. Antrim	1981-82	Upland transhumance site	Williams 1984, 47-48.
Clonmacnoise, Co. Offaly	1999-2000	Associated with ecclesiastical site	Murphy 2003, 2-4.
Ferganstown/Ballymackon, Co. Meath	1999	Associated with unenclosed souterrain and structure	Hanley 1999:0687
Knowth (Site M), Co. Meath	2002-2003	Associated with cemetery/settlement site	Stout & Stout 2008, 80.
Maynooth Castle, Co. Kildare	1999	Associated with unenclosed settlement	Hayden 1999:0405

Table 6.4: Excavated Field Fences

Name	Comments	Reference
Ardclone, Co. Kerry	Backfilled ditch	Neary 2000:0514
Balgatheran, Co. Louth	Petal-shaped field with enclosure complex	Chapple 2000:0638
Ballycasey More, Co. Clare	Rectangular field enclosures with settlement enclosure	Murphy 2001:0045 O'Neill 2002:0079
Ballynacarriga (1), Co. Cork	With enclosure	Noonan 2001:0115
Ballynacragga, Co. Clare	Drystone walls	Quinn 2000:0051
Ballyutoag, Co. Antrim	Upland transhumance site	Williams 1984, 47-48.
Balriggan, Co. Louth	Field ditches	Delaney & Roycroft 2003, 17-19; Delaney 2010, 96.
Baronstown, Co. Meath	With enclosure	Linnane & Kinsella 2007, 57-9; Linnane & Kinsella 2009, 104-110
Beginish, Co. Kerry	With unenclosed settlement	O'Kelly 1956, 169
Betaghstown, Co. Meath	Ditches with enclosure	Lehane 2004:1187
Bray Head, Valentia Island, Co. Kerry	With unenclosed farming settlement complex	Hayden 1994:0117; 1997:0231; 1998:0267; 1999:0324; 2000:0423; Walsh 1995:0132; 1997:0230.
Cahircalla More, Co. Clare	With enclosure	Taylor 2004:0141
Carrigoran, Co. Clare	Field fences and stone walls	Breen 1999:0046; Reilly 1999:0047; 2000:0055.
Castle Upton, Templepatrick, Co. Antrim	Ditches with early medieval pottery and penannular ring-ditch	Gahan 1997:0006
Castlefarm, Co. Meath	With enclosure complex	O'Connell 2006, 20, O'Connell 2009a, 46-51.
Clonmoney West, Co. Clare	Stone walls	Murphy 2001:0055
Corbally, Co. Kildare	With cemetery/settlement	Tobin 2003, 34; Tobin 2001:0631; 2002:0899; Coyne 2004:0818; 2004:0817.
Cush, Co. Limerick	With raths	Ó Ríordáin 1940, 143.

Name	Comments	Reference
Dalkey, Co. Dublin	With early medieval promontory fort	Liversage 1968, 191-92.
Derryville 54, Killoran, Co. Tipperary	Stake row in bogland	Murray 1997:0546
Dowdstown (2), Co. Meath	With enclosure complex	Deevey 2005, 89; Cagney & O'Hara 2009, 125-29.
Glebe, Site 43 Tully, Co. Dublin	With rath	Seaver 2005a, 59-60.
Grange, Co. Dublin	Field boundaries	O'Brien 1997:0087
Iniscealtra, Co. Clare	With ecclesiastical site	de Paor 1970:0006; 1971:0010; 1972:0006; 1973:0006; 1974:0009; 1975:0009; 1976:0010.
Magheralane, Aghalislone & Magheralave, Co. Armagh	Field ditches with structure	Ó Baoill 2004:0057
Marshes Upper, Co. Louth	Rectangular fields	Mossop 2002:1335
Ninch, Laytown, Co. Meath	With cemetery/settlement	McConway 2000:0760; 2001:1007; 2002:1489; McConway 2002, 18-19.
Rahally, Co. Galway	With rath	O'Sullivan 2004:0706
Ratoath, Co. Meath	With cemetery/settlement	Wallace 2010
Raystown (Site 21), Co. Meath	With cemetery/settlement	Seaver 2006, 82; Seaver 2010, 272.
Roestown (2), Co. Meath	With enclosure complex	O'Hara 2007, 148; O'Hara 2009a, 65-68
'The Spectacles', Lough Gur, Co. Limerick	With unenclosed Huts	Ó Ríordáin 1949a, 58-59
Whiteriver, Co. Louth	With enclosure	McConway 2004:1129.

Chapter 6: Early Medieval Crafts and Technology

Early medieval crafts and industry were crucially important elements of early Irish society. The identification and extraction of raw materials, the various stages of craft production and the distribution of artefacts through trade and exchange, and finally the use, repair and abandonment of objects can all be traced in the archaeological record. Industrial activity also influenced the organisation and layout of early medieval settlements. Ironworking and copper-alloy working were clearly important, if small-scale, activities on many sites, while other sites appear to have been largely devoted to such activities. Manufacture in early medieval Ireland, like settlement, agriculture and other activities, would have been organised in social terms – especially in terms of gender, social rank and status – and manual labour had to be avoided if you were above a certain social rank. The early Irish sources attest to the relative status and importance of different crafts, for example, the early Irish laws, such as the *Uraicecht Becc*, indicate that carpenters, copper-workers and smiths were all of high-status, occasionally having a similar honour-price to that of lower grade of nobility (Kelly 1988, 62). Other sources indicate that the blacksmith was held in high esteem by the community, occasionally figuring as a semi-mythological figure (Scott 1984, 153-55). In contrast, comb-makers were of quite low social status and were scoffed at by the author of the *Bretha Nemed Toísech* (Kelly 1988, 63). The archaeological evidence for crafts and technology has great potential to add new insights into the organisation of labour and the economy of early medieval society.

Recent archaeological excavations have provided a growing body of evidence for the production of iron, copper alloys, bone, antler, lignite, leather, and textile products at a range of early medieval ecclesiastical and secular sites. Evidence for highly specialised activities including glass-working, enamelling and copper-alloying have also being discovered on a number of sites. Of all of these, metalwork has received the most attention with key monographs on ironworking being produced by Scott (1991) and on non-ferrous metalwork (Comber 2004). Most recently Comber's monograph on the economy of the period (2008) has provided an overview of the evidence for the full range of craft working activities in early medieval Ireland and this will undoubtedly be the baseline for future investigations. It also contains a very useful outline of the technical processes used in the various crafts (*ibid*. 231-250).This chapter will review the key evidence for ironworking, non-ferrous metalworking, glass-working and the use of organic materials such as bone, antler, wood and textiles.

Early Medieval Ironworking

Scott (1991), in his comprehensive overview of the subject, examined the evidence for iron-working during from its introduction during the early Iron Age until the end of the early medieval period. He was one of the first to examine in detail the potential evidence for smelting, smithing and mining and the artefacts and technology used behind these processes. Both Scott (1991, 157) and Edwards (1990, 86) highlighted that previous metallurgical studies on important early medieval sites often failed to make a distinction between smithing and smelting furnaces, or failed to collect slag in a systematic way. Knowledge of early medieval Irish ironworking has recently been significantly advanced by the work of Photos-Jones (2008a-d), Carlin (2008), Wallace and Anguilano (2010) and Kenny (2010). These works differentiate between the different stages of ironworking–mining; charcoal production; ore processing (roasting); smelting; bloomsmithing; and forging– and have identified industrial sites un-associated with the settlements.

Mining

No early medieval iron mine has yet been discovered in Ireland, although the large quantity of iron ore from Garryduff, Co. Cork suggested to the excavator that it was derived from nearby ore-bearing surface outcrops (O'Kelly 1963, 103). The majority of iron made during the early medieval period in Ireland, however, is believed to have been derived from bog iron

ore (Scott 1991, 153). Bog iron ore and bog iron slag were found at the rath complex of Cush, Co. Limerick (Ó Ríordáin 1940, 154), and the rath at Mullaghbane, Co. Tyrone (Spence 1972, 43); bog iron ore has also been found at Ballyvourney, Co. Cork (Scott 1991, 221); Lough Faughan, Co. Down (*ibid*. 222) and Clonfad, Co. Meath (Stevens 2007, 42); and possible bog iron ore was identified at Lough Island Reevy, Co. Down (Gaffikin and Davies 1938, 202). Photos-Jones (2008a, 186) concluded that the high manganese content in iron ore fragments found on several early medieval sites in, for example Killickaweeney, Co. Kildare and Johnstown, Co. Meath, most likely indicated that the fragments came from bog iron ore.

Bog iron ore was not the only source of iron, however, and iron-bearing minerals such as limonite (Garryduff, Co. Cork (O'Kelly 1963, 103) and Oldcourt, Co. Cork (Murphy and Ó Cuileanáin 1961, 90)) and haematite (Ballyhenry, Co. Antrim (Scott 1991, 154)) have been found on a number of sites. Ironstone nodules were also found at Nendrum, Co. Down (Lawlor 1925, 140). It is likely that iron ore was found on many other sites but was not recognised as such by the excavators (Scott 1991, 154).

Charcoal production

Early medieval ironworking was dependant on charcoal production. Charcoal is traditionally created in a pit, or a clamp, where wood is allowed to slowly smoulder and carbonise in an oxygen-limited environment. Control over the amount of oxygen within the pit allowed the wood to burn slower than in the open air, and thus produce better charcoal. In general, charcoal production sites consisted of small pits in which timbers were placed against a central vertical post, and then covered with straw, bracken and layers of earth and turf (Carlin 2008, 89).

Kenny's recent overview of charcoal production in Ireland has identified nearly one hundred charcoal pits. They tended to be regular in shape but varied in form comprising circular, oval and rectangular forms (2010, 106). The majority of early medieval examples were rectangular or sub rectangular but sub-oval examples are also known (*ibid*. 111). In many instances the sites seem to have been abandoned and the charcoal left unused. Kenny has analysed the dating evidence for nearly fifty Irish published and unpublished charcoal pits (*ibid*. 109-113). Unfortunately oak was the preferred timber used for charcoal making and as a consequence pits may appear to be older than their actual date of firing. Two of the dates are from the Bronze Age date and must be associated with copper smelting. There is only pit of Iron Age date and most interestingly there are virtually no pits dating before the later eighth century. He is a complete absence of charcoal production during the fifth, sixth and early seventh century. Some nine sites can be dated to between the late eighth and early eleventh century; i.e. Mayfield, Co. Kildare, Harwood 3, Co. Meath, Ballinderry Big 3, Co. Westmeath, Tonaphort 3, Co. Westmeath, Capakeel 2, Co. Laois, Kilbeggan South, Co. Westmeath, Kilmaniheen West, Co. Kerry, Barnsallagh 3, Co. Laois and Monganstown, Co. Westmeath.

Charcoal pits were not found in or near settlement sites and it likely that that they would have been located within or adjacent to wooded areas. Kenny (2010, 110) noted that most charcoal pits were found on gently sloping ground which he suggests would have allowed better run off of surface water which could have interfered with the burning process. In some instances the charcoal burning pits were found close to contemporary iron processing sites (*ibid.* 113).

Ore processing, smelting, bloomsmithing, and forging

The charcoal produced in the clamps was used to smelt bog iron ore in a furnace. Excavations at Garryduff, Co. Cork (O'Kelly 1963, 103), for example, revealed evidence for iron ore roasting, which resulted in the ore changing colour from yellow to red. The smelting process produced iron bloom and iron slag, and the bloom was further refined, reheated and hammered in a smithing hearth to remove excess slag and impurities. Although furnaces and iron slag comprise the main evidence for ironworking on individual early medieval Irish sites

(Table 7.1), blooms, hammerscale, tuyères and ironworking hearths are also occasionally found.

The main difficulty with interpreting the material is that the most common evidence, i.e. slag, can be produced at the smelting, bloomsmithing and forging stages of production (Scott 1991, 151). Furnaces provide the main evidence for smelting, but the evidence of so-called 'furnace bottoms' is less clear (*ibid*. 155). It was initially thought that the simple bowl furnace was the only type used in Ireland during this period (*ibid*. 159), but it is argued that more efficient shaft furnaces – a clay shaft built over a furnace pit –were also used (Carlin 2008, 92). Despite the intensity of iron-ore processing at Johnstown, Co. Meath, however, it was noted that there was no attempt to progress from bowl furnace to shaft-furnace technology (Photos Jones 2008a). The remains of vitrified clay fragments on several sites excavated in Co. Meath are thought to be the remains of these shafts (Carlin 2008, 94), but it should be noted that bowl furnaces may also have had clay covers which could have been vitrified during smelting. Examples of fired clay "furnace covers" were, for instance, found at Ballyvourney, Co. Cork (O'Kelly 1952, 34).

It is theoretically possible to differentiate between slag created in bowl furnaces and slag created in shaft furnaces. The tapped slag from shaft furnaces has a 'characteristic drop-like surface texture' (Photos-Jones 2008a, 193), while the non-tapped slag, characteristic of the slag-pit bowl furnace, tends to form into rounded 'furnace bottoms'. Possible tapped slag, for instance was noted at Boofeenaun crannog, Co Mayo (Keane 1995, 178-79; McDonnell 1995, 183) but the evidence for the use of the shaft furnace is at present far from convincing.

Bowl furnace bottoms can also easily be confused with 'smithing hearth bottoms', although, in general, the larger 'furnace bottoms' tend to have been interpreted as part of the smelting process (Scott 1991, 155-60). On this basis Scott re-identified the furnace bottoms from Ballyvourney, Co. Cork, as representing smithing rather than smelting activity, and thought that the same applied to the material from Garranes (*ibid*. 161-62). He also cast doubt on the identification of 'furnace bottoms' on several other sites. Tuyères can also be indicative of both smelting and smithing (*ibid*.), further complicating the interpretation of ironworking debris. Wallace and Anguilano (2010, 77) comment on the inefficiency of Early Irish ironworking noting that the iron slags consist mainly of iron oxide indicating that "vast quantities of iron [were] lost in the smelting and smithing process".

Extensive evidence for ironworking has recently been uncovered at the palisaded and ditched enclosure at Lowpark, Co. Mayo. The site produced 1,3640kg of metallurgical waste (Wallace and Anguilano 2010, 75). Ironworking on the site dated between the sixth and tenth centuries. Three workshops were located with sunken rectangular buildings while a fourth was within a partially silted up ditch (*ibid.*). It was argued that the sunken locations allowed better insulation for the hearths and made air-flow to the hearths easier to control (*ibid*. 76). The slags indicated that the work-shops were used fro smiting and there was no definite evidence for smelting. Analysis of the slags indicated homogenous chemical composition suggesting that the ore came from a single source. It was also possible to identify areas of different activity in different areas; i.e. tool repair/recycling, bloom consolidation and artefact manufacture (*ibid*. 79-80).

Ironworking in Early Medieval Ireland

Ironworking has been found on a large number of early medieval sites in Ireland (Table 7:1). The evidence is not confined to any site type and is found across the whole spectrum of site types known from the period. There is evidence for ironworking at clearly high status secular sites, such as the trivallate rath of Garranes, Co. Cork (Ó Ríordáin 1942, 105-7), as well as at numerous univallate raths. There is also evidence for ironworking at important ecclesiastical sites, such as Clonmacnoise, Co. Offaly, as well as at small isolated monasteries like Church Island, Co. Kerry. The items produced seem to have largely been domestic and utilitarian, although there was the capability of making more advanced items, such as the bronze-coated iron bells manufactured at Clonfad, Co. Westmeath (Stevens 2006, 10; 2007, 42-43; 2010,

93-98). Several types of craftwork have been identified in Viking Dublin (see below) but, despite extensive excavation, ironworking areas have yet to be identified, although ironworking has been found in twelfth-century Waterford (Scully and McCutcheon 1997, 104). Wallace has speculated that the lack of equivalent finds in Dublin were due to public safety requirements: 'the great fires that were so essential for the smith and his forge almost certainly meant that they had to be located at some distance from the town' (2005, 833).

The degree of intensity of ironworking varied greatly between sites, for example, some sites seem to have been specialised ironworking industrial. The crannog at Bofeenaun, Co. Mayo (Keane 1995), provided no evidence for any type of activity except ironworking, producing evidence for both the smelting and smithing of irons. As well as producing 74kg of slag the site also produced mortars that could have been used for the crushing of ore as well as discarded partially forged iron objects (*ibid*. 172, 179). Hardwood (2), Co. Meath provided evidence for charcoal production as well as smelting and smithing (Photos-Jones 2008c, 1, 22). Both these sites appear to have been specialised ironworking sites un-associated with permanent settlement. A number of other isolated early medieval ironworking sites have been excavated, for example, Dollas Lower and Kiltenan South, Co. Limerick (Dowling and Taylor 2007, 273-74; Dennehy 2007, 291), Hardwood (3), Co. Meath (Carlin 2008, 91) and Aghanaglough, Co. Waterford (Tierney and Elliot 2008). The site at Dooey, Co. Donegal, set among the sand-dunes, is unusual in that there is evidence for ironworking, is evidenced by the presence of 120 iron knives, along with bronze-working, antler-working and dye-making, indicating a specialised broad-based industrial site (Ó Ríordain and Rynne 1961). The marginality of these sites may have appealed to the early medieval blacksmith. It has been suggested that 'crannogs like [Bofeenaun] should be interpreted as the island workshops of blacksmiths, seen as semi-mythical personages in early medieval mythology on the edge of society' (O'Sullivan and Van de Noort 2007, 74). Scott argued that use of Neolithic megalithic tombs for ironworking 'afforded supernatural association' (1991, 149) to the blacksmith's work. The perceived isolation of these sites need not have interfered with their function, for example they may have been visited periodically by local farmers, and Dooey may have been a beach-market for traders moving between northwest Ireland and Scotland (O'Sullivan and Breen 2007, 119).

A number of other isolated sites have also produced evidence for ironworking. Crucible and tuyère fragments were discovered at Platin, Co. Meath (Lynch 2000:0774; Lynch 2001:1022), where an industrial area was recognised by the presence of two parallel gullies which contained iron slag, and had evidence for burning. Industrial activity was also identified at Ballyvollen, Co. Antrim (Williams 1985b), where 170 kg of iron slag was recovered, along with charcoal, a range of iron objects (including a nail and a punch), and three tuyères (*ibid*. 99). Radiocarbon dating suggested that the site was occupied in the seventh century. Iron slag was found at the unenclosed house in Terryhoogan, Co. Antrim (McSparron 2004:0078), and an isolated sod-built structure discovered under Kilkenny Castle, Co. Kilkenny, also appears to have been associated with metalworking (Murtagh 1993). This structure contained a central hearth and the remains of a small furnace; ironworking and bronze-working debris was recovered from this site, which was dated to the twelfth century (*ibid*.).

Most evidence for ironworking, however, was found in association with settlement. Despite the fact that Ballyvollan, Co. Antrim did not produce any actual evidence for furnaces, the large quantities of slag found there (170kg) and at Lisleagh, Co. Cork (800kg) led to their identification as 'specialist sites' that occupied 'the upper tier of iron smelting' (Scott 1991, 101). The settlement/cemetery at Johnstown, Co. Meath also specialised in ironworking, producing some 2,000kg of metallurgical waste (Clarke and Carlin 2008, 73; Photos-Jones 2008a). The slag at Johnstown was derived from bog iron ores, probably sourced close to the site, and although most of the ironworking was associated with smelting and processing this ore, the whole range of ironworking processes was also noted on site. At Lowpark, Co. Mayo, 1,365 kg of waste slag was recovered (Wallace and Anguilano 2010, 75). The slag was 'quite homogeneous in chemical composition, suggesting the use of a single ore source' (*ibid*. 77); and ironworking on the site was radiocarbon dated to between the mid-sixth and late tenth

centuries (Stanley *et al*. 2010, 120). At Killickaweeny, Co. Kildare, ironworking appears more limited than at Johnstown or Lowpark (86kg of slag), but the presence of smelting and smithing slags, along with hammerscale, indicate that all phases of processing occurred there (Walsh 2008, 40-42).

On ecclesiastical sites there is evidence that ironworking was confined to the periphery of the sites and away from the sacred centres of these settlements (Ryan 1988, 45). This is evidenced by the presence of material within the enclosure ditches, e.g. Tallaght, Co. Dublin (O'Brien 1990:0043), Butterfield, Co. Dublin (Carroll 1997:0184), Tullylish, Co. Down (Ivens 1987, 104-106), Clogher, Co. Tyrone (Scott, 1991, 160), and Derryloran, Co. Tyrone (McManus 2003:1843) (Table 7.1). At Nendrum, Co. Down there was evidence for ironworking within the middle enclosure (Bourke 2007, 419) but also outside the enclosure close to the site of the horizontal mill (*ibid*. 407). Ironworking occurred at several locations at Clonmacnoise, and one location on the periphery of the monastery may been chosen in order to be 'away from dwellings where sparks could cause devastating fires' (King 1998, 132). No such safety concerns were demonstrated by the smiths at Reask, Co. Kerry (Fanning 1981, 106-8), Church Island, Co. Kerry (O'Kelly 1958, 69) and 'St. Gobnet's House', Ballyvourney, Co. Cork (O'Kelly 1952, 32-5) where the ironworking took place within the actual houses. It is possible that ironworking occurred after the houses became derelict, as was the case in Illaunloughan, Co. Kerry where the church was subsequently used for ironworking (Marshall and Walsh 2005, 46).

Similar zoning restrictions seem to have applied to secular sites (Comber 2008, 121), for example ironworking tended to be away from the buildings in raths, and there is evidence for ironworking undertaken near the ditches of secular enclosures such as Johnstown, Co. Meath (Clarke and Carlin 2008, 57) and Rathgurreen, Co. Galway (Comber 2008, 121). At Killickaweeney, Co. Meath, there were two areas of ironworking – one at some distance from the dwellings in a separate annex; and the second separated from the dwellings by an internal division (Walsh 2008, 28). The use, or re-use, of standing structures was important for ironworking since it 'required protection from the elements and reduced daylight to judge the flame colour of the smelting furnace and the colour of the metal when it is heated for smithing' (Tierney and Elliot 2008, 105), and possible windbreaks were found in the metalworking areas at Killickaweeney (Walsh 2008, 40-42), as well as at Ahanaglough, Co Waterford (Tierney and Elliot 2008, 101).

Early Medieval Metal-Working (Non-Ferrous)

There is substantially less archaeological evidence for non-ferrous metalworking than for ironworking (Table 7.2). This has been reviewed by Comber (2004; 2008, 133-49), and an earlier review of metal working from monastic sites was produced by Ryan (1988). There is very limited archaeological evidence of raw materials, for example copper ore has only been found at Lagore, Co. Meath (Hencken 1950, 240-41), and lead ore has only been noted at Ardcloon, Co. Mayo (Rynne 1956, 208). There is also little evidence for smelting copper. Slag containing copper, identified by the excavator as 'experimental copper-smelting', has been found at Cooltubbrid East, Co. Waterford (Tierney 2008, 108). On the basis that there was very little slag on the site, a furnace found at Moynagh crannog, Co. Meath, was argued to have been used for *melting* copper rather than *smelting* copper (Bradley 1993, 77-80). The meagre available evidence suggests that the processing of copper ore may have taken place at its source, for example two early medieval smelting furnaces of seventh-/eighth-century date were identified at the Ross Island copper mines, Co. Kerry (O'Brien 2004, 411-22).

Evidence for fine metalworking is generally confined to ecclesiastical and high status secular sites. Bronze and copper-alloy working has been identified in a diverse range of ecclesiastical contexts, from small western monastic sites, such as Reask and Illaunloughan, to established important centres such as Armagh, Downpatrick, and Clonmacnoise, Nendrum and Movilla (Table 7.2.). The furnace at Movilla Abbey, Co. Down may have been used for *melting* copper

scrap, rather than *smelting* copper ore, as it was found in association with crucibles and scrap copper alloy (Ivens 1984b, 77). Although iron slag was identified on the site (Yates 1983, 62), it is less clear whether there was copper slag as well. Equally the 'bronze working furnace' at Iniscealtra, Co. Clare may have functioned as either a smelting or melting furnace. Unlike Movilla, however, there is no mention of clay moulds or crucible fragments (de Paor 1970:0006). Fine metalworking can be regarded as a consistent feature of the large monasteries (Ryan 1988), and may be paralleled with material from high status secular raths, such as Garranes, Co. Cork (Ó Ríordáin 1942), and crannogs such as Lagore (Hencken 1950), and Moynagh (Bradley 1993, 77-80), both Co. Meath.

Most bronze appeared to arrive on site pre-processed in the form of ingots, such as have been found at Nendrum, Co. Down (Bourke 2007, 407), Downpatrick, Co. Down (Ryan 1988, 43), and Clonmacnoise, Co. Offaly (Ó Floinn and King 1998, 123). The main evidence for bronze-working on early medieval sites comes from crucibles, clay moulds and stone ingot moulds, with secondary evidence in the form of motif pieces and scrap metal. The scrap metal presumably was destined for recycling and re-melting, and is the likely reason for the presence of stone ingot moulds on several sites. The importance of scrap and recycling is shown most strikingly by the metalworker's hoard from Shanmullagh on the River Blackwater, Co. Armagh (Bourke 1993, 24-38) which contained a collection of cut-up pieces of ecclesiastical objects. It is possible that some of the decorated bronze scrap found at Clonmacnoise may also have come from ecclesiastical objects (King 1998:0548).

Relatively little work has been undertaken on the analysis of crucible residues in Ireland since the initial overview of the subject by Moss (1927), although the subject has most recently been summarised by Comber (2004, 33-36; 2008, 139-41). The most extensive study on crucible residue remains is for Lagore, Co. Meath (Hencken 1950, 237-39). Although a few of the crucibles only revealed iron residue, most tended to show traces of iron and copper (*ibid*.). Hencken argues against this as evidence for the use of crucibles for ironworking, since melting and casting iron did not develop until the later Middle Ages (*ibid*.). As such, he concludes that the traces of iron 'would have come into the crucibles as impurities in the crudely smelted copper' (*ibid*. 239). Scott (1991, 3), however, suggests that crucibles may have occasionally been used in ironworking at this time. There has been much discussion of the possible uses of the various shaped crucibles and associated objects, such as 'heating trays' (e.g. Ó Ríordáin 1942, 134-39), but no clear picture has emerged.

Although gold and silver artefacts were been made in early medieval Ireland, there is very little evidence for working the precious metals (Edwards 1990, 92). Crucibles with residues of gold have been found at Knowth, Co. Meath (Eogan 1977, 74; Comber 2008, 140) and Clonmacnoise, Co. Offaly (Ó Floinn and King 1998, 123; Comber 2008, 140), suggesting that the metal may have been extracted from the ore one these sites. There is also evidence for gold-working at Clogher, Co. Tyrone (Warner 1989, 186-87), and gold wire found at Movilla Abbey, Co. Down (Ivens 1984b, 95) and at Moynagh crannog, Co. Meath (Bradley 1991, 23) may have been brought to the site for re-melting and re-working, possibly into jewellery. A similar fate appears to have awaited the Viking scrap silver hoard and silver ingot found at Carraig Aille II, Co. Clare (Ó Ríordáin 1949a, 62-64), but, to date, there is no archaeological evidence for silver-working in Ireland (Edwards 1990, 92).

With the exception of Dooey, Co. Donegal (Ó Riordain and Rynne 1961), which was also an ironworking site, there is no evidence for isolated early medieval bronze-working sites. The location of fine metal-working areas within the sites has recently been considered by Comber (2008, 146-48) who concluded that that they are generally found within the enclosures but usually away from houses. There does not, however, appear to be a standardised pattern. At Dunmisk, Co. Tyrone and Knowth, Co. Meath the ironworking and bronze-working areas were located at different parts of the site (*ibid*.), whereas at Reask, Co. Kerry, ironworking and bronze-working seems to have taken place within the same hut (Fanning 1981, 89). Although bronze-working appears largely to have been undertaken in the open-air, it was practised indoors at Reask (*ibid*.), while at Iniscealtra, Co. Clare it seems to have taken place within a

flimsy circular wooden hut (de Paor 1974:0009). Unlike ironworking, there is considerable evidence for bronze-working in Viking Dublin (Table 7.2), and small quantities of tin ore have been found within the town implying the manufacture of the bronze from its constituent parts (Wallace 1987a, 217).

Early Medieval Glass and Vitreous Materials

It had long been thought that glass-working in Ireland comprised the recycling of old pieces of scrap glass, or cullet (Edwards 1990, 92), such as the fragments found at Garranes, Ballycatteen and Lagore (*ibid.*; Harden 1956, 151-52). It has, however, been noted that the beads and studs on these sites differ in colour from the vessel glass, with the implication that glass vessels may have been imported in a complete state for drinking purposes, not simply as scrap (Bourke 1994, 180).

On the basis of crucible residues at Dunmisk, Co. Tyrone, it was possible to identify glass manufactured from its constituent components in Ireland (Henderson 1988). Glass-working and bronze-working were found in the same part of this site (Ivens 1989, 57), and it is likely that similar types of crucibles were used in both cases. Further analysis of crucible residues from other Irish sites is needed to provide more information on the manufacturing process. Although evidence for glass-making is rather limited (Henderson 1988), evidence for glass-working, in the form of glass rods, globules and scrap (Table 7.3), has been found on a number of northern ecclesiastical sites including Movilla Abbey, Co. Down (Henderson 1984, 98-99), Dunmisk, Co. Tyrone (Ivens 1989, 57), Cathedral Hill, Armagh (Harden 1984, 135) and Scotch Street, Armagh (Lynn and McDowell 1988, 60-61).

Enamel working is more difficult to identify. Edwards (1990, 92) suggests that it would have circulated in the form of lumps or rods. Several pieces of decayed enamel were present at Garranes, Co. Cork (Ó Ríordáin 1942a, 121); a lump or yellow enamel was found at Moynagh, Co. Meath (Bradley 1987:0039); while sticks of yellow and gray enamel were found at the monastic site of Armagh (Gaskell Brown and Harper 1984, 136). The enamel from Garranes was green, greenish-yellow and red in colour one fragment was fused with the clay of a crucible.

Early Medieval Amber-Working and Stone-Working

The evidence for stone-working from early medieval excavations is presented in Table 7.4. On certain sites 'jet', 'shale' and 'lignite' are used interchangeably – e.g. Drumaroad, Co. Down (Waterman 1956a, 86); Ballyaghagan, Co. Antrim (Proudfoot 1958, 30) – and it is clear that further petrological research is required before a definitive list of shale- or lignite-working centres in Ireland may be produced. Lignite-working occurred on a number of sites, mainly of high status (Table 7.4), whereas other sites appear to have had specialisations in other stone artefacts, for example stone spindle whorls were made at Carraig Aille, Co. Limerick (Ó Ríordáin 1949a, 94; 100) and Garryduff 1, Co. Cork (O'Kelly 1963, 89-90;), and quern-stones were manufactured at Lagore, Co. Meath (Hencken 1950, 174) and Moynagh, Co. Meath (Bradley 1982-83, 28).

Although shale or lignite could be available locally, amber and jet needed to be imported (Chapter 7). The evidence for the working of these materials is largely limited to Hiberno-Scandinavian Dublin. Amber flakes, lumps, and rejects of beads and amulets were uncovered in a workshop in Fishamble Street, Dublin (Wallace 1987a, 216), and lignite-working was also found in Fishamble Street (*ibid.*). The only other site that produced evidence for amber working was from Scotch Street, Armagh (Lynn and McDowell 1988, 60).

Early Medieval Craft Working with Organic Materials: Bone, Wood, Textiles and Leather

Evidence for woodworking is confined to sites with waterlogged deposits and thus there is a clear bias towards crannogs. Even on these sites the evidence may be under-represented as evidence for craft-working waste may not have been recorded. The main evidence for wood working comprises off-cuts form lathe working (Table 7.5 and Earwood 1993, 198-200). Earwood (*ibid*. 94) noted the similarity between some Irish wooden bowls and imported E ware pottery and it is possible that the latter influenced their design.

Evidence for leatherworking is confined to sites with waterlogged deposits and largely takes the form of off-cuts, although wooden shoe lasts have been found at Lagore, Co. Meath and Deer Park Farms, Co. Antrim (Table 7.5). Extracts from the roots of tormentil (Potentilla erecta) have been used in the tanning process, and traces of this plant were found at Deer Park Farms (Alison *et al*. 1999), supporting the claim that leather was being worked there. The Brittany-based sixth-century '*Life of Philabert*' mentions the trade in Irish shoes (Chapter 7), and taking this in conjunction with the discovery of lasts, it is probable that at least some of the leather-working may have been associated with shoe-making. The only evidence for leather production on an industrial scale comes from Dublin where a deposit of leather waste (18m x 6m and 1m deep) was discovered in High Street (Anon. 1973, 16). This material dates from the twelfth/thirteenth century so may represent post-Norman leather-working in Dublin.

Antler- and bone-working is generally identified by unfinished objects and off-cuts (Table 7.5). Saw-marks on bone or antler are also indicative of industrial manufacture since the saw was not used in butchery at this time. Evidence for bone- and antler-working has been found across a range of sites, both ecclesiastical and secular. As in the case of bronze-working, there is a tendency towards high status secular sites, such as the substantial stone forts of Cahercommaun, Co. Clare, Carraig Aille, Co. Limerick and Dún Eoganachta, Co. Galway; the crannog of Lough Faughan, Co. Down; or the raised rath at Deer Park Farms, Co. Antrim. Ecclesiastical sites that have produced evidence for bone- and antler-working include Armagh; Clonfad, Co. Westmeath; Clonmacnoise, Co. Offaly; Iniscealtra, Co. Clare; Moyne, Co. Mayo, and even the small monastery at Illaunloughan, Co. Kerry. It seems that these crafts were confined to ecclesiastical and high status, and implies that bone and antler objects were traded to sites of lower status.

Direct archaeological evidence for antler-working on an industrial scale has been confined to urban Dublin and Waterford (Table 7.5). In Dublin large deposits of antler waste were found in Viking levels in High Street and Christ Church Place (Anon 1973, 15). The deposits in Waterford dated to the late eleventh and twelfth centuries. While it might be assumed that the antler for these workshops would have been acquired from their rural hinterland, the presence of roe deer amongst the Waterford assemblage suggests that at least some of the antler was imported (McCormick 1997b, 837).

Early medieval textiles and dress rarely survive archaeologically except in extremely waterlogged conditions, such as at Lagore, Co. Meath (Start 1950-1, 201-24), Fishamble St. Dublin (Heckett 2003) and Waterford (Heckett 1991). Both of the latter sites also provided evidence for imported silks. The best, albeit indirect, evidence for textile working is the presence of spindle whorls (Comber 2008, 69-78, 99-104; O'Brien 2010) (Table 7.6). Unlike contemporary Anglo-Saxon England, there is a paucity of loom-weights in Ireland, which has led to the argument that the Irish used a loom that did not utilise loom-weights, and that therefore the so-called 'loom-weights' were used for a different purpose (Hodkinson 1987, 48). Coyne (2010, 83-4) suggests that a rectangular shaped sunken feature from Corbally, Co. Meath is a sunken building used for textile production but the evidence quoted, two bone 'pins or needles', is not convincing.

Flax seeds (*Linum usitatissimum*) have been found at Deer Park Farms, Co. Antrim (Alison *et al*. 1999), and flax pollen has been found in early medieval contexts at Ballyscullion Bog, Co. Londonderry (Hall *et al*. 1993), suggesting that linen may have been produced on site at this period. Ponds or dams would have been required to process the flax fibre, however, with the

exception of possible retting pits identified at Mullingar, Co. Westmeath (Reed 2000:1018), these have been rarely encountered in the archaeological record.

Dye production could also be regarded as evidence for cloth–manufacturing, although the two activities may not have occurred on the same site. Sites dedicated to the extraction of purple dye from dog whelks have been identified by the large numbers of shells found on sites like Inishkea North, Co. Mayo (Henry 1952, 163-78), Dooey, Co. Donegal (Ó Ríordáin and Rynne 1961, 61), and Doonloughan, Co. Sligo (McCormick and Murray 1997:0197). Other forms of dyes have also been recovered, such as woad pods from the raised rath at Deer Park Farms, Co. Antrim (Lynn 1989, 197), and madder seeds from a rath at Carn, Boho, Co. Fermanagh (Morrison 1953, 53-54). The red and purple cloth produced by these dyes could only have been legally worn by high status individuals (Kelly 1997, 263).

Pottery

The manufacture of native pottery was very restricted in early medieval Ireland. With the exception of north-eastern Ireland, where the use of souterrain ware was extensive, evidence is confined to a small number of sites. Souterrain ware is for the most part confined to the modern-day counties of Antrim and Down, and northern Co. Louth (Table 7.7). Rare incidences outside this core area are discussed in Chapter 7 (Table 8.16). The pots are mostly flat-bottomed with straight, nearly vertical sides and were coil-built by hand. Impressions of cut grass and other organic matter are a characteristic feature mostly found on the bases of the pots (Edwards 1990, 73). Souterrain ware pottery has been dated from the seventh/eighth century to the twelfth century (Ryan 1973, 626; Edwards 1990, 74) and there appears to have been a stylistic development from an initial plain pot towards increasing decoration in the form of applied cordons (Armit 2008, 8; Ryan 1973, 626).

Although souterrain ware has been recovered from the same sites as seventh-century E ware, they have yet to be found together in the same contexts. Where stratigraphy occurs the souterrain ware appears to have been deposited at a later date (Armit 2008, 8). A sherd of souterrain ware from a mill in Drumard, Co. Londonderry appears to pre-date the emplacement of timbers felled in A.D. 782 (Baillie 1986, 106), suggesting that souterrain ware was in use by A.D. 780. This date is supported by a calibrated radiocarbon date of A.D. 530-780 (UB-2002 1380±65 BP) from the pre-rath B levels at Dunsilly, Co. Antrim which contained undecorated souterrain ware (McNeill 1991-92, 100-6). The evidence suggests that souterrain ware first appeared in the period from the mid-seventh to the mid-eighth centuries with decorated assemblages appearing during the ninth century at the earliest (Armit 2008, 8). Armit (*ibid.* 14) argues that souterrain ware originated as a southern expansion of the Hebridean pottery-making tradition during the mid-seventh/eighth centuries, with a developed form of souterrain ware spreading from Ulster back to the Hebrides after A.D. 1000.

Relatively little has been written about the actual manufacture of souterrain ware, with the exception of experimentation with the use of grass in the construction of the pots (Ivens 1984c). The lack of consistency in the fabric may have been 'caused by primitive firing techniques using a clamp or bonfire kiln which usually leaves little trace in the archaeological record' (Edwards 1990, 74); and lumps of burnt clay found in association with souterrain ware, for example at Ballyutoag and Ballintoy, Co. Antrim, and Nendrum, Co. Down, is likely to be a by-product of manufacture on a particular site (Comber 2008, 81). The best candidate for a kiln for the manufacture of souterrain ware is at Ballintoy Cave (Jackson 1934, 107; Plate 6). A collapsed stone-built flue was found in the same level as souterrain ware and some 'baked clay' with thumb prints, although if there was an associated bowl this does not appear to have survived. Edwards regards the identification of this structure as a pottery kiln as 'doubtful' (1990, 74); and it is equally unlikely that the kilns discussed by Comber (2008, 83) at Reask, Co. Kerry, Ballycatteen, Co. Cork, and Rathbeg, Co Antrim were used for pottery manufacture.

Although souterrain ware sherds clearly dominate early medieval native pottery finds, there is evidence that other locally-built pottery was being made during this period (Table 7.8). A single piece of dark red pottery with grit inclusions identified at Ballycatteen, Co. Cork (Ó Ríordáin and Hartnett 1943, 37) does not appear to match the other imported types found there because it is not wheel-thrown; and similarly, sherds of 'a coil-built pottery vessel of poorly fired white clay' (Bradley 1991, 18) were found at Moynagh crannog, Co. Meath. A single sherd of black course pottery from an un-stratified context at Lagore crannog, Co. Meath also differed from the imported pottery found on the site (Hencken 1950, 126). The largest assemblage of putative native pottery from outside the souterrain ware area, however, is from Reask, Co. Kerry. Around 100 sherds were recovered which were subdivided into two groups – a light porous grass-tempered type; and a heavier type containing grits (Fanning 1981, 112). Both pottery types are dissimilar to the souterrain ware typical of north-east Ireland, and, as with the finds from Ballycatteen and Lagore, further petrological work needs to be done to identify the provenance of these.

Conclusion

Ironworking constitutes the most abundant archaeological evidence for industrial activity from the early medieval period. Although there are limited examples of the raw ore, furnaces and iron slag provide numerous examples for smelting and smithing. The evidence suggests that ironworking was widely practised, both geographically and socially, which implies that at least some of this activity was undertaken by non-blacksmiths. It is highly probable that large numbers of the farming community had some form of rudimentary knowledge of smithing, perhaps to a level which would allow them to repair equipment, but not to create tools from raw materials. In contrast to ironworking, non-ferrous metalworking and other industrial crafts such as glass-working, amber-, lignite-, stone- and bone-/antler-working appear to have had a limited distribution, both geographically and socially. These skills appear to have been limited to ecclesiastical and high status sites as well as urban centres during the Viking period.

There has been a tendency to focus largely on *what* was being manufactured during the early medieval period, or to examine the mechanics of *how* these artefacts were made. As such, socio-economic factors ranging from the training of the craftsmen, to the sourcing of raw materials, to the commissioning of the finished pieces, are often overlooked. The social dynamics of craft-working, however, must be viewed in conjunction with advances in other fields, such as archaeometallurgical studies, in order better to understand the complexities of industrial activity from this period.

Table 7.1: Evidence for Ironworking from Early Medieval Excavations

Site	Site type	Metalworking features	Artefacts	Reference
Aghadegnan, Co. Longford	Rath	'Two phases of ironworking'		Carroll 1991:0091.
Aghaloo, Rousky, Co. Tyrone	Ecclesiastical		Slag, smithing hearth cakes and hammerscale and a hearth ceramic (lining or tuyère)	Carver 2007, 85-86. Young 2007, 94-96.
Aghavea, Co. Fermanagh	Ecclesiastical	Bowl Furnaces	Slag	Ó Baoill 2000:0352; Anon. 2000, 4.
Ahanaglogh, Co. Waterford	Hearths	Furnaces. A.D. 660-990 (2 Σ)	Slag, anvil stone; smithing waste; furnace bottoms	Tierney & Elliot 2008, 101-106.
Altanagh, Co. Tyrone	Rath	Furnaces	Iron slag, furnace bottoms	Williams 1986, 51-58.
Ardcloon, Co. Mayo	Rath		Iron Slag	Rynne 1956, 208.
Armagh: English Street, Co. Armagh	Ecclesiastical		Slag; tuyères	Crothers 1999, 64, 69, 77.
Armoy, Co. Antrim	Ecclesiastical		Slag	Nelis 2005:0007
Augherskea, Co. Meath	Settlement/ cemetery	hearth-bottoms	Iron slag, charcoal fuel	Baker 2010, 6-7
Balgatheran, Co. Louth	Enclosure		Iron slag	Chapple 2000:0638.
Ballinderry (I), Co. Offaly	Crannog		Iron slag	Hencken 1936, 161.
Ballyarra, Co. Cork	Souterrain		Iron slag	Fahy 1953, 58.
Ballybrit, Co. Galway	Rath		Iron slag	Waddell 1971, 79.
Ballycasey, Co. Clare	Enclosure		Iron slag	O'Neill 2002:0079.
Ballycatteen, Co. Cork	Rath	None	Iron slag, furnace bottoms	Ó Ríordáin & Hartnett 1943, 30.
Ballyfounder, Co. Down	Rath		Iron slag	Waterman 1958b, 49.
Ballyhenry, Co. Antrim	Rath		Ore – haematite	Scott 1991, 154.
Ballyvollen, Co. Antrim	Rath		Iron slag (170kg), 3 tuyères	Williams 1985b, 96-99; Scott 1991, 221.
Ballyvourney, Co. Cork	House site/ Ecclesiastical	Pits	Furnace bottoms (57); tuyères, bog ore	O'Kelly 1952, 32-35. Scott 1991, 154
Ballywee, Co. Antrim	Settlement		Iron slag	Scott 1991, 221.
Balriggan, Co. Louth	Enclosure	Industrial area, iron ore roasting oven	Slag, fragments of a furnace wall "probable remains of shaft"	Delaney & Roycroft 2003, 19. Delaney 2010, 97-8.
Beginish, Co. Kerry	House site		Slag, tuyère	O'Kelly 1956, 182.
Big Glebe, Co. Londonderry	Raised rath		Iron slag	Scott 1991, 222.
Bofeenaun, Co. Sligo	Crannog	Possible furnace	Iron slag (74kg),	O'Sullivan A 1998a, 122
Boho, Co. Fermanagh	Rath		Iron slag	Proudfoot 1953, 55.
Butterfield, Co. Dublin	Ecclesiastical		Iron slag	Carroll 1997:0184
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ cemetery	Furnace	Iron Slag	Conway 1999, 39.
Cahercalla, Co. Clare	Enclosure		Iron slag	Taylor 2004:0141 Hull & Taylor 2005, 38-9.
Cahercommaun, Co. Clare	Cashel		Iron slag	Hencken 1938, 54-5.
Cahergal, Co. Kerry	Cashel		Iron slag and tuyère	Manning 1990:0067
Caherlehillan, Co. Kerry	Ecclesiastical		Iron slag	Sheehan 1996:0165
Carn, Co. Fermanagh	Cashel		Iron slag	Brannon 1981-82b, 64
Carrickmuirish, Co. Waterford	Rath		Tuyère (date uncertain)	O'Kelly 1963, 101.
Cavanapole,	Rath		Iron slag,	Crothers 1996:0015.

Site	Site type	Metalworking features	Artefacts	Reference
Co. Armagh				
Chapelizod, Co. Dublin	Ecclesiastical	Furnace and smithing hearth	Slag	Walsh 2002:0492.
Church Island, Co. Kerry	Ecclesiastical	Pit furnace/ smithing furnace	Iron slag	O'Kelly 1958, 69; Scott 1991, 167.
Clonfad, Co. Westmeath	Ecclesiastical		Archaeometallurgical residues - nearly two metric tons; production of hand bells and brazing. Iron slags and bog ore deposits.	Stevens 2006, 11; 2007, 42; 2010, 85-94
Clonfeacle, Co. Tyrone	Ecclesiastical	Smithing hearths/furnaces	Iron slag, possible tuyère fragment	McHugh *et al*. 2004, 61-63
Clonmacnoise, New Graveyard, Co. Offaly	Ecclesiastical		Slag, furnace bottoms.	King 1992, 13-14; King 1993:0187
Clonmacnoise, (Visitors centre) Co. Offaly	Ecclesiastical		Iron slag, tuyère fragments	Manning 1989:0078.
Clonmacnoise, National School, Co. Offaly	Ecclesiastical	Bowl furnace	Iron slag (4kg), tuyère, furnace bottom	Ó Floinn & King 1998, 130-32.
Clonmacnoise, Co. Offaly	Early medieval bridge		Iron slag	O'Sullivan & Boland 1997:0447.
Conva, Co. Cork	Enclosures		Furnace bottoms; iron slag	Doody 1992:0021; Doody 2008, 602-05.
Coolcran, Co. Fermanagh	Rath	Iron working furnaces	Furnace bottoms; iron slag	Williams 1985a, 71, 77.
Cooltubbrid, Co. Waterford	Hearths	Iron working furnace – size suggests shaft furnace. *Cal* A.D. 420-690 (Σ not stated)	Bloomery slag	Tierney 2008, 107.
Coonagh West, Co. Limerick	Rath		Iron slag	Taylor 2007, 77.
Corcagh Demense, Co. Dublin	Settlement and burials		Iron slag	Carroll 2001:0340.
Croom East, Co. Limerick	Rath		Iron slag; furnace bottom	Shee-Twohig 1977, 32.
Cush, Co. Limerick	Raths 4, 6 and 7		Slag	Ó Ríordáin 1940, 83.
Dalkey Island, Co. Dublin	Promontory fort	Iron smelting pit	Slag; tuyère	Liversage 1968, 135-6.
Deer Park Farms, Co. Antrim	Raised rath		Slag	Scott 1991, 221.
Derryfin, Co. Antrim	Rath	Iron working hearths		Bratt 1975:0004.
Derryhowlagh East, Co. Fermanagh	Crannog		Iron slag	Williams 1993:0105.
Derryloran, Co. Tyrone	Ecclesiastical	Smelting furnace?	Slag	MacManus 2003:1843.
Dollas Lower, Co. Limerick	Isolated metal-working site	Bowl furnace	Iron slag; hammerscale	Dowling & Taylor 2007, 273-74.
Dooey, Co. Donegal	Sand hill site, industrial		Iron slag	Ó Ríordáin & Rynne 1961, 61.
Doras, Co. Tyrone	Ecclesiastical		Iron slag	McDowell 1987, 153.
Downview Park, Belfast, Co. Antrim	Souterrains		Slag	Collins *et al*. 1964, 127.
Dressogagh, Co. Armagh	Rath	Smelting hearth		Collins 1966, 119.
Dromore, Co. Antrim	'Ring work'		Iron slag	Scott 1991, 221.
Drumnakill, Co. Antrim	Souterrain		Iron slag	Evans 1945, 26.
Drumnakill, Co. Antrim	Sand hill site		Slag	Evans 1945, 26.
Dún Eoghanachta, Inis Mor, Co. Galway	Stone fort		Iron slag	Cotter 1995:0117.

Site	Site type	Metalworking features	Artefacts	Reference
Dunbell, Co. Kilkenny	Rath	Furnace (ironworking?)		Cassidy 1991, 19.
Dunmisk, Co. Tyrone	Burial and settlement		Slag	Ivens 1989, 55.
Dunnyneill, Co. Down	Island trading post		Furnace bottoms	McCormick and Macdonald 2004, 8; McCormick & Macdonald 2010, 53.
Dunsilly, Co. Antrim	Rath		Furnace bottom	McNeill 1991-92, 105.
Faughart, Co. Louth	Rath/cemetery		Blooms?, slag	Buckley and Conway 2010, 51-52.
Feltrim Hill, Co. Dublin	Cashel		Iron slag	Hartnett & Eogan 1964, 27.
Galgorm, Co. Antrim	Souterrain		Iron slag	Evans 1946, 82-83.
Gallen Priory, Co. Offaly	Ecclesiastical		Slag; 'ore crushing basin'	Kendrick 1939, 5.
Garranes, Co. Cork	Rath		Iron slag; furnace bottoms	Ó Ríordáin 1942a, 105-7; Scott 1991, 162.
Garryduff, Co. Cork	Rath	Furnaces	Furnace bottoms; tuyères, ore, slag	O'Kelly 1963, 99-103.
Glebe, Co. Dublin	Rath	Possible smithing hearth	Iron slag, possible hammerscale	Seaver 2005a, 60.
Glenbann, Co. Mayo			Iron slag – date uncertain	Grant 1993:0175.
Gragan West, Co. Clare	Mound		Iron slag – date uncertain	Cotter 1988:0004.
Grange, Co. Limerick	Rath		Iron slag	Ó Ríordain 1949b, 133.
Hardwood II, Co. Meath	Industrial site	Charcoal production pits	Bowl furnace (C033) (possible)	Murphy 2002:1465; Murphy 2008, 7; Carlin 2008, 88.
Harristown, Co. Louth	Rath?		Iron slag	Murphy 1994:0181.
Inch/Bellyrennan, Co. Down	Rath		Iron slag	MacManus 1997:0074
Iniscealtra, Co. Clare	Ecclesiastical	Iron reduction pits		de Paor 1970:0006
Iniskea North, Co. Mayo	Ecclesiastical?		Iron slag	Scott 1991, 167.
Island McHugh, Co. Tyrone	Crannog		Iron slag	Davies 1950, 44.
Johnstown I, Co. Meath	Settlement/ cemetery	Ironworking areas, furnaces, smiting hearths	Iron slag; artefacts made on site	Clarke & Carlin 2008, 73-75; Photos-Jones 2008a
Keeloguesbeg, Co. Galway	Ecclesiastical?	Bowl furnace	Iron slag	Tierney 2001:0519.
Kells, Townpark, Co. Meath	Ecclesiastical		Slag; furnace bottom?	Byrne 1987:0041; 1988:0057.
Kilgobbin, Stepaside, Co. Dublin	Ecclesiastical		Iron slag	Larsson 2004:0645.
Kilkieran, Co. Kilkenny	Ecclesiastical		Iron slag	Hurley 1988b, 131.
Kill St Lawrence, Co. Waterford	Ecclesiastical		Slag	O'Connell 2004, 49.
Killanully, Co. Cork	Rath		Iron slag, tuyère, iron ore	Mount 1995, 138-40, 146.
Killickaweeney (I), Co. Meath	Enclosure	Two ironworking areas, furnaces and smithing hearths.	Smelting/smithing slags, hammerscale, tuyères, unfinished iron object	Walsh 2008, 40-44; Photos-Jones 2008b.
Killoran, Co. Tipperary	Ecclesiastical	Ironworking area	Furnace bottoms; slag	Stevens 1998:0615.
Kilpatrick, Corbetstown, Co. Meath	Ecclesiastical	Forging area, furnaces	Tuyères, slag	Swan 1994-95, 8-11; Scott 1991, 158-63.
Kiltenan South, Co. Limerick	Isolated metal-working site	Bowl furnace	Slag	Dennehy 2007, 291.
Kiltera,	Ecclesiastical?	Possible furnace	Slag, anvil,	Macalister 1935, 5.

Site	Site type	Metalworking features	Artefacts	Reference
Co. Kilkenny				
Kiltiernan, Co. Galway	Ecclesiastical		Slag (unstratified)	Waddell & Clyne 1995, 180.
Knockea, Co. Limerick	Cemetery?		Iron slag	O'Kelly 1967, 93.
Knowth, Co. Meath	Enclosed settlement	Furnaces	Slag	Eogan 1977, 73-74; Scott 1991, 161.
Labbamolaga Middle, Co. Cork	Ecclesiastical		Iron slag	Cleary 1995:0035; Cleary 2000, 37-41.
Lahard, Co. Kerry	Rath		Iron slag	Connolly 1994:0127.
Larrybane, Co Antrim	Promontory fort		Iron slag	Childe 1936, 192
Leacanabuaile, Co. Kerry	Cashel		Iron slag	Ó Ríordáin & Foy 1941, 93
Liathmore, Co. Tipperary	Ecclesiastical		Iron slag	Leask & Macalister 1946, 1-14.
Lislackagh, Co. Mayo	Rath	Iron-smelting pit furnace	Furnace bottoms; smelted, but un-forged, iron.	Walsh 1992:0146; Walsh 1995, 8.
Lisleagh II, Co. Cork	Rath	Ironworking area, bowl furnace	Iron slag (800kg)	Monk 1991:0026: Scott 1991, 160-63.
Lisnagade (2), Co. Down	Rath		Slag	Proudfoot 1961, 106.
Lisnagun, Co. Cork	Rath		Iron slag	O'Sullivan *et al*. 1998, 54.
Lissanoure, Co. Antrim	Souterrrain		Iron slag	Evans 1946, 83.
Lissue, Co. Antrim	Rath		Iron slag	Bersu 1947, 50.
Lough Faughan, Co Down	Crannog		Bog ore, iron slag and iron blooms	Collins 1955, 75.
Lough Island Reevy, Co. Down	Crannog		Iron slag	Gaffikin & Davies 1938, 202.
Lusk, Co. Dublin	Enclosure		Small fragments of iron-working waste	Giacometti 2006, 37.
Maghera, Co. Down	Ecclesiastical		Ironworking debris, slag, tuyeres (context not stated)	Hamlin 2008, 308; Lynn 1984-6:0086.
Marlinstown, Co. Westmeath	Rath	Furnace (ironworking?)	Iron slag	Keeley 1991:0126.
Meadowbank Rath, Jordanstown, Co. Antrim	Raised rath		Iron slag; tuyère	Halpin & Crothers 1995:0007.
Moore Cemetery, Loclackagh, Co. Roscommon	Souterrain		Iron slag	Lavelle 1994:0202.
Movilla, Co. Down	Ecclesiastical		Iron slag	Yates 1983, 62.
Moylederg, Co. Donegal	Crannog		Iron slag	Davies 1946a, 98.
Moyvalley (2), Co. Meath	Occupation		Slag	Carlin 2008, 88.
Mullaghbane, Co. Tyrone	Rath		Iron slag (from bog ore)	Harper 1972a, 43.
Nendrum, Co. Down (Watermill)	Ecclesiastical		Iron slag; tuyère	Bourke 2007, 407
Nendrum, Co. Down	Ecclesiastical		Iron slag; ironstone nodules	Bourke 2007, 407; Scott 1991, 154; Lawlor 1925, 136.
Newcastle (2), Co Meath	Industrial site	Bowl furnace	Iron slag; furnace bottoms	O'Hara 2002:1499; O'Hara 2008; Photos-Jones 2008d; Carlin 2008, 88
Newtown (1), Co. Westmeath	Burnt mound	Tapping pit for shaft furnace? (date unclear)		Stevens 2004:1768.
Newtownlow, Co. Westmeath	Crannog		Iron slag	Scott 1991, 223.
Ninch, Co. Meath	Enclosures		Iron slag	McConway 2002, 18.
Oldcourt, Co. Cork	Rath		Iron ore; iron slag	Murphy & Ó Cuileanáin 1961, 90.

Site	Site type	Metalworking features	Artefacts	Reference
Parknahown, C. Laois	Enclosure		Iron slag and tools associated with metalworking "chisels, awls, punches, needles and wedges"	O'Neill 2010, 251
Peter Street, Waterford	Urban – mid-12th century	Possible furnace	Iron slag; hammerscale	Scully & McCutcheon 1997, 104.
Petitswood, Co. Westmeath	Rath?	Bowl furnace (date uncertain)		Channing 1992:0179.
Platin, Co. Meath	Occupation site		Iron slag	Lynch 2000:0774; Lynch 2001:1022
Poulacapple, Co. Antrim	Rath		Iron slag	Reynolds 1972:0030.
Rathgureen, Co. Galway	Rath	Ironworking furnace	Iron slag	Comber 2002, 153, 170.
Rathmullen, Co. Down	Raised rath		Iron slag (possible)	Scott 1991, 222.
Ratoath, C. Meath.	Enclosure, cemetery, field systems		Iron smithing slag	Wallace 2010, 301, 303, 304
Reask, Co. Kerry	Ecclesiastical	Smelting and smithing furnace	Iron slag	Fanning 1981, 105-10; Scott 1981, 168-70.
Rinnaraw, Co. Donegal	Cashel	Pit, possible lean –to structure	Iron slag, furnace bottom, tuyère?	Comber 2006, 103.
Rosepark, Balrothery, Co. Dublin	Enclosures		Iron slag	Carroll 2008, 98
Rossan (4), Co. Meath	Hearth	Smithing hearth	Iron slag	Carlin 2008, 88.
Shallon 1, Co. Meath	Isolated metal-working site	Furnace and pit A.D. 240-540 (2Σ)		Russell 2001:1052.
Shane's Castle, Co. Antrim	Rath		Iron slag	Warhurst 1971, 63.
Shaneen Park, Co. Antrim	Rath		Iron slag	Scott 1991, 221
Simonstown, Co. Meath	Rath	Smelting activity		Kelly 1975:0033.
Skellig Michael, Co. Kerry	Ecclesiastical		Slag	Scott 1991, 222.
Sluggary, Co. Limerick	Rath (bivallate)		Furnace bottoms	Shee-Twohig 2000, 12.
Sroove, Co. Sligo	Crannog	Possible furnace	Slag	Fredengren 2002, 237.
Stranure, Co. Offaly	Ecclesiastical		Iron slag; furnace bottoms	Delany 2001:1104.
Tallaght, Co. Dublin	Ecclesiastical		Iron slag	O'Brien 1990:0043.
Terryhoogan, Co. Armagh	House site		Iron slag	McSparron 2007, 121.
Towlaght, Co. Meath	Hearth, pits	Furnace		Carlin 2008, 88.
Tullylish, Co. Down	Ecclesiastical	Hearth, furnaces?	Tuyères (possible); slag	Ivens 1987, 72, 76, 104-6.
Turnarobert, Co. Antrim	Souterrain		Furnace bottom	Williams 1991:0011.
Twomileborris (A), Co. Tipperary	Rath	Furnace, smithing hearth		Ó Droma 2008, 54
Twomileborris (B), Co. Tipperary	Plectrum-shaped enclosure		Ceramic crucible; ironworking residues.	Ó Droma 2008, 51
Urney, Co. Tyrone	Rath		Slag	Scott 1971:0034.
Whiterath, Co. Louth	Souterrain		Iron slag	Ó Drisceoil 2000:0721.
Woodstown, Co. Waterford	Viking settlement		Furnace bottom; slag, tuyère	Russell 2003:1915; O'Brien & Russell 2005, 119-22.

Table 7.2: Excavated Non-ferrous Metalworking Evidence

Site	Site type	Metalworking features	Artefacts	Reference

Site	Site type	Metalworking features	Artefacts	Reference
Ardcloon, Co. Mayo	Rath	Hearth/furnace?	Lead ore	Rynne 1956, 208.
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	Workshop area and hearths	Slag, ingot moulds, clay moulds, crucibles, tuyères, scrap bronze, motif pieces	Gaskell-Brown & Harper 1984, 119, 124-51.
Armagh: English Street Co. Armagh	Ecclesiastical		Crucible	Crothers 1999, 63; 67.
Armagh: Scotch Street, Co. Armagh	Ecclesiastical		Crucible, copper wire	Lynn 1988, 82. Lynn & McDowell 1988, 60.
Ballinderry (II), Co. Offaly	Crannog		Crucibles, clay moulds, stone ingot, motif piece	Hencken 1942, 50-51, 65-66.
Ballycatteen, Co. Cork	Rath		Crucibles	Ó Ríordáin & Hartnett 1943, 35.
Ballyvourney, Co. Cork	House site/ ecclesiastical		Crucible	O'Kelly 1952, 27.
Beal Boru, Co. Clare	Earthwork		Motif piece	O'Kelly 1962, 8-9
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ cemetery		Slag	Conway 1999, 39.
Carraig Aille (II), Co. Limerick	Cashel		Crucibles	Ó Ríordáin 1949a, 91-92
Castle Screen (2), Co. Down.	Rath		Crucibles	Dickinson & Waterman 1959, 75-76.
Cathair Fionnúrach, Co. Galway	Cashel	Possible anvil stone, furnace pit (not stated what metal)	Crucible	Gibbons 1994:0116; Gibbons 1997:0228.
Cathedral Hill, Downpatrick, Co. Down	Ecclesiastical		Mould and crucible fragments, bronze ingots, molten lead splashed	Ryan 1988, 43
Cavanapole, Co. Armagh	Rath		Crucible, tuyère	Crothers 1996:0015
Cherryhound, Co. Dublin	Industrial		Crucibles, fragments of copper and copper alloy	McGowan 2004:0483.
Clea Lakes, Co. Down	Crannog		Two crucible fragments	Collins & Proudfoot 1959, 86.
Clogher, Co. Tyrone	Rath within earlier hill-fort		Crucibles, gold rubbing stone, lead pin, unfinished bronze brooch	Warner 1973, 10; Warner 1979, 37; Youngs 1990, 186-87, 195, 198.
Clonfad, Co. Westmeath	Ecclesiastical		Non–ferrous coating of iron bells, crucibles, stone and clay moulds	Stevens 2006, 10.
Clonmacnoise, New Graveyard, Co. Offaly	Ecclesiastical		Crucibles, slag, moulds, tuyères, bronze off-cuts including decorated scrap, stone ingot moulds, motif pieces.	King 2009, 341-43; King 1990:097; 1992:157 1993:0187; 1994:0197; 1995:0240; 1996:0324; 1997:0448; 1998:0548
Clonmacnoise, National School, Co. Offaly	Ecclesiastical		Crucible, clay mould, copper alloy ingot, gold scarp	Ó Floinn & King 1998, 123-24.
Cooltubbrid, Co. Waterford	Industrial	Furnace/hearth	Slag with copper particles	Tierney 2008, 108.
Coonagh West, Co. Limerick	Rath		Crucible fragments.	Taylor 2007, 77
Corranneary, Co. Cavan	Crannog		Five crucibles; two mould fragments	Davies 1942, 27-28.
Dalkey Island, Co. Dublin	Promontory fort.		Crucibles (residues of copper and tin), clag from copper smelting	Liversage 1968, 91, 186.
Dooey, Co. Donegal	Unenclosed sand hill site		Crucibles, moulds, motif piece	Ó Ríordáin & Rynne 1961, 61.
Dublin: Christchurch Place, Dublin	Urban		Crucibles	Ó Ríordáin 1974:0014.

Site	Site type	Metalworking features	Artefacts	Reference
Dublin: High Street & Christchurch Place.	Urban		Crucibles, heating trays, moulds, unfinished bronze pins.	Anon 1973, 14-15. Fanning 1994, 114-23. Ó Riordain 1971:0016; 1974:0014; 1975:0015.
Dunmisk, Co. Tyrone	Cemetery	Metal working hearths and furnaces	Crucibles, moulds, tuyères, slag	Ivens 1989, 28-36, 54-55.
Dunnyneill, Co. Down	Island trading post		Crucible	McCormick & Macdonald 2004, 8.
Dunsilly, Co. Antrim	Rath		Crucibles	McNeill 1991-2, 104.
Garranes, Co. Cork	Rath	Workshop debris area	Unfinished brooch and pin, lumps of tin, stone ingot moulds, crucibles, tuyères.	Ó Ríordáin 1942a, 86, 93, 98, 107-09, 121-22, 134-39.
Garryduff, Co. Cork	Rath	Paving and hearth?	Crucibles, 'blow pipe'	O'Kelly 1963, 95-99.
Granagh, Co. Galway	Inauguration site?		Crucible	Rynne 1971:0018.
Gransha, Co. Down	Raised rath		Moulds, motif pieces, crucible	Lynn 1985, 88.
Illaunloghan, Co. Kerry	Ecclesiastical		Motif piece, moulds, tuyère	Marshall & Walsh 2005, 19.
Iniscealtra, Co. Clare	Ecclesiastical	Copper-working area and furnace	Motif-piece	Ryan 1988, 44.
Island McHugh, Co. Tyrone	Crannog		Crucibles	Davies 1950, 44
Kilgobbin, Stepaside, Co. Dublin	Ecclesiastical		Crucibles, slags (type un-stated), clay mould	Bolger 2004:0647
Kilpatrick, Corbetstown, Co. Meath	Ecclesiastical	Non-ferrous- and iron-working in same area	Mould, crucible	Swan 1994-5, 5.
Kiltiernan, Co. Galway	Ecclesiastical	None	Crucibles, slag?	Waddell & Clyne 1995, 195-96.
Knowth, Co. Meath	Enclosed settlement	Metalworking hearth	Crucibles (one for gold work), heating trays	Eogan 1977, 74.
Lagore, Co. Meath	Crannog		Crucibles, motif pieces, clay moulds, stone ingot moulds, tuyères, copper ore.	Hencken 1950 126, 170-73, 240-41; Comber 2004, 137-78.
Letterkeen, Co. Mayo.	Rath		Crucibles	Ó Ríordáin & McDermott 1952, 114.
Lisdoo, Co. Fermanagh	Rath		Crucibles	Brannon 1981-2a, 57.
Lisduggan (2), Co. Cork	Rath		Crucible	Twohig 1990, 19.
Lough Faughan, Co. Down	Crannog		Crucibles (traces of copper and tin), moulds, slag (copper).	Collins 1955, 58-59, 66, 74.
Marlinstown, Co. Westmeath	Rath		Crucibles	Keeley 1990:0113; Keeley 1991:0126
Movilla, Co. Down	Ecclesiastical	Possible furnace base	Crucibles, scrap copper alloy, slag	Ivens 1984, 77-78, 93; Yates 1983, 61.
Moynagh, Co. Meath	Crannog	Two metalworking area and furnace	Crucibles, moulds, slag, motif pieces, tuyère	Bradley 1982-83, 24-28; 1993, 79-80; 1994-95, 160-66; Youngs 1990, 178-84.
Nendrum, Co. Down	Ecclesiastical		Crucibles, ingot, bronze nodules, clay mould, motif pieces	Bourke 2007, 406-11.
Platin, Co. Meath	Occupation site		Crucible and tuyère fragments	Lynch 2000:0774.
Raheennamadra, Co. Limerick	Rath		Crucible	Stenberger 1966, 49
Rathgureen, Co. Galway	Rath (bivallate)	Ironworking furnace	Crucibles, tuyère?	Comber 2002, 171.
Rathinaun, Co. Sligo	Crannog		Crucibles and mould fragments	Comber 2008, 131.

Site	Site type	Metalworking features	Artefacts	Reference
Rathmullen, Co. Down	Raised rath		Crucible fragment	Lynn 1981-2, 145.
Ratoath, Co. Meath	Settlement/ Cemetery		Slag, crucibles, lead ingot	Wallace 2004:1324
Reask, Co. Kerry	Ecclesiastical	Metalworking areas, furnaces	Crucibles, slag, furnace bottoms, tuyères	Fanning 1981, 105-10, 117-20.
Roestown, Co. Meath	Enclosures		Crucible fragments, ingot moulds, and bone trial pieces	O'Hara 2007, 149.
Sluggary, Co. Limerick	Rath (bivallate)		Moulds	Shee-Twohig 1974:0029.
Tullylish, Co. Down	Ecclesiastical	Hearth, furnaces?	Crucibles, moulds, tuyères	Ivens 1987, 72, 76, 104-06.
Woodstown, Co. Waterford	Viking Settlement	Hearths/furnaces	Furnace bottoms, tuyère, crucibles, slag, lead/silver ingots.	Russell 2003:1915; O'Brien & Russell 2005, 119-22.

Table 7.3: Excavated Evidence for Vitreous Material Working

Site	Site type	Evidence	Reference
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	Enamel and glass rods	Gaskell-Brown & Harper 1984, 122, 135.
Armagh: English Street, Co. Armagh	Ecclesiastical	Glass rods	Crothers, 1999, 63.
Armagh: Scotch Street, Co. Armagh	Ecclesiastical	Glass bead manufacturing waste	Lynn & McDowell 1988, 60.
Augherskea, Co. Meath	Settlement cemetery	Evidence not stated	Baker 2010, 18
Ballycatteen, Co. Cork	Rath	Blue glass rod, scrap of Roman or sub-Roman glass	Ó Ríordáin & Hartnett 1943, 26. Burke 1994, 196.
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ cemetery	Fragment of a blue glass rod	Conway 1999, 39.
Cahercommaun, Co. Clare	Cashel	Fragment of bangle with traces of two perforations – possibly broken during manufacture	Hencken 1938, 39.
Carraig Aille (II), Co. Clare	Cashel	Flattened tear-drop shaped piece of glass, glass vessel fragments – scrap?	Ó Ríordáin 1949a, 91, 102.
Dunmisk, Co. Tyrone	Settlement/ cemetery	A failed glass stud, failed glass beads, monochrome glass rods, reticella rods, scrap glass, glass making crucible fragments for making opaque yellow glass.	Henderson 1988, 115-17, 122.
Garranes, Co. Cork	Rath	Millefiori glass rod, millefiroi glass attached to bronze tube, Several small pieces of glass vessel – scrap? Lumps of enamel that had cooled after being molten.	Ó Ríordáin 1942a, 118-19, 121.
Garryduff, Co. Cork	Rath	Blob of blue glass. Glass vessel fragment – scrap?	O'Kelly 1963, 77.
Knowth, Co. Meath	Settlement site	Enamel working crucibles?	Eogan 1977, 74.
Lagore, Co. Meath	Crannog	Moulds for glass studs, blue glass rods, millefiori glass rod, scrap glass? Roman or post Roman.	Hencken 1950, 127-30, 132
Lough Faughan, Co. Down	Crannog	Glass vessel figment – scrap?	Collins 1955, 63.
Movilla, Co. Down	Ecclesiastical	Glass rods, glass globules	Ivens 1984b, 100.
Moynagh, Co. Meath	Crannog	Lump of yellow enamel	Bradley 1987:0039.

Table 7.4: Excavated Early Medieval Stone- and Amber-Working Evidence

Site	Site type	Evidence	Reference
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	Unfinished lignite bracelets, lignite central waste pieces	Gaskell-Brown & Harper 1984, 136-7.
Armagh: English Street, Co. Armagh	Ecclesiastical	Unfinished lignite objects and off-cuts	Crothers 1999, 63, 66.
Armagh: Scotch Street, Co Armagh	Ecclesiastical	Hundreds of fragments of lignite from armlet manufacture. Hundreds of chips of amber	Lynn & McDowell 1988, 60.
Armoy, Co. Antrim	Ecclesiastical	Lignite working debris, broken bracelets and cores, rough-outs	Nelis 2005:0007.
Ballybrolly, Co. Armagh	Enclosure	Lignite central waste pieces	Lynn 1983a, 50.
Ballyegan, Co. Kerry	Cashel	Unfinished quern stone	Byrne 1991, 28.
Balriggan (Fort Hill), Co. Louth	Enclosure – ringfort?	Three spindle whorls and two loom weights	Delaney 2010, 99.
Cahercommaun, Co. Clare	Cashel	Lignite central waste pieces; incompletely perforated stone spindle whorls	Hencken 1938, 41-44.
Carraig Aille (II), Co. Limerick	Cashel	Unfinished spindle whorls.	Ó Ríordáin 1949a, 86.
Castlescreen (II), Co. Down	Rath/motte	Unfinished spindle whorls.	Dickinson & Waterman 1959, 80.
Cush, Co. Limerick	Raths	Unfinished spindle whorl	Ó Ríordáin 1940, 158.
Dublin: Fishamble Street, Co. Dublin	Urban	Amber workshop, un-worked nodules of lignite.	Wallace 1987a, 215-16.
Feltrim Hill, Co. Dublin	Cashel	Lignite central waste pieces	Hartnett & Eogan 1964, 28-29
Garryduff, Co. Cork	Rath	Unfinished spindle whorls	O'Kelly 1963, 89.
Inishkea North, Co. Mayo	Ecclesiastical	Spindle whorls broken during drilling. Chlorite waste. Quern stone fragments.	Henry 1951b, 75-76. Henry 1952, 172.
Lagore, Co. Meath.	Crannog	Unfinished quern stone	Hencken 1950, 174.
Lislear, Co. Tyrone	Rath	Unfinished lignite bracelet fragment	Simpson 1987:0046.
Moynagh, Co. Meath	Crannog	Unfinished quern stones	Bradley 1982-3, 28; Bradley 1994-5, 160, 165.
Oldcourt, Co. Cork	Rath	Jet core	Murphy & Ó Cuileanáin 1961, 84.
Reask, Co. Kerry	Ecclesiastical	Spindle whorl discarded before use.	Fanning 1981, 125.
Tullylish, Co. Down	Ecclesiastical	Unfinished lignite rings	Ivens 1987, 107-08; Ivens 1988b, 55-56.

Table 7.5: Excavated Early Medieval Craft-Working Evidence from Leather, Antler, Bone and Wood:

Site name	Site type	Craft type	Evidence	Reference
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	Antler working	Sawn antler waste	McCormick & Murray 2007, 196.
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ cemetery	Antler-working	Antler tines and burrs	Conway 1999, 39.
Cahercommaun, Co. Clare	Cashel	Antler working	Antler off-cuts	Hencken 1938, 63
Carraig Aille (II), Lough Gur Co. Limerick	Cashel	Bone working	5 unfinished bone pins	Ó Ríordáin 1949a, 83
Clonfad, Co. Westmeath	Ecclesiastical	Bone/antler working	Bone off-cuts	Stevens 2006, 11; Stevens 2010.
Clonmacnoise,	Ecclesiastical	Antler working	Antler off-cuts	McCormick & Murray 2007,

Site name	Site type	Craft type	Evidence	Reference
Co. Offaly				217.
Cormac's Chapel, Cashel, Co. Tipperary	Ecclesiastical	Antler working	Traces of antler-working	Hodkinson 1994, 171.
Deer Park Farms, Co. Antrim	Raised rath	Antler working	Antler off-cuts	McCormick & Murray 2007, 221.
Deer Park Farms, Co. Antrim	Raised rath	Leatherworking	Wooden lasts, leather shoe fragments	Neil 2001, 14-15.
Derrynaflan, Co. Tipperary	Ecclesiastical	Antler working	Cut antler	Ó Floinn 1986:0070.
Dublin: Essex Street/ Lower Exchange St. Co. Dublin	Urban	Ivory working	Butchered walrus-skull	Simpson 1997:0124.
Dublin: Fishamble Street. Co. Dublin	Urban	Ivory working	Walrus-skull fragment	Wallace 1987a, 216
Dublin: High Street/ Christchurch Place, Co. Dublin	Urban	Bone/antler working	Antler-comb blanks and waste	Anon 1973, 15; Ó Ríordáin 1974:0014.
Dublin: High Street, Co. Dublin	Urban	Leatherworking	Leather waste layer (1m thick)	Anon. 1973, 16.
Dún Eoghanachta, Inis Mór, Co. Galway	Cashel	Antler working	Antler waste fragments	McCormick & Murray 2007, 237.
Illaunloughan, Co. Kerry	Ecclesiastical	Antler working	Antler waste	McCormick & Murray 2007, 239.
Inishcealtra, Co. Clare	Ecclesiastical	Bone/antler working	Comb blanks	De Paor 1971:0010
Killyliss, Co. Fermanagh	Rath	Bone working	Sawn bone waste	Ivens 1984a, 29.
Kilpatrick, Co. Westmeath	Eccleciastical	Antler working?	Discarded portions of antler	Swan 1994-5, 6.
Lagore, Co. Meath	Crannog	Woodworking, leather working	Cone-shaped lathe turning wasters, rough out bowl, leather scraps add shoe last	Hencken 1950, 157, 165, 167, 181.
Lissue, Co. Antrim	Rath	Woodworking	Waste fragments of oak and birch from wood-turning	Bersu 1947, 54-55.
Lough Faughan, Co. Down	Crannog	Antler working	Antler waste	McCormick & Murray 2007, 251.
Moyne, Co. Mayo	Ecclesiastical	Antler working and horn working	Sawn antler off cuts and chopped cattle horn-core	McCormick & Murray 2007, 261.
Rathgureen, Co. Galway	Rath	Antler working	Antler off-cuts	McCormick & Murray 2007, 265.
Roestown, Co. Meath	Enclosures	Bone/antler working	Comb blanks	O'Hara 2007, 148.
Seacash, Co. Antrim	Rath	Leatherworking	Leather scrap	Lynn 1978b, 67, 69.
Waterford: Insula North, Co. Waterford	Urban: late-12th century	Leather working	Dump of leather scraps and off-cuts	McCutcheon & Hurley 1997, 161.
Waterford: Peter's Street, Co. Waterford	Urban: mid-12th century	Antler working	Large deposits of antler waste	McCormick 1997, 837-38; Hurley 1997, 651-53.

Table 7.6: Excavated Evidence of Textile-Working

Site name	Site type	Craft type	Evidence	Reference
Ballinderry (I), Co. Westmeath	Crannog	Textile working	Stone whorl? (1)	Hencken 1936, 146-47.
Ballinderry (II), Co. Offaly	Crannog	Textile working	Bone (6) and stone (4) whorls	Hencken 1942, 55, 64.
Ballybrolly,	Rath	Textile working	Stone whorl (1)	Lynn 1983a, 62-3.

Site name	Site type	Craft type	Evidence	Reference
Co. Armagh				
Ballycatteen, Co. Cork	Rath	Textile working	Stone whorl (1)	Ó Ríordáin & Hartnett 1943, 31.
Ballyfounder, Co. Down	Rath	Textile working	Stone whorls	Waterman 1958b, 49.
Ballymacash, Co. Antrim	Rath	Textile working	Stone whorl (1)	Jope & Ivens 1998, 120.
Ballyvourney, *St Gobnet's House*, Co. Cork	House site	Textile working	Spindle whorl (1)	O'Kelly 1952, 31.
Ballywillwill, Co. Down	Rath	Textile working	Stone whorl (1)	Waterman & Collins 1952, 81.
Balriggan, Co. Louth	Enclosure	Textile working	Whorl	Delaney 2003:1226; Delaney 2010
Bowling Green, Co. Tipperary.	Rath?	Textile working	Stone whorl (1)	Fanning 1970, 14-15.
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ cemetery	Textile-working	Spindle-whorls, bone pin-beaters and iron shears	Conway 1999, 39.
Cahercommaun, Co. Clare	Cashel	Textile working	Whorls of stone, antler and bone (53)	Hencken 1938, 43-44
Caherlehillan, Co. Kerry	Ecclesiastical	Textile working	Spindle whorls	Sheehan 1993:0118; Sheehan 2009
Carn, Co. Fermanagh	Cashel	Textile working	Bone whorl (1)	Brannon 1981-82, 63.
Carraig Aille (I), Lough Gur td., Co. Limerick	Cashel	Textile working	Bone whorls (12), stone whorls (10);	Ó Ríordáin 1949a, 83, 86, 94, 99-100.
Carraig Aille (II), Lough Gur td., Co. Limerick	Cashel	Textile working	Bone whorls (12), stone whorls (14)	Ó Ríordáin 1949a, 83
Castleskreen (I), Co. Down	Rath	Textile working	Stone whorl (1)	Dickinson & Waterman, 1960, 72.
Castleskreen (II), Co. Down	Rath/motte	Textile working	Stone spindle whorls (Phase 2) (5 – three unfinished)	Dickinson & Waterman 1959, 79-80.
Church Island, Co. Kerry	Ecclesiastical	Textile working	Stone whorl (1)	O'Kelly 1958, 113.
Clea Lakes, Co. Down	Crannog	Textile working	Stone whorls (2)	Collins & Proudfoot 1959, 98.
Clonmacnoise, New Graveyard, Co. Offaly	Ecclesiastical	Textile working	Spindle whorls	King 2009, 341.
Coarhabeg, Co. Kerry	Clochán	Textile working	Stone whorls	Hayden 1994:0119.
Cush, Co. Limerick	Raths	Textile working	Stone whorls (4), loom weights (2)	Ó Ríordáin 1940, 158.
Dressogagh, Co. Armagh	Rath	Textile working	Bone whorl (1)	Collins 1966, 125-26.
Drumaroad, *White Fort*, Co. Down	Rath	Textile working	Stone whorl (1)	Waterman 1956a, 86.
Dublin: High Street/ Winetavern Street, Co. Dublin	Urban	Textile working	Spindle whorls	Ó Ríordáin 1970:0017.
Dublin: Christchurch Place, Co. Dublin	Urban	Textile working	Weaving tablets and bone spindle whorls	Ó Ríordáin 1974:0014.
Dunsilly, Co. Antrim	Rath	Textile working	Stone whorls (2)	McNeill 1991, 105.
Feltrim Hill, Co. Dublin	Rath?	Textile working	Stone whorl 1	Hartnett & Eogan 1964, 32.
Frenchgrove, Co. Mayo	Crannog	Textile working	Whorl	McDermott 1998:0488.
Garranes, Co. Cork	Rath	Textile working	Stone whorls (3) and loom weights? (3)	Ó Ríordáin 1942a, 111.
Garryduff, Co. Cork	Rath	Textile working	Whorls (27 stone and 1 bone) including	O'Kelly 1963, 89-90.

Site name	Site type	Craft type	Evidence	Reference
			unfinished stone whorls	
Grange, Co. Limerick	Hut site?	Textile working	Whorl (1)	Ó Ríordáin 1949b, 133.
Grannagh, Co. Galway	Inauguration site?	Textile working	Bone whorl	Rynne 1971:0018.
Gransha, Co. Down	Raised rath	Textile working	Whorls (number unspecified)	Lynn 1985, 88.
Illaunloughan, Co. Kerry	Ecclesiastical	Textile working	Stone whorls (3)	Marshall & Walsh 2005, 193.
Iniskea North, Co. Mayo	Settlement	Textile working	Bone (1) and stone whorls (1)	Henry 1945, 136; 139.
Kells, Co. Meath	Ecclesiastical	Textile working	Stone whorl	Byrne 1988:0057.
Killederdadrum, Co. Tipperary	Ecclesiastical	Textile working	Stone whorls (2)	Manning 1984, 258.
Killickaweeny, Co. Meath	Enclosure	Textile working	Antler (1) and stone (1) whorls	Walsh 2008, 44.
Knowth (M), Co. Meath	Secular cemetery	Textile working	Whorl – material unstated (1)	Stout & Stout 2008, 65, 111.
Knowth, Co. Meath	Settlement	Textile working	Spindle-whorls	Eogan 1991, 120.
Lagore, Co. Meath	Crannog	Textile working	Stone (8) and bone whorls (20)	Hencken 1950, 175, 194.
Leacanabuaile, Co. Kerry	Cashel	Textile working	Stone whorl (1), loom weight (1)	Ó Ríordáin & Foy 1941, 93
Lisduggan (I), Co. Cork	Rath	Textile working	Stone whorls	Twohig 1990, 17.
Lismahon, Co. Down	Rath/motte	Textile working	Stone whorls.	Waterman 1959c, 164.
Lissachigel, Co. Louth	Rath	Textile working	Stone whorl (1)	Davies 1939, 225.
Lough Faughan, Co. Down	Crannog	Textile working	Stone whorls (4)	Collins 1955, 68.
Millockstown, Co. Louth	Settlement cemetery	Textile working	Stone whorl (1)	Manning 1986, 160.
Moynagh Lough, Co. Meath	Crannog	Textile working	Spindle whorls	Bradley 1994-95, 162.
Narraghmore, Co. Kildare	Rath?	Textile working	Stone whorl (1)	Fanning 1972, 175-6.
Nendrum, Co. Down	Ecclesiastical	Textile working	Whorls	Lawlor 1925, 140.
Oughtymore, Co. Derry	Sand hill site	Textile working	Antler spindle whorl (1)	Mallory & Woodman 1984, 53-54.
Rathbeg, Co. Antrim	Rath	Textile working	Stone whorl? (1)	Warhurst 1969, 96-97.
Rathmullen, Co. Down	Raised rath	Textile working	Stone spindle whorls (8) and possible loom weights (2)	Lynn 1981-2, 132-34.
Ratoath, Co. Meath	Settlement/ cemetery	Textile working	Spindle whorls, rubbing stones	Wallace 2004:1324; Wallace 2010
Raystown, Co. Meath	Settlement/ cemetery	Textile working	Bone spindle whorl	Seaver 2004:1334. Seaver 2010
Seacash, Co. Antrim	Rath	Textile working	Stone whorl (1)	Lynn 1978b, 67, 69.
Shaneen Park, Co. Antrim	Rath	Textile working	Stone loom weight (1)	Proudfoot 1958, 30-31.
Smithstown, Co. Meath	Souterrains	Textile working	Bone whorl	Gowen 1998:0055.
Spittle Ballee, Co. Down.	Rath	Textile working	Stone whorl (1)	Waterman 1958a, 63.
The Spectacles, Lough Gur, Co. Limerick	Isolated huts	Textile working	Stone spindle whorls (3).	Ó Ríordáin 1949a, 106.
Uisneach, Co. Westmeath	Rath	Textile working	Stone whorl (1)	Macalister & Praeger 1928, 117.
Woodstown, Co. Waterford	Viking settlement	Textile working	Fishing weight/spindle whorl	McNamara 2005, 126-27.

Table 7.7: Souterrain Ware Found in Ireland (Core Area)

Townland/Site Name	Site Type	Comments	Reference
Aghavea, Co. Fermanagh	Ecclesiastical	Early Christian coarse domestic pottery	Ó Baoill 2000:0352; Anon. 2004, 4.
Aird, Co. Antrim	Souterrain	Three sherds of souterrain ware	Collins *et al*. 1964, 121-23.
Antiville, Co. Antrim	Habitation Site	Sherds of souterrain ware	Waterman 1971, 71-72. .
Antrim (Civic Offices), Co. Antrim	Rath	Sherds of souterrain ware	MacManus 2003:0001.
Ardee (28 Castle Street), Co. Louth	Near medieval towerhouse	Sherd of 'early medieval pottery'	O'Carroll 2002:1284
Armagh: Abbey Street , Co. Armagh	Ecclesiastical	Sherds of souterrain ware	Lynn 1977-79:0009.
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	Six sherds of souterrain ware	Gaskell-Brown & Harper 1984, 143-44.
Armagh: English St./Abbey Street, Co. Armagh	Ecclesiastical	15 sherds of souterrain ware; 28 sherds of misc early Christian and medieval wares	Hurl 2003; Gahan 2003, 110-112.
Armagh: English St./Market Sq., Co. Armagh	Ecclesiastical	Sherds of souterrain ware	Lynn 1990:0006.
Armagh: Market Street, Co. Armagh	Ecclesiastical	Sherds of souterrain ware	Gilmore 1998:008.
Armagh: 16 Scotch Street, Co. Armagh	Ecclesiastical	Sherds of souterrain ware	Lynn 1977-79:0010.
Armagh City: 46-48 Scotch Street, Corporation td. Co. Armagh	Ecclesiastical	Sherds of souterrain ware	McDowell 1980-84:0035; Lynn 1988a, 82.
Armagh: Upper English St., Co. Armagh	Ecclesiastical	30 sherds of souterrain ware	Gahan 1999, 70-73, 78.
Armoy, Glebe, Co. Antrim	Ecclesiastical	Sherds of souterrain ware	Ó Néill 2004:0008.
Aughnamullan, Co. Antrim	Habitation Site?	Sherds of cordoned souterrain ware	McSparron 2000:0021.
Ballintemple, Co. Londonderry	Souterrain	Sherd of souterrain ware	May & Cooper 1939, 88.
Ballintoy: Park Cave, Co. Antrim	Cave Habitation		Jackson 1933, 230-32
Ballintoy: 'Potter's Cave', Co. Antrim	Cave Habitation		Jackson 1934, 104-14. Jackson 1938, 107-22.
Ballyaghagan, *Shaneen Park*, Co. Antrim	Rath	Thousands of sherds of souterrain ware	Evans 1950, 22-23; Proudfoot 1958, 23-28.
Ballybarrack, Co. Louth	Souterrain	Sherd of souterrain ware	Kelly 1977-79:0052 Gosling 1991, 244-46; McCormick & Crone 2000, 560
Ballyboley, Co. Antrim	Souterrain and settlement	Large portions of several souterrain-ware vessels	Lynn 1977-79:0001.
Ballybrolly, Co. Armagh	Enclosure	Five sherds of souterrain ware	Lynn 1983a, 50.
Ballyfounder, Co. Down	Rath	Sherd of souterrain ware	Waterman 1958b, 46-47.
Ballygalley Hill, Co. Antrim	Rath	Sherds of souterrain ware	Trump 1958, 218; Collins 1978, 23.
Ballygalley, Co. Antrim	Souterrain and habitation	Early Christian pottery	Farrimond 2002:0004.

Ballygolan, Co. Antrim	Rath	'Crannog ware'	Bigger 1901, 196
Ballygortgarve, Co. Antrim	Rath	Sherd of souterrain ware	Lynn 1978c, 75-77.
Ballyhamage, Co. Antrim	Enclosure and Souterrain	Sherds of souterrain ware	Crothers 2003:0004.
Ballyhenry I, Co. Antrim	Rath	745 sherds of souterrain ware	Lynn 1983c, 73-75.
Ballyhenry II, Co. Antrim	Rath	201 sherds of souterrain ware	Lynn 1983c, 85
Ballyhill Lower, Co. Antrim	Rath	Sherds of souterrain ware	Williams 1985:0002.
Ballykennedy, Co. Antrim	Rath	17 sherds of souterrain ware	Brannon 1980b, 69.
Ballykennedy, Co. Antrim	Rath	Sherds of souterrain ware	Lawlor 1916, 47-48.
Ballyknock, Co. Armagh	Rath		(Unpublished) Woodman (*Pers. Comm.*)
Ballylessant, *Farrell's Fort*, Co. Down	Rath	Sherds of souterrain ware	Collins 1970:0013.
Ballymacash, Co. Antrim	Rath	Over 3,000 sherds of souterrain ware	Jope 1966, 134; Jope & Ivens 1998, 114-17.
Ballymacpeake Upper, Co. Londonderry	Rath	Quantity of souterrain ware	Warner 1973:0010.
Ballymacrea Lower, Co. Antrim	Sandhills Site	Sherds of souterrain ware	Flanagan 1966, 115-16.
Ballymurphy, Co. Antrim	Rath	Sherds of souterrain ware	Lynn 1977-79:0003.
Ballynarry, Co. Down	Rath	209 sherds of souterrain ware	Davison 1961-62, 62-65.
Ballynoe, Co. Antrim	Enclosure	Over 50 sherds of souterrain ware	Lynn 1980a, 36.
Ballyrea, Co. Armagh	Linear Ditch	Sherds of souterrain ware	Crothers 1992:0004.
Ballyrickardmore, Co. Antrim	Rath with souterrain	Sherds of souterrain ware	Lawlor 1916, 47.
Ballyroney, Co. Down	Motte	Sherds of souterrain ware	Waterman 1955, 99.
Ballyshanaghill, Co. Antrim	Rath	Sherds of souterrain ware	Halpin 1991:0003.
Ballyutoag, Co. Antrim	Upland huts and field systems	229 sherds of souterrain ware	Williams 1984, 40-46.
Ballyvollen, Co. Antrim	Habitation Site?	Sherds of souterrain ware	Williams 1985b, 91-102.
Ballywee, Co. Antrim	Rath with souterrain	Sherds of souterrain ware	Lynn 1988c, 32-35.
Ballywillwill I, Co. Down	Rath	Sherds of bucket-shaped pots	Waterman & Collins 1952, 78-79.
Ballywillwill II, Co. Down	Rath	Sherds of bucket-shaped pots	Waterman & Collins 1952, 78-79.
Balriggan 1, Co. Louth	Settlement/Cemetery	Over 800 sherds of souterrain ware	Delaney 2002:1291, 2002:1295, 2003:1226 Roycroft 2005, 77; Delaney 2010, 98
Belfast: Malone, Co. Antrim	Habitation site	Sherds of souterrain ware	Quinn 1930, 48.
Belfast: Mount Royal, Co. Antrim	Rath	Several dozen sherds of souterrain ware.	Evans 1952, 86
Belfast: Stranmillis, Co. Antrim	Rath (?) destroyed		Woodman (*Pers. Comm.*)
Belfast: Town Parks td. Castle Street, Co. Antrim		Possible piece of souterrain ware	Brannon 1980-84:0007.
Big Glebe, Co. Londonderry	Mound	Sherds of souterrain ware	Bratt & Lynn 1976:0012; Lynn 1988e, 41-44.

Bighouse, Co. Antrim	Hut Site	Sherds of souterrain ware	Evans 1945, 26.
Boghead, Co. Antrim	Souterrain	Sherds of souterrain ware	Lawlor 1916, 40.
British and Seacash, Co. Antrim	Mound	Sherds of souterrain ware	Crothers 1998:0004.
Camus, Co. Londonderry	Series of pits	Sherds of souterrain ware	May & May 1945, 60-62.
Carlingford (Back Lane), Co. Louth	Pit	Sherds of 'early medieval pottery'	Moore 1998:0419
Carn More, Faughart, Co. Louth	Rath and souterrain	Over 200 sherds of souterrain ware	Delaney 2003:1272. Roycroft 2005, 80.
Carnacavill, *Maghera*, Co. Down	Ecclesiastical	Sherds of souterrain ware	Lynn 1980-84:0086.
Carnalbanagh East, Co. Down	Enclosure	Sherds of souterrain ware	Brannon 1979a, 31-33.
Carnmoney, Co. Antrim	Rath	'Quantity of pottery' in stratified contexts	Avery 1970:0001
Carnreagh, Co. Down	Habitation Site	'Several sherds of early Christian pottery'	Large 2003:0445
Carrigrohane, Co. Cork	Ringfort	Sherd of souterrain ware	Moloney 2003:0188.
Carryduff, *Queen's Fort*, Co. Down	Rath	Sherds of souterrain ware	Jope 1966, 154-55. Lynn 1981-82, 169.
Cashel (td.?), Co. Antrim	'Tumulus'		Grainger Coll., Ulster Museum (unpublished)
Castle Skreen I, Co. Down	Rath	Sherds of souterrain ware	Dickinson & Waterman 1960, 71.
Castle Skreen II, Co. Down	Rath	402 sherds of souterrain ware	Dickinson & Waterman 1959, 74-75.
Cavanapole, Co. Armagh	Ditch	Sherd of souterrain ware	Crothers 1996:0015.
Cherryhound, Co. Dublin	Industrial Site	Possible sherd of souterrain ware	McGowan 2004:0483.
Clanrolla, Co. Armagh	Rath		Chart 1940, 61; Waterman 1959c, 165.
Clea Lakes, Co. Down	Crannog	61 sherds of souterrain ware	Collins & Proudfoot 1959, 95.
Cloughorr, Co. Antrim	Souterrain	Ten sherds of souterrain ware	Harper 1972b, 59-61.
Coleraine, Co. Londonderry	?		(Unpublished) Ex Grainger Coll. U.M. Reg. No. K 18. 3943
Coleraine: Cross Lane, Co. Londonderry	?	Sherds of souterrain ware	Brannon 1977-79:0018.
Coleraine: *Mount Sandel*, Co. Londonderry	Mesolithic site	Sherds of souterrain ware	Woodman 1974:0011; Woodman 1976:0015
Coleraine: Stone Row, Co. Londonderry	?	Sherds of souterrain ware	Gahan 1993:0036.
Coney Island, Co. Antrim	Habitation Site	Sherds of souterrain ware	Addyman 1965, 87-89, 98.
Connor (Rectory Field), Co. Antrim	Ecclesiastical Site	Sherds of souterrain ware	Brannon 1986:0002.
Cormeen, Co. Meath	Rath and souterrain	Sherds of souterrain ware	McConway & Halpin 1992:150.
Corrstown, Co. Londonderry	Rath and souterrain	Sherds of souterrain ware	Conway 2002:0387
Craighill, Co. Antrim	House and souterrain	Sherds of souterrain ware	Waterman 1956b, 91.
Craigywarren, Co. Antrim	Crannog	Five sherds of souterrain ware	Coffey 1906, 116.
Crossnacreevy, Co. Down	Rath	Much souterrain ware	Harper 1971:0012; Harper 1973-74, 36-37.
Deer Park Farms, Co. Antrim	Rath	700 sherds of souterrain ware	Lynn & McDowell 1988b, 7.
Demesne,	Bronze Age Burials	Sherds of souterrain ware	Wiggins 2000b, 59-61.

Church Bay, Rathlin Island, Co. Antrim			
Derry, Co. Down	Ecclesiastical Site	Sherds of souterrain ware	Waterman 1967b, 64.
Derryhollagh, Co. Antrim	Crannog	Sherd of souterrain ware	Reeves 1859, 149.
Derrymore, Co. Armagh	Rath	Sherd of souterrain ware	Halpin 2000:0025; Long 2001:0022
Donaghadee Vicinity, Co. Down	?		N.M.I. Reg. No. 1938:9215
Donaghmore A, Co. Louth	Souterrain		Gosling 1991, 244-46
Donegore, Co. Antrim	Souterrain	Sherds of souterrain ware	Lawlor 1916, 41.
Doonmore, Co. Antrim	Hillfort?	Sherds of probable souterrain ware	Childe 1938, 130-32; Armit 2007, 6
Doras, Co. Tyrone	Ecclesiastical	Sherds of souterrain ware	McDowell 1987, 151.
Dowdallshill, Co. Louth	Rectangular Fosse	Sherds of souterrain ware	Channing 1994:0169.
Dowdallshill, Co. Louth	Pit	Sherds of possible souterrain ware	O'Neill 2004:1080.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	Sherds of souterrain ware	Brannon 1986:0019.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	Sherds of souterrain ware	Brannon 1997:0071.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	Sherds of souterrain ware	Halpin 1998:0115.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	Sherds of souterrain ware	Ó Baoill 1992:0034.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	Two sherds of souterrain ware	Ó Baoill 1994:0040.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	Sherds of souterrain ware	Proudfoot 1954, 97-102; Proudfoot 1956, 57-72.
Downview Park West, Co. Antrim	3 Souterrains	209 sherds of souterrain ware	Collins *et al*. 1964, 126-27.
Dressogagh, Co. Antrim	Rath	Sherds of souterrain ware	Collins 1966, 123-24.
Drogheda: Peter Street, Co. Louth	Pre-medieval wall (Pottery Scatter)	Sherds of 'early medieval pottery'	Murphy 1995:0200
Dromiskin, Co. Louth	Souterrain and settlement	Sherds of souterrain ware	Halpin 1988:0045.
Dromore, Co. Down	'Cave' (Souterrain?)		N.M.I. Reg. Nos. WK. 459-533
Dromore, Co. Antrim	Rath	Sherds of souterrain ware	Collins 1968, 64-65.
Drumadonnel, Co. Down	Habitation Site	Sherds of souterrain ware	McSparron 2001, 48.
Drumadoon, Co. Antrim	Rath	Sherds of souterrain ware	McSparron & Williams 2004, 11; McSparron & Williams 2009, A35-A49.
Drumaheglis Marina, Co. Antrim	Ditch	Sherds of 'early medieval pottery'	Anon. 2003:0007
Drumaroad, *White Fort*, Co. Down	House and souterrain within cashel	Sherds of souterrain ware	Waterman 1956a, 83-84.
Drumena, Co. Down	Cashel and souterrain		Berry 1926-27, 46-55
Dunalis, Co. Londonderry	Souterrain		Lindsay 1934-5, 61-70.
Dunbeg,	Hillfort	50 sherds of souterrain ware	Inskeep & Proudfoot 1957,

Co. Down			111-12.
Dundrum Castle, Co. Down	Pre-Castle Occupation	Sherds of souterrain ware	Waterman 1951, 25-26.
Dundrum Site I, Co. Down	Sandhills Habitation	Around 200 sherds of souterrain ware	Collins 1952, 10-12.
Dundrum Site VI, Co. Down	Sandhills Habitation	Sherds of souterrain ware – some cordoned	Collins 1952, 19
Dundrum, Co. Down	?		N.M.I. Reg. No. 1939:703
Dundrum, Site IV, Co. Down	Sandhills Habitation	198 sherds of souterrain ware	Collins 1959a, 11.
Dundrum, Site V, Co. Down	Sandhills Habitation	50 sherds of souterrain ware	Collins 1959a, 11.
Duneight, Co. Down	Earthworks	Sherds of Souterrain Ware	Waterman 1963b, 72-74.
Dunnyneil Island, Co. Down	Island trading post	Large assemblage of cordoned souterrain ware	McCormick & Macdonald 2004, 5-10; McCormick & Macdonald 2010, 53
Dunsilly, Co. Antrim	Rath	420 sherds of souterrain ware in stratified contexts excluding post-medieval ones.	McNeill 1991, 100-04.
Farrandreg, Co. Louth	Souterrain and pits	Sherds of souterrain ware	Bolger 2000:0674
Farrandreg, Co. Louth	Souterrain	19 souterrain ware sherds and remains of souterrain ware vessel	Murphy 1998, 271-75.
Farranfad, *Piper's Fort*, Co. Down	Rath	Sherds of souterrain ware	Waterman 1959b, 83-87.
Finkiltagh, Co. Antrim	Rath	Sherds of souterrain ware	Williams 1973:0003.
Galgorm, Co. Antrim	Souterrain	Sherds of souterrain ware	Evans 1946, 83.
Gartree, *Langford Lodge*, Co. Antrim	Rath	Sherds of souterrain ware	Waterman 1963a, 51-52.
Glengormley, Co. Antrim	Rath	Sherds of souterrain ware	Brannon 1986:0005.
Glenloughan, Co. Down	Rath	Possible souterrain ware	Proudfoot 1961, 106.
Gortcrib, Co. Down	Habitation site	A vessel of 'souterrain ware' and several further sherds of this ware	Warner & Delaney 1970:0014.
Grange of Mallusk, Co. Antrim	Ecclesiastical Site	Sherds of souterrain ware	Crothers 1997, 34-35.
Grangemore, Co. Londonderry	Sandhills	Sherds of souterrain ware	Gormley 2004a, 11-12.
Gransha, Co. Down	Rath	Considerable quantity of souterrain ware	Lynn 1985, 81-90.
Greencastle, Co. Down	Pre-castle occupation	Two sherds of souterrain ware	Gaskell-Brown 1979, 57-60; Lynn 1977-79:0032
Haggardstown, Co. Louth	Ditch	Souterrain ware sherd. Undated pottery sherd in nearby souterrain	Moore 2001:0858. McKeown 2003, 272
Haggardstown, Co. Louth	Metalworking Site	Coarse early medieval pottery	Walsh 2002:1348
Hillsborough, Co. Down	Rath	Sherds of souterrain ware	Gaskell-Brown & Brannnon 1978, 83-87.
Holywood, Croft Road, Co. Down	Rath	Over 150 sherds of souterrain ware	Proudfoot 1959, 105; Dunlop 2004:0436
Inch (Abbey), Co. Down	Ecclesiastical Site	Sherds of souterrain ware	Brannon 1980-4:0083.
Inch/Ballyrenan, Co. Down	Rath, multi-period landscape	Sherds of souterrain ware	MacManus 1997:0074, 1998:0114; McQuillan 1999:0151.
Jordanstown, *Meadowbank*, Co. Antrim	Rath	Sherds of souterrain ware	Halpin & Crothers 1995:007.
Kilcoo (parish of),	Souterrain	Sherds of souterrain ware	Lawlor 1916, 45.

Co. Down			
Killarn, Co. Down	Rath	One sherd of souterrain ware	Boal & Moffit 1959, 110.
Killegar, Co. Wicklow	Ecclesiastical site	7 sherds of possible souterrain ware	Raftery 1941, 306-08
Killroot, Co. Antrim	Ecclesiastical site	One sherd of souterrain ware	Ó Néill 2003:0016; McCormick & Macdonald 2003:0017.
Killyliss, Co. Tyrone	Rath	30 sherds of souterrain ware	Ivens 1984a, 24.
Kilmore, Co. Armagh	Ecclesiastical site	Considerable quantities of souterrain ware	Crothers 2002:0034.
Kilmoyle, Co. Antrim	?	?	N.M.I. Reg. Nos. Wk. 53 R. 139
Knock Dhu, Co. Antrim	Souterrain	Sherds of souterrain ware	Lawlor 1916, 33.
Knockans South, Rathlin Island, Co. Antrim	Late Neolithic	Possible souterrain ware sherds	Conway 1994:008.
Larrybane, Co. Antrim	Promontory Fort	Sherds of souterrain ware	Childe 1936, 188-91. Proudfoot & Wilson 1961-62, 97-103.
Lisanisk 1, Co. Monaghan	Pit near rath	Sherd of possible souterrain ware	Coughlan 2003:1489.
Lisleitrim, Co. Armagh	Crannog		Collins (*Pers. Comm.*)
Lismahon, Co. Down	Rath	Sherd of souterrain ware	Waterman 1959c, 157-58.
Lisnacrogher, Co. Antrim	Crannog	4 sherds of souterrain ware	Wakeman 1891, 675
Lisnagade II, Co. Down	Rath	Possible souterrain ware	Proudfoot 1961, 106
Lisnalinchy, Co. Antrim	Habitation site	Sherds of souterrain ware	Gilmore 2003:0020.
Lisnaskea, *Lisdoo Fort*, Co. Fermanagh	Rath	One sherd of souterrain ware	Brannon 1981-82a, 55-57.
Lissue, Co. Antrim	Rath	Sherds of souterrain ware	Bersu 1947, 51-52; Bersu 1948, 131-33.
Lissue, Co. Antrim	Pits	Sherds of decorated souterrain ware	Gahan 2000:0018.
Lough Faughan, Co. Down	Crannog	Over 200 sherds of souterrain ware	Collins 1955, 55-57.
Magheramenagh, Co. Londonderry	Souterrain	Sherds of souterrain ware	Gilmore 2000:0163.
Magheramenagh, Co. Londonderry	Souterrain	Sherds of souterrain ware	Reilly 1999:0130.
Markstown, Co. Antrim	Habitation site	Sherds of souterrain ware	McSparron 2001:0014.
Marshes Upper 1, Co. Louth	Souterrain and settlement	Over 55 sherds of souterrain ware	Gosling 1980-84:0137; Buteaux 1985:0040.
Marshes Upper 2, Co. Louth	Souterrain	50 sherds of souterrain ware	Gosling 1980-84:0138;
Marshes Upper 3-4, Co. Louth	5 souterrains and enclosures	Over 100 sherds of souterrain ware	Gowen 1992, 103.
Marshes Upper 5, Co. Louth	Enclosure and souterrain	15 sherds of souterrain ware	McCormick & Crone 2000, 555-60.
Marshes Upper 6, Co. Louth	Souterrain	Sherds of souterrain ware	McCormick & Crone 2000, 560
Marshes Upper, Co. Louth	Habitation site	Sherds of souterrain ware	Mossop 2002:1335; Mossop 2002:1341.
Middle Division, Co. Antrim	Prehistoric burnt mound	Several sherds of souterrain ware	Crothers 1996:0011.
Minnis North, Co. Antrim	Shell midden	Two sherds of souterrain ware	Simpson *et al.* 1993, 117.
Moneydorragh More, *Kilhorne*, Co. Down	Ecclesiastical	Two body sherds souterrain ware	Macdonald & McIlreavy 2007, 112.
Mooretown North, Swords,	Enclosure	Sherd of possible souterrain ware	Halliday 2004:0651.

Co. Dublin			
Movilla Abbey, Co. Down	Ecclesiastical	Sherds of souterrain ware	Yates 1983, 61, 65; Ivens 1984, 83-86.
Moyadam, Co. Antrim	Souterrain	One sherd of souterrain ware	Evans 1946, 79-80.
Moylarg, Co. Antrim	Crannóg		Buick 1893, 42-43. Buick 1894, 328.
Moyle Big, Co. Carlow	Pits and ditches	Sherds of souterrain ware	Kyle *et al*. 2009, 79
Mullagh, Co. Cavan	Ecclesiastical	Three sherds of 'early medieval pottery'	Russell 2005:1027
Mullagharlin/Haggardstown, Co. Louth	Souterrain and ditch	Several sherds of souterrain ware	McLoughlin 1999:0610.
Nendrum, Co. Down	Ecclesiastical	Sherds of souterrain ware	Lawlor 1925; Crothers & McErlean 2007, 369-70
Newtownbalregan, Co. Louth	Rath and souterrain	32 sherds of souterrain ware	Bayley 2003:1286; Roycroft 2005, 75.
Old Town Deer Park, *Bellaghy Bawn*, Co. Londonderry	Rath	Sherds of souterrain ware	Hurl 1995:0042.
Oughtymore, Co. Londonderry	Sandhills	20 Sherds of souterrain ware	Mallory & Woodman 1984, 53.
Poleglass, Co. Antrim	Rath	Sherds of souterrain ware	Harper 1971:0006.
Portbraddan, Co. Antrim	Cave habitation	Sherds of souterrain ware	May 1943, 51-55.
Portmuck, Islandmagee, Co. Antrim	Pottery scatter (pre-medieval rural site)	3 sherds of souterrain ware	Gormley 2004b, 87, 112.
Raholp (Craigaphuile I), Co. Down	Rath	Sherds of souterrain ware	Collins 1959b, 91
Raholp, Co. Down	Ecclesiastical	Few sherds of souterrain ware	Neill 1989:0020
Rampark, Co. Louth	Cemetery and souterrains	Sherds of souterrain ware	Campbell 2004:1122.
Rathbeg, Co. Antrim	Rath	Sherds of souterrain ware	Warhurst 1969, 96-97.
Rathmullan, Co. Down	Raised rath	Sherds of souterrain ware	Lynn 1981-82, 119-24.
Ringmackilroy, Co. Down	Rath	Sherds of souterrain ware	Crothers 1992:0037.
Sallagh Fort, Co. Antrim	Rath and souterrain	Sherds of souterrain ware	Davies 1938b, 33
Seacash, Co. Antrim	Rath	2885 sherds of souterrain ware	Lynn 1978b, 65-67.
Seafin, Co. Down	Rath? (Pre-Motte)	Sherd of souterrain ware	Waterman 1955, 86, 94.
Shane's Castle, Co. Antrim	Rath	Substantial quantity of souterrain ware	Warhurst 1971, 62-63.
Solar, Co. Antrim	Ecclesiastical	161 sherds of souterrain ware	Hurl 2002 Sandes 2002, 62-63.
Spittle Quarter, Co. Down	Souterrain	Sherd of souterrain ware	Brannon 1990:0028; Brannon 1990, 39-41.
St Peter's, Balrothery Co. Dublin	Ecclesiastical Site	3 sherds of souterrain ware	Murphy 2002:0472.
Tateetra, Co. Louth	Souterrain	Over 1,000 sherds of souterrain ware	Roycroft 2005, 76-77, 80; Hayes 2006, 57
Terryhoogan, Co. Armagh	Habitation Site	500 sherds of souterrain ware	McSparron 2007, 124-29.
Tray, *Haughey's Fort*, Co. Armagh	Bronze Age enclosure	Sherds of 'early Christian pottery'	Mallory 1995:0010
Tullagarley, Co. Antrim	Souterrain	Sherd of souterrain ware	McQuillan & Long 1999:0018.
Tully, Co. Antrim	Raised rath	Sherds of souterrain ware	Harper 1970:0003
Tullylish, Co. Down	Ecclesiastical	Sherds of souterrain ware	Ivens 1987, 87-95

Turnarobert, Co. Antrim	Souterrain	Sherds of souterrain ware	Williams 1991:0011.
Urney, Co. Tyrone	Rath	Sherd of souterrain ware	Scott 1970:0034.
Wattstown, *Soldiers' Hill*, Co. Londonderry	Habitation site	Sherds of souterrain ware	Stevens 2004:0375.
Whiterath, Site 1, Co. Louth	Near Rath (Site 2)	Sherds of souterrain ware	Ó Drisceoil 2000:0720.
Whiterath, Site 2, Co. Louth	Rath	Sherds of souterrain ware	Ó Drisceoil 2000:0721.

Table 7.8: Non-Souterrain Ware Early Medieval Native(?) Pottery

Townland/Site Name	Site Type	Comments	Reference
Ballycatteen, Co. Cork	Rath	Single piece of dark red pottery with inclusions	Ó Ríordáin & Hartnett 1943, 37
Ballyeagh, Co. Kerry	Sandhills	Sherds of inferior quality red pottery – local attempts to copy imported Roman wares	Ó Ríordáin 1947, 66
Ballygerry, Co. Wexford	Habitation site	28 Sherds of Pottery which shared some similarities to the souterrain ware tradition	Henry 2004:1789.
Killegar, Co. Wexford	Ecclesiastical	Seven sherds of red pottery, possibly Iron Age	Raftery 1941, 306-8
Lagore Crannog, Co. Meath	Crannog	Sherd of black, coarse ware	Hencken 1950, 126
Moynagh Crannog, Co. Meath	Crannog	Sherds of 'a coil-built pottery vessel of poorly fired white clay'	Bradley 1991, 18
Reask, Co. Kerry	Ecclesiastical	100 sherds of pottery - a light porous grass-tempered type; and a heavier type containing grits	Fanning 1981, 112

Chapter 7: Early Medieval Trade and Exchange

The early medieval economy was variously social, ideological and economic in character, and revolved around the distribution and periodic exchange of objects, food, raw materials, slaves and some exotic commodities. Most of this undoubtedly revolved around essentially local and regional trading territories, as cattle and bags of grain were brought by client farmers to their lord's residence or as raw materials were exchanged for finished objects. Almost all of this local trade is probably impossible to trace, although there are some objects that seem to be far from their origins (e.g. penannular brooches, souterrain ware) and we might be able to identify places where large quantities of grain was stored. Our archaeological evidence can only trace the movement of more exotic goods, particular pottery, glass and some objects such as weaponry.

Imports and exports to and from Ireland are often treated as peripheral to the development of trade in early medieval Europe. 'A recent book, '*Origins of the European Economy*' (McCormick 2001), one of the major works on early medieval trade has only a passing reference to Ireland. This work tends to focus on the Mediterranean region, and there is little discussion of the 'wealth of evidence of trade discovered in recent years' around the North Sea and the Irish Sea (James 2003, 260). Even those works which have attempted to deal with this issue (e.g. Hudson 1999, 39-68; Hudson 2006; Griffith 2010, 100-118), are limited by the relative paucity of archaeological and documentary evidence compared with southern European areas. Nevertheless it seems clear that the development and interplay of wider western and northern European trade routes in the latter half of the first millennium had implications on the Irish economy from this period. It has been argued that during the early medieval period the western European trade routes continued to be dominated by the economic sphere of influence of the Western Roman Empire (Pirenne 1925, 14). These trade routes survived the collapse of the empire in the west in A.D. 476 and struggled on for another century, aided and assisted by trade with the Eastern Roman Empire. Muslim conquests around the shores of the Mediterranean, however, cut off the Byzantine and Levantine trade with northwest Europe by the eighth century (*ibid*. 17). Although his theory of a northward shift in the centre of trade from the Mediterranean to northern Europe is strongly supported by the archaeological evidence from Ireland and elsewhere, Pirenne's rationale for this movement has been attacked for being over-simplistic (McCormick 2001, 575; McCormick 2002, 19-28). Indeed McCormick argues that the appearance of Muslim powers around the western Mediterranean 'offered the wealth and markets which would fire the first rise of western Europe' (2001, 798). Alternate factors, ranging from economic sanctions imposed by the Byzantine Empire (Lewis 1951, 89-131), to the development of the silver currency standard, rather than the former gold standard (Doehaerd 1978, 350-1), have also been argued as reasons for this northward shift in trade.

Pirenne's study predominantly focused on the rise of the Carolingian Empire, and other paradigms must be sought to explain trading patterns in the later part of the first millennium. In Ireland this is especially marked by the arrival of the Vikings and the establishment of Norse (and latterly Hiberno-Scandinavian) towns. It is tempting to view the subsequent change in trade routes to and from Ireland as being solely due to the Vikings, but other factors, such as the creation of a market-based economy in Carolingian Europe, may have been equally influential (Hodges 1989, 152; Hodges 2004).

Evidence for trade in Ireland during the Early Medieval period comes from two main sources – archaeological evidence; and literary evidence. The former is largely representative of overseas imports into Ireland, whereas the latter gives indications of the sort of material exported from Ireland, as well as the types of goods which have left no material remains. Certain exotic goods – especially pottery, glass and coinage – are datable, and these suggest that there were three main phases of trade in Early Medieval Ireland – Mediterranean trade (*c.* A.D. 400 – 600); Gaulo-Frankish trade (*c.* A.D. 600 - 800); and Hiberno-Scandinavian

trade (*c*. A.D. 800 - 1150). Contemporary documentary sources such as Irish legal tracts or various *Lives* of the saints, can be used to elaborate these trading phases, especially by describing trade goods which otherwise leave no archaeological record. The nature of some exotic material – for example, jet and amber – means that they cannot be so easily dated, and these goods will be dealt with separately.

During the earlier phases (*c*. A.D. 400 - A.D. 800), external trade (i.e. imports and exports) has been the subject of most academic interest (Wooding 1996; Campbell 2007; Doyle 2009; Kelly 2010), but there is also evidence for substantial external trade during the later phase. It is also possible that internal trade – i.e. trade between the various *tuatha* on the island of Ireland – may have played a more significant role than hitherto recognised in reinforcing social relationships/political alliances, as well as a means of distributing various goods throughout the community. The eleventh-/twelfth-century *Lebor na Cert* (Dillon 1962), for example, consists of lists of items due in tribute to the various Irish kings from their subject territories, and also due in inter-obligation between the various kings themselves. These lists are dominated by livestock, but they also include clothing, weapons, jewellery, slaves and '*fithchell*' (lit. 'wood-intelligence' – a gaming board, usually translated as 'chess'). The similarity of the tribute lists across the Ireland – there is no identifiable regional speciality – allied with the often 'organic' nature of the items make it difficult to distinguish them in the archaeological record, and further work is still required in this area before it may be possible to disentangle 'tribute goods' from 'trade goods'. As such this chapter will focus primarily on external trade, and internal trade will be discussed at the end of the section.

Trade with the Mediterranean (*c*. A.D. 400 - 600)

The archaeological evidence for Mediterranean imports into Ireland has been described and discussed by Ewan Campbell (1996, 2007), Ian Doyle (1998, 1999, 2009) and Amanda Kelly (2010). These tend to focus on sixth/seventh century trade, as indicated by Phocaean Red Slipware (PRSW) or African Red Slipware (ARSW), but pottery finds show evidence for possible earlier trade with the Roman Empire (Table 8.1). These are all rather limited in size and may indicate incidental trade, however, a complete second-century *olla* (storage-jar) dredged up in 1934 by a fishing-boat on the Porcupine Bank, 150 miles west of the coast of Co. Kerry, has been interpreted as Romano-British in origin (Ó Ríordáin 1947, 65). This has been interpreted as being 'lost from a Roman trading vessel blown widely off course' (Cunliffe 2002), possibly originally headed for the Irish west coast.

PRSW originated in western Asia Minor (modern-day Turkey), and is a type of bowl with a low foot ring, a 'soft orange-red, pink or brownish-red fabric', and covered by a dark red wash (Thomas 1959, 90; Doyle 2009, 18). It looks quite similar to the earlier Gaulish Samian ware, or *terra sigillata* (Table 8.1), and it is possible that some of these sherds may have been misidentified. PRSW dates from the mid-fifth to the mid-sixth centuries A.D., and finds are largely concentrated from the Black Sea to Sicily (Kelly 2010, 42). Examples have been found as far afield as Ireland, Britain and Spain (Laing and Longley 2006, 139), and these sherds tend to coincide with Hayes' 'Form 3' (1972, 464), dated to A.D. 500 ± 25 (Campbell 2007, 14).

ARSW was produced in northern Africa from the first to seventh centuries and dispersed primarily through the port city of Carthage. It was imported into western Britain and Ireland duing the fifth and sixth centuries when footed dishes were the most common form (Doyle 2009, 19). The only example found in Ireland is of a small rim-sherd from a fineware bowl of 'possible' African Red Slipware (*ibid*. 56) from a rath at Kilree, Co. Kilkenny. This form of possible ARSW is likely to date *c*. A.D. 525-550 (*ibid*.).

PRSW and ARSW constitute the pottery group formerly described as 'A'-ware (Thomas 1954; Thomas 1959). The finds in Ireland (Table 8.2) are restricted to high-status sites, such as the multivallate rath at Garranes, Co. Cork (Ó Ríordáin 1942a, 132-33; Doyle 2008, 47; Kelly 2010, 40, 46-47) and at a hillfort at Clogher, Co. Tyrone (Warner 1979, 38; Thomas 1981b, 1; Kelly 2010, 44-46). Slipwares were also identified at sites that straddled the emergence of

the typical early medieval site types, such as the settlement/cemetery site at Mount Offaly, Co. Dublin (Conway 1998:0124; Conway 1999, 41; Doyle 2009, 55; Kelly 2010, 48) and the enclosed cemetery at Collierstown, Co. Meath (O'Hara 2008, 90; Doyle 2009, 44; Kelly 2008, 16-18, 2010, 35, 49). The nature of the archival record, and the re-classification of both typologies and individual finds, means that, in some cases there are discrepancies and disagreements about the exact provenance of an artefact. For example, the excavator's description of 'G ware' found at Garryduff, Co. Cork (O'Kelly 1962, 110-11), has led some authors to re-interpret these finds as PRSW sherds (Thomas 1981c, 7; Kelly 2010, 41-42), although this has been rejected by others (Doyle 1999, 71; Campbell 2007, 14). Although the argument is less clear in the case of ARSW sherds (since only one has been identified), it seems clear that PRSW sherds are associated with important, high status sites. There is a 'striking overlap' (Kelly 2010, 54) between this distribution and that of imported drinking glass (Table 8.6) and it is argued that PRSW is 'undeniably a signature of prestige' (*ibid.*) and may have had an intrinsic value as luxury tableware items, rather than being the remainders of imported wine or oils (*ibid.*).

In contrast, the numerous sherds of Late Roman Amphorae (LRA) found in Ireland are likely to be the only surviving indicators of the goods imported in these jars (Doyle 2009, 23). Sherds of LRA - or B ware (Thomas 1954; Thomas 1959) – discovered in Ireland tend to show a general clustering in northern Leinster, the southwest and the southern midlands (Table 8.3).

Charles Thomas (1959, 92) subdivided B ware into Bi, Bii, Biii (B misc) and Biv – subsequently Bv and Bvi were also added. Excavations in Carthage have refined this typology – amphorae have been re-classified as 'Late Roman 1-7' (LR1-LR7) – and in many cases, have allowed the various sub-types to be identified with specific regions around the Mediterranean (Riley 1981). Late Roman Amphorae have been found on at least twenty Irish sites (Doyle 2009, 22), frequently on ecclesiastical sites and settlement/cemeteries. In many cases the pottery has only been generally classified as 'B ware', however, Doyle (*ibid.* 40-56) has recently examined these ceramics and has produced a detailed catalogue of the types of 'B ware' recovered from Irish sites. Table 8.3 is primarily a reproduction of his recent findings.

LR1 (Bii) is typified by large wheel-made cylindrical amphorae, probably manufactured in south-east Asia Minor and northern Syria (Empereur and Picon 1989; Doyle 2009, 19-20). Approximately 13 Irish sites have produced sherds of LR1 (Bii) amphorae including Garranes, Co. Cork, Iniscealtra, Co. Clare, Reask, Co. Kerry, the Rock of Cashel, Co. Tipperary and Dalkey Island and Lusk, Co. Dublin (Table 8.3; Doyle 2009, 20).

LR2 (Bi) is typified by large wheel-made cylindrical amphorae produced in the Peloponnese in southern Greece (Megaw and Jones 1983; Munn 1985), and possibly the islands of Chios and Kos (Vroom 2003, 143). At least seven Irish sites have yielded sherds of LR2 (Bi) including Colp West, Co. Meath, Clogher, Co. Tyrone, Garranes, Co. Cork, Rock of Cashel and Derrynaflan, Co. Tipperary (Table 8.3; Doyle 2009, 19).

LR3 (Biv) is typified by wheel-made amphorae from the Aegean or Asia Minor which occur in small numbers at sites in southwest Britain. No Irish site has produced evidence for this ware to date (Doyle 2009, 20). 'Biii' ware (Thomas 1959) – later replaced by the term B misc(ellaneous) ware (Thomas 1981b, 17) – describes a category of unclassified amphorae of varying forms and fabrics (Doyle 2009, 20). The origin of these amphorae has not been identified, and Campbell refers to these as LRA (Campbell 2007, 19). Sherds have been discovered on the Rock of Cashel, Garranes, Clogher and Dalkey Island (Table 8.3; Doyle 2009, 20-22). 'Bv' amphorae originated in North Africa and a number of sherds from Dalkey Island, Co. Dublin have been identified as possibly belonging to this type of ware (*ibid.*).

There have been various conflicting opinions about what the different amphorae contained and transported along these trading routes from the eastern Mediterranean. Thomas has argued that the more globular shape of the bases of LR1 amphorae (Bii) meant they were

used for transporting olive oil (1959, 92), and that the more pointed shape of LR2 amphorae (Bi) meant they were used for transporting wine (*ibid.*). More recently it has been suggested that the main contents of fifth-/sixth-century LR1 and LR2 amphorae were both olive oil and wine (Karagiorgou 2001, 148-49; Decker 2001, 80). Kelly has argued that LR1 amphorae were strongly associated with the wine trade, and that the main cargoes reaching Ireland from the eastern Mediterranean consisted primarily of wine and, to a lesser extent, olive oil (2010, 65-66). Work on the late Roman ship wreck off the island of Yassi Ada (which sank off the coast of Kos) has shown, however, that the function of an amphora could not be deduced from its shape since some of the amphorae recovered from the wreck showed evidence for having been used to carry various materials at different times (Bass and van Doorninck 1982).There is no available archaeological evidence to identify the materials which were traded with the Mediterranean merchants, however it seems possible that many of the intangible imports and exports referred to in seventh- and eighth-century writings may have also been the subject of trade during this earlier period.

Gaulo/Frankish Trade (*c.* A.D. 550-800)

By the seventh century A.D., the visible archaeological evidence suggests that there is a gradual shift in emphasis in trade away from the Mediterranean and towards continental Europe. There is also evidence that early medieval Ireland, with its growing population, wealthy lordly classes and 'booming' agricultural economy, became a significant region in the western European economy. The principal archaeological evidence consists of E ware pottery, glass and weaponry, imported from Gaul and the Anglo-Saxon world. By the seventh century Irish missionaries were working their way through continental Europe, and the hagiographies of these individuals allow for further information about trade between Ireland and Western Europe. Irish law tracts, such as the '*Muirbretha*' ('Sea-Laws'), also give some hint as to what material was being shipped around the coasts of Ireland (Doherty 1980, 78).

Imported Pottery

E ware is the most frequently discovered pre-Viking imported pottery in Ireland and Britain. It is thought to have originated in northwest Gaul – although the production sites have yet to be identified – and is believed to have been imported into Ireland *c.* A.D. 525-700. These dates, supported by archaeological excavations, have established that there may have been an overlap in the mid-/later sixth century between the insular use of E ware and Late Roman Amphorae (*ibid.* 25). The volume of E ware finds from Ireland – there are at least 55 sites (Table 8.4; Doyle 1998, 93; Doyle 2009, 60-61) – strongly supports the possibility of direct trading routes between Ireland and Francia over this period (Doyle 2009, 34).

Although E ware has been identified on many different site types, including high status raths, crannogs, enclosures and ecclesiastical sites, it is particularly associated with raths. Indeed, the importation of E ware into Ireland from the mid-sixth to early eighth century coincided with the *floruit* of rath construction across the island (Doyle 2009, 31-33). It has also been suggested that E ware may have been used by the emerging secular elites in high status raths as a means of 'expressing their identity and of extending and maintaining their power' (*ibid.* 34). As with the earlier LRA/B ware, E ware finds show clear evidence for clustering. Although sherds have been identified at various sites in the midlands, southwestern and northern Ireland, two major concentrations have been recorded – one around Strangford Lough, Co. Down (Campbell 2007, 115), and the other in northeastern Leinster (Doyle 2010, 29-30). It is not yet clear whether this distribution is related to general patterns of early medieval trade and exchange around the Irish coastline, or whether it is a product of the regional character of recent Irish archaeological excavations.

E ware has been sub-divided into jars (E_1), beakers (E_2), bowls (E_3), pitchers (E_4) and storage jars (E_5) (Thomas 1959, 96-98; Doyle 2009, 23). It has been suggested that, unlike Late Roman Amphorae – which was largely imported as containers for the trade goods – 'E-Ware' was primarily traded as a domestic ceramic commodity (Doyle 1998, 93; Doyle 2009, 23). In this aspect it may reflect the 'prestige' importation of PRSW a century or so earlier (Kelly

2010, 54). The 'prestige' argument seems to be damaged by central perforations found on a number of E_5 lids in Ireland, which were interpreted as holes to enable the release of steam during cooking (Doyle 2009, 23); and Campbell argues that the primary purpose of E ware was to function as containers (2007, 49-52). He points to red dyestuff from the plant dye madder inside insular E ware vessels, which may have been used to contain nuts, spices, honey and other 'exotic luxury goods' (*ibid.*).

Sherds of *dérivées sigillées paléochrétiennes* (DSPA/D ware) (Rigoir 1968; Doyle 2009, 23) have been recovered from three sites in Ireland – Clogher, Co. Tyrone (Campbell 2007, 31), 'Mount Offaly', Cabinteely, Co. Dublin (Conway 1999, 27, 34; Doyle 2009, 55) and Ninch, Co. Meath (McConway 2001:1007; Doyle 2009, 23-25, 55) (Table 8.5) – with a possible example found at Ballykeoghan, Co. Kilkenny (Doyle 2009, 23). DSPA describes a range of bowls, plates and *mortaria* (pounding or mixing bowls) which were produced in the Bordeaux area during the sixth century (Campbell 2007, 28; Doyle 2009, 23). DSPA is still relatively uncommon in insular contexts and where it occurs in Britain, it is usually restricted to high status secular settlement sites in south Wales and southwest England (*ibid.*).

F ware pottery has been recovered from two sites in Ireland – Corbetstown (Kilpatrick), Co. Meath (Swan 1980-84:0199), and Smithstown, Co. Meath (Gowen 1988:0055) (Table 8.5); and, as mentioned above, G ware was identified at Garryduff, Co. Cork (O'Kelly 1962, 110-11). Campbell argues that 'F' and 'G' wares should be reclassified as 'miscellaneous' since they cover heterogeneous material, and 'not all [are] of proven early medieval date, and some [are] now known to be of medieval or Roman origin' (Campbell 2007, 52).

Imported Mediterranean wares have been found in a variety of contexts. Doyle (2009, 34-35) has posited a tentative association of pottery with funerary contexts, noting that imported pottery has been found on both ecclesiastical cemeteries (e.g. Rock of Cashel and Derrynaflan, Co. Tipperary, Iniscealtra, Co. Clare and Caherlehillan and Reask, Co. Kerry) as well as cemetery/settlement sites (e.g. Mount Offaly and Gracedieu, Co. Dublin and Colp West and Collierstown, Co. Meath). Some of the imported Mediterranean and later Frankish ceramics also appear to have been deposited near possible shrines at Caherlehillan, Reask and Church Island, Co. Kerry, and Doyle (*ibid.*) has suggested that high status items from Roman Europe carried a symbolic significance for these early ecclesiastical communities. It is unclear if this expression of Romanitas may also have been a motivating force for the occurrence of sherds of fifth/sixth century Late Roman Amphorae (B ware) and DSPA (D ware) at a number of possible secular cemeteries in northern Leinster. In the fifth and sixth centuries, Co. Meath and north Dublin 'was a particularly internationalised region, heavily influenced from Roman Britain' (Gavin and Newman 2007, 2), and this could perhaps explain the occurrence of imported ceramics.

Imported Glass

The evidence for glass importation into Ireland is less easily traced because of the more fragmentary nature of the archaeological material (Table 8.6). Campbell identifies seven sites in Ireland on which 'Group B: Germanic tradition'-glass sherds have been found (2007, 73). A greenish-blue fragment of a seventh-/eighth-century claw beaker was recovered at Dunnyneil Island, Co. Down (*ibid.* 60); two complete phials of yellowish or yellow-green glass were recovered from a seventh-century context at Moynagh Lough, Co. Meath (Bourke 1994, 168); and a similar phial was recovered from an undated context in a souterrain at Mullaroe, Co. Sligo (Harden 1956, 154).

Nine Irish sites from which 'Group C: decorated Atlantic tradition'-glass has been recovered have been identified (Campbell 2007, 69). These are differentiated from 'Group D: undecorated Atlantic tradition', by the presence of opaque white decorations which often decay in acidic soils. This decoration is created by the addition of tin oxide as an opacity agent, rather than calcium antimonite which was used at a later date in Scandinavia (Henderson 1993, 47). There are two main sub-classes of Group C, based upon differences in decorative styles. Those with horizontal bands, dated to the mid-sixth century (Campbell

2007, 68), make up the bulk of Group C material found in Ireland. Vertical chevron decoration appears in the late-sixth/early-seventh century, and in Ireland is only found at Armagh (*ibid*. 69). The excavations at Whithorn, on the Solway Firth, would suggest that Group C and Group D glass may have been imported along with E ware pottery (*ibid*. 73).

It is possible that both complete vessels and broken glass fragments were being imported into Ireland. The phials from Moynagh Lough and Mullanroe presumably contained some precious liquid, but there is also chemical evidence from at least eleven sites in Ireland to show that imported broken glass was melted and reworked into 'glass bosses, millefiori rods, cables and beads' (Henderson and Ivens 1992, 57).

There is a strong overlap (Kelly 2010, 66-67) in the distribution of sites yielding LR1 (Bii ware) – possibly used to transport wine (*ibid*. 65-66) – and sherds of imported glass cone-beaker vessels and bowls (Bourke 1994, 167-71). These cone-beakers date to the fifth and sixth century and are interpreted as drinking vessels presumably used for wine consumption. Sherds of Harden's IIId and IIIe type cone-beakers have been found at Garranes, Co. Cork, Clogher, Co. Tyrone, Randlestown, Co. Meath and Dalkey Island, Co. Dublin (Bourke 1994, 171; Kelly 2010, 67); and sherds of fifth/sixth century Gaulish-Frankish glass bowls of Harden's Class XIb have also been found at Garranes, Clogher, Reask, and Dalkey Island (Bourke 1994, 167–73; Kelly 2010, 67). These glass imports indicate trading connections between the inhabitants of high status Irish sites and Gaul during the fifth and sixth centuries (Kelly 2010, 68) and their presence on sites with LR1 ware could suggest that this Gallo-Hibernian trade piggybacked onto a much wider shipping network extending from the eastern Mediterranean to the Atlantic coastline (*ibid*. 72).

Imported Metal-Work:

The archaeological evidence for metal-work being imported into Ireland during the early medieval period is extremely limited (Mytum 1992, 159-162), and only one site – Lagore, Co. Meath – has produced *possible* finds. Both of the examples identified at Lagore are of a military nature – a possible Frankish sword; and a shield boss of 'continental-style' (Hencken 1950, 99).

Coins:

Two early sixth-century Frankish coins –Maryborough (Portlaoise), Co. Laois (Hall 1973-74, 82); and Trim, Co. Meath (*ibid*.) – are recorded as having been found in Ireland (Table 8.12). These date from the period of the importation of E ware from western France, and may have arrived in Ireland during this process.

Other Imported Goods

There are various hints and allusions in the written sources to the types of goods being imported into Ireland during the early part of the early medieval period. The different types of imported pottery and glass may also give some indication of whether the container or the content was the originally traded item.

Wine

The importance of the imported wine trade to early medieval Ireland was set out a century ago (Zimmer 1909). Although Zimmer's theorisation based on the dominance of the wine trade hassince been refuted (James 1982; Wooding 1996), it is nevertheless clear that some of the archaeological remains may be a result of this trade. Thomas (1959, 92) has argued that LR2 amphorae (Bi ware) were used for transporting wine, and Kelly (2010, 66) has argued a similar role for LR1 amphorae (Bii ware). It has been suggested that E ware jugs and bowls (E_1-E_4) may also have been imported as drinking or symposium vessels as part of the wine trade (James 1982, 383; Wooding 1996, 69); and the role of much of the imported glass-work from this period also seems to have involved drinking (see above).

The documentary sources mention importation of wine into Ireland during this period, perhaps originally as part of the Eucharist. The '*Life of Ciaran of Clonmacnoise*' mentions the arrival of Gaulish wine merchants:

> '*In illis diebus…mercatores cum vino Gallorum venerunt ad S. Kiaranum…*' (Plummer 1910, 214).
> ['In those days…merchants came to St. Ciaran with Gaulish wine' (Trans. Author)].

It has, however, been argued that this entry, coming from a fifteenth-century manuscript, may be a projection of the contemporary medieval wine trade with France back into the sixth century (James 1982, 375; Thomas 1990, 4). The regular Gaulish trade hinted at by Adomnán in his '*Life of Columba*' has also been associated with the French wine trade (James 1982, 377):

> '*Et antequam praesens finiatur annus, Gallici nautae, de Galliarum provinciis adventantes, haec eadem tibi enarrabunt*' (Anderson & Anderson 1961, 265).
> ['And before the present year will be over, Gaulish ships from the province of Gaul, will announce this to you…' (*ibid*. 266)].

The importance of the wine trade for liturgical reasons may explain why Late Roman Amphorae are found on ecclesiastical sites, and the change in the pottery-types may indicate a change in sourcing wine from the eastern Mediterranean to the Loire Valley. Wine must still have been imported for similar reasons even after the disappearance of E ware in the late seventh century. There is no archaeological evidence to support this claim, although James argues from saga literature that wine was imported in 'large vessels, or butts, presumably of wood' (1982, 382), which would then rot away, leaving no archaeologically identifiable trace.

Olive Oil

Thomas (1959, 92) suggests that the globular LR1 amphorae (Bii) were used for olive oil containers. As stated above the form and provenance of the amphorae cannot necessarily be used to identify possible trade goods, and although oil may be used in certain liturgical rites, there is no clear indication that olive oil was imported into Ireland at this period.

Other Food Stuffs

Late Roman amphorae were not only used to transport liquids such as wine and oil, they were also used to transport dry goods such as '*garum*' ('fish sauce'), nuts, fruits, seeds and spices. *Garum* is not mentioned in any Irish text, but 'foreign nuts' ('*mara cno gnae*') are included in the list of flotsam in the *Bretha Étgid* (O'Mahoney and Richey 1873, 427). This reference, however, could equally apply to large tropical nuts and seeds washed up occasionally on the shoreline of the west of Ireland by the Gulf Stream, rather than to any aspect of deliberate trade (Kelly 1997, 306). Traces of imported spices such as cardamom and fennel have been recovered on Scottish sites from this period (Wooding 1996), and presumably similar material would have been traded to Ireland as well. Honey ('*mil*') is also mentioned amongst the flotsam listed in the *Bretha Étgid* (O'Mahoney and Richey 1873, 427), suggesting that it was either traded to Ireland, or was an Irish export.

The '*Letter to Waldebert and Bobolenus*', which appears at the start of the '*Life of Abbot Columbanus and His Disciples*', mentions a cargo loaded onto an Ireland-bound ship in Nantes:

> '*Centum modia esse vini ducentaque frumenti, sed et braces centum idemque modia*' Liber I, §22 (Krusch 1902, 97).
> ['One hundred measures of wine, two hundred of wheat, and one hundred of beer' (Trans: Author)].

This shipment was as a parting gift for Columbanus, and has been interpreted as implying that wheat and beer were regularly exported to Ireland from Gaul in the seventh century

(Doehaerd 1978, 153; Doherty 1980, 77). The fact that beer may have been imported into Ireland from Gaul is rather intriguing, since 'Columban certainly introduced its use throughout what is now France' (Nelson 2005, 93). Another entry in the '*Life of Columbanus*' mentions '*cervisia*', 'which is boiled from the juice of wheat or barley' (*ibid*. 94), and may imply that the wheat aboard the ship at Nantes would be used for malting in Ireland.

Noirmoutier, the emporium/trading post at the mouth of the Loire River, was well-known for its salt pans, and 'Baiesalt' was widely distributed along the Loire valley and the interior of the Frankish empire (Hodges 1989, 128). This emporium appears to have been the centre for the Irish trade to continental Europe (see exported goods below), and as such it would be highly unlikely that trading ships would return to Ireland without a cargo of salt, especially when salt was not mined in Ireland until the later medieval period (Scott 1981, 115-16)

Animals

There are few references to animals or animal products being imported into Ireland at this time. A recension to the *Bretha Étgid* (Trinity H5.15 - *Corpus Iuris Hibernicis* 2155, 1.20) adds 'feathers' or 'furs' ('*clúmaí*') to the list of flotsam (Binchey 1978; Wooding 1996, 69); and O'Davoren's '*Glossary*' includes '*laire breathnacha*' ('British/Welsh horses') (Stokes 1862, 95).

Slaves

There is evidence for slave raiding on Britain during this period, the best known being the story of St Patrick's arrival in Ireland. St Patrick later condemned the practice in his '*Letter to the Soldiers of Coroticus*': 'Far from the love of God is a man who hands over Christians to the Picts and Scots' (Hanson 1971). Although slaves are mentioned throughout the Irish Law tracts (Kelly 1988, 112), little archaeological evidence of slavery has been recognised. The iron slave collar from Lagore, Co. Meath (Hencken 1950, 115-117) is regularly mentioned in this context, and possible slave chains and shackles have been identified at Knowth, Co. Meath; Oldgrange, Co. Kildare; Corcreevy, Co. Tyrone; Lough Sheelin, Co. Cavan; and Coagh, Co. Sligo (Barton 2000, 22). These objects show similarities to Central European slaving artefacts from the same period, such as the slave collar from Staré Zámky or the slave shackle from Krvina (McCormick 2001, 742-43). There is no indication, however, whether the slaves were imported from outside Ireland, or were from within Ireland.

Exported Goods

Although there is a reasonable amount of information on imported material in Ireland from this early phase, there is little information about what was being exchanged for it, or what was being exported outwards from Ireland to Britain and the nearby Continent. Classical authors, such as Strabo, wrote of 'hides, slaves and hunting dogs' (Jones 1969, 255) being the prime exports of Britain and Ireland, and 'over the centuries it was undoubtedly slaves which were the most important merchandise in this trade' (Doehaerd 1978, 200). The sixth-century '*Life of Germanus*' (§LXXII (193)) mentions Scottish (i.e. Irish) slaves being sold in Marseilles, although there is no similar reference found in the Irish sources; and the same work also mentions Scottish (i.e. Irish) slaves receiving their freedom from Germanus:

> '*Unde sunt contiguae gentes in testimonium, Hispanus, Scottus, Britto, Wasco, Saxo, Burgundio, cum ad nomen Beati concurrerent, undique liberandi jugo servitii.*' Vita Sancti Germani §41 (*Acta Sanctorum* May VI, 776).
> ['There were peoples held in slavery – Spanish, Irish, Britons, Gascons, Saxons, Burgundians – when they came to the name of the Lord, they were freed from their slavery' (Trans: Author)]

The eastern Mediterranean seemed to have almost a monopoly on the merchants operating in Gaul at this period; Greeks, Syrians and Jews all appear to have made a living from the slave-trade serving Muslim North Africa (Doehaerd 1978, 172).

The only other good reference to specific Irish exports at this time comes from the seventh-century '*Life of Philabert*' of Noirmoutier, the emporium/trading post at the mouth of the Loire River. This describes:

> '*Scottorum navis diversis mercimoniis plenus ad litus affuit, quae calciamenta ac vestimenta fratribus larga copia ministravit*' §42. (Krusch and Levison 1910, 603)
> ['The arrival of Irish ships with various goods aboard which supplied the brethren with ample quantity of shoes and clothes' (trans. Author)].

An entry in the '*Life of Columbanus*' mentions 'a vessel which had brought Scottish [i.e. Irish] wares' to the mouth of the Loire ('*Reperta ergo navis quae Scottorum commercia vexerat…*' §23 (Krusch 1902, 97)); and a similar statement is made in Notker's ninth-century '*Life of St. Gall*':

> '*Cumque navem, quae de Scotorum terra ad litus Galliae cum mercimoniis venerat et redire parabat, ingressi fuissent…*' (de Winterfeld 1899, 1105)
> ['And when the ship, which had come from the land of the Scots [i.e. Ireland] to the Gallic shore with its merchandise prepared to leave, they got on board…' (Trans. Author)].

Both these references to Irish ships date to the *floruit* of E ware, suggesting that there may have been a two-way trade between parts of Ireland and western and northwest Gaul/Francia at this time. Although the wine trade from France to Ireland may have continued after the start of the eighth century, there is no information on the reciprocal trade from Ireland to France.

The '*Letter to Waldebert and Bobolenus*', found in the prologue to Jonas' '*Life of Columbanus*', can be internally dated to the 640s. In this Jonas compares the ascetic conditions at Bobbio, in northern Italy, to the more luxurious conditions at other monastic sites by contrasting the imported materials:

> '*Illi dites balsami lacrimam ex Engaddi, floresque aromatum ex Arabia; nobis ex Hibernia vix butyrum pinguiscit. Illi piper nardumque sumunt ex India…*' Liber I, §23 (Krusch 1902, 63).
> ['They have tears of balsam from Engaddi, and aromatic flowers from Arabia; but we have a scarcity of Irish butter. They have pepper and nard from India…' (Trans: Author)].

The nature of Jonas' rhetoric suggests that Irish butter was both a common-place and cheap export to Continental Europe, in contrast to the more exotic goods from the Levant and the Orient.

Trading Locations on the Irish coast: A.D. 400-800

One of the pre-requisites for trade is the ability to 'generate a surplus of agrarian goods or slaves, metals or ores' (Doyle 2009, 35), and it is likely that the surpluses generated in pre-Viking Ireland were on a relatively small scale (Valante 1998). With the possible exceptions of Dalkey Island, Co. Dublin (Liversage 1968; Doyle 1998) and Dunnyneil Island, Co. Down (McCormick and Macdonald 2004; 2010), there is little evidence for major coastal *emporia* such as those found in southern Britain or western Europe; and the lack of references to a mercantile class in the seventh-/eighth-century Irish law tracts may indicate that 'there was insufficient economic capacity to support the development of large-scale trade' (Doyle 2009, 35-36). In Ireland it appears that the pre-Viking internal economy operated on a relatively small-scale based primarily on the mechanisms of gift exchange, reciprocity or redistribution (Doherty 1980; Doyle 2009, 35) and that beach locations and offshore island were particularly exploited for bringing imported pottery and glass ashore by traders. These 'beach markets' may have been established by maritime traders, perhaps acting in co-operation with local elites or the church (O'Sullivan and Breen 2007, 119).

Dalkey Island, Co. Dublin (Liversage 1968), a small island on the south side of Dublin Bay, seems to have been one of these 'beach markets'. The island produced evidence for Mesolithic and Bronze Age occupation, as well as an early medieval settlement concentrated on a narrow promontory at the north-west end of the island, adjacent to a natural landing place. This promontory fort was built in the sixth/seventh century, and probably succeeded a previous unenclosed settlement (Liversage 1968, 166). The site has produced one of the largest amounts of imported pottery and glass known in Ireland, including fifth-/sixth-century Late Roman Amphorae and sixth-/seventh-century E ware pottery, as well as glass bowls and glass beakers (*ibid*. 112-13; 165-68; 193). Both the nature of the enclosure and the domestic finds from it indicate that Dalkey Island was a high status settlement site, however, it would have made an ideal trading place, or *emporium* (Doyle 2009, 28). It was strategically located on the Irish Sea maritime routeways, and was also placed on an offshore island, where it could have served as a safe and secure landing place for merchants working under the protection of a local king.

Significant quantities of Late Roman Amphorae and Frankish E ware were imported into the area between the mouths of the rivers Liffey and Boyne. This area coincides with the main concentration of Romano-British artefacts in Ireland and might indicate that the importation of Mediterranean and Frankish ceramics revived earlier patterns of trade and exchange (Doyle 2009, 31). The region of the Southern Brega focused on Lagore crannog, Co. Meath (Swift and Byrne 2008, 12; Doyle 2009, 31), and there is a concentration of sherds of E ware in the vicinity of Lagore at Collierstown, Raystown, Garretstown, Roestown, Ratoath and Summerhill Demesne. It appears that the royal settlement of Lagore acted as a redistribution point for these imported wares within the early medieval kingdom of Southern Brega (Doyle 2009, 31).

Another cluster of Late Roman Amphorae and Frankish E ware has been identified along the course of the River Boyne at Stalleen, Knowth (Site M and the passage tomb) and Randalstown in central Co. Meath. These imported ceramics were subsequently possibly redistributed through Northern Brega from the royal seat in the vicinity of Slane (Doyle 2009, 29-31). The site of *Inber Copla/Inber Colpidi* (Colp) is described in various early sources and *Muírchú's* seventh century *Life of Patrick* appears to imply that it operated as an *emporium* along the Irish Sea coast (Charles-Edwards 2000, 16, 156; Gowen 1988:0051; Doyle 2009, 29).

Another large concentration of E ware was identified at a number of excavated raths (Ballyfounder, Spittle Ballee and Rathmullan) and ecclesiastical sites (Downpatrick) around Strangford Lough, Co. Down (McErlean 2002, 87-90). This pottery may have been introduced into the territory of the local Dál Fiatach *via* the small island of Dunnyneill Island, situated at the southern end of the lough, opposite its entrance and the mouth of the Quoile estuary. Archaeological excavations on Dunnyneill Island (McCormick and Macdonald 2004; 2010) indicated the presence of an early medieval enclosure, E ware pottery, Mediterranean and Anglo-Saxon glass, as well as evidence for high-status feasting, iron-working, copper-working and glass-working. Dunnyneill Island appears to have been both a high-status, seasonally occupied island, as well as a beach trading station, and was probably also a location for feasting and entertainment.

As offshore islands, both Dalkey Island and Dunnyneill may have been seen as usefully neutral places. An early medieval annalistic reference to a royal political encounter on *Inis na Righ*, another Irish Sea island on the north Dublin coast, is described as being usefully 'neither sea nor land' (O'Sullivan and Breen 2007, 154) and thus capable of being used for negotiating political agreements. It is evident that there is growing evidence for the presence of small *emporia*, particularly along the Irish Sea coastline, but the failure of these sites to develop into sites comparable to Hamwic (Southhampton) in southern England may indicate that there was 'insufficent economic or social capacity to sustain a major trading centre' (Doyle 2009, 35). Pre-Viking trade and exchange was instead structured primarily around gift-giving and reciprocity, so it is likely that local kings or other secular elites sent emissaries to

the these islands (or went out themselves) to meet Gaulish/Frankish traders, exchanging their own locally sourced hides, slaves or other goods for foreign pottery, glass and exotic foods. These exotic goods could then have been brought back to the royal residence for redistribution to royal kin and clients in the respective local political territories.

Viking, English and Hiberno-Scandinavian Trade (*c.* A.D. 800 - 1150)

In the Viking Age, Ireland was drawn into another maritime trading network, but one with a focus on the north Atlantic. The Irish Sea in particular had become a major arterial route, serving as the axis for sea-going trade and exchange between the Mediterranean and northern Europe. Dublin was a particularly significant stopping-off point on the east-west seaways between early medieval Europe and the Scandinavian colonies of the Faroe Islands, Iceland and Greenland. The culturally important role of both the native Irish and Dublin Vikings in the North Atlantic is highlighted by the frequent reference in the Icelandic sagas to Irish slaves and women, for example, Óláfr Höskuldsson, the hero of the *Laxdœla Saga*, is the son of an Irish mother (Heller 1976). The discovery of Irish-type ringed pins at the tenth-century Norse settlement at L'Anse Aux Meadows in Newfoundland, Canada, also indicates the far flung maritime connections between Ireland and elsewhere (Fanning 1992, 24-26).

Strongly influenced by contemporary annalistic references to Viking raids, most modern scholars tend to emphasise violence, fleets of warships and raiding around Irish coastal waters in the ninth century A.D. It is possible, however, that Scandinavian rural settlements such as Cherrywood, Co. Dublin (Ó Néill 1999, 8-10) or even the Dublin *longphort* established in A.D. 841 (A.F.M. 840), were the residences of Scandinavian men and women engaged in trade, manufacturing and rural agricultural labour. Particularly striking is the development of ports and harbours from the tenth centuries onwards. In the previous century it would appear that Viking traders would have dealt with off-shore emporia, in much the same way as their Mediterranean and Frankish predecessors did. The *Kaupmannaeyjar* ('merchant islands'), identified as the Copeland Isles off Co. Down (Pinkerton 1855, 179), may have acted as one such trading post.

The Viking port towns of Dublin, Wexford, Waterford, Cork and Limerick, which emerged in the tenth century, were all located at places with a number of suitable topographic features and landscape characteristics – proximity to the coast and situation on large natural havens at the confluence of rivers. These locations provided natural defence, sheltered by the surrounding topography and the river barriers, with a ready escape route to the sea. The ports were also at the boundaries of existing expansive socio-economic and political hinterlands and provided ready access to a wide and varied hinterland.

By the tenth/eleventh centuries, Dublin was one of the most important trading ports in Atlantic Europe, with its own ships being the key to trade and commerce with the Baltic, Mediterranean and Russia. Between A.D. 920-1170, Dublin had trading links with York, Scandinavia, Anglo-Saxon England and other parts of Ireland (Wallace 1987a, 202). Gold and silver ingots and a large number of imported coins indicate the importance of trade with England, particularly the Chester area (*ibid*. 230-31), and with the north west of France (*ibid*. 233-34). The presence of walrus ivory (available only in the Arctic Circle), soapstone vessels and amber indicates that trade was maintained with Scandinavia. Silks found in Dublin indicate that it was part of a trading network which stretched, *via* Byzantium, as far as the Silk Road to China (*ibid*. 220); this is further supported by silver coins from Samarkand, Tashkent and Baghdad found in Dublin (*ibid*. 217) (Table 8.13) attesting to trade through the River Don/Baltic Sea arc, anchored on Byzantium.

Almost certainly the major exports from Dublin were wool, hides and slaves (Wallace 1987a, 237-38). The slave-trade has been the most studied of these trades, and this is dealt with in greater detail below.

Archaeological Evidence for Trade, A.D. 800-1150

Knowledge of early medieval trade between Ireland and the rest of Europe in the Viking Age (A.D. 800-1150) is dominated by the discoveries from the Hiberno-Scandinavian towns, particularly Dublin. Although exotic materials have been found in the Hiberno-Scandinavian towns (such as Dublin or Cork), or Viking *longphorts* (such as Woodstown, Co. Waterford (O'Brien and Russell 2005, 118-9), these are often linked to Viking settlers, rather than trade with the native Irish. As the Viking settlements become more established, the ability to differentiate between material brought in by a settler, material sold to a settler, or material produced by the later Hiberno-Scandinavian population, becomes increasingly difficult. By contrast, contemporary 'native' sites, such as Balriggan, Co. Louth (Delaney and Roycroft 2003, 16-19), or Killickaweeny, Co. Kildare (Walsh and Harrison 2003, 33-36) do not show evidence of this external trade.

In reality a fourth trade phase emerges in the late-eleventh century and carries on through to the effective failure of the English colony in Ireland in the later medieval period. Only the start of this phase falls within the delimited time frame. Substantial work has been done by Clare McCutcheon (2006) in identifying the (largely English) pottery that was imported into Ireland during the early years of the Anglo-Norman colony, and future work looks to catalogue the Saxo-Norman pottery in Ireland (McCutcheon 2010; 2014).

Imported Pottery

There is little evidence for imported pottery for a large part of this period. This may partly be due to the expansion of native-made material such as souterrain ware, everted-rim ware, crannog ware and Leinster cooking ware. The suggested change from ceramic amphorae to wooden butts for wine transportation (James 1982, 382) would also have had a major impact on the spread of exotic pottery in Ireland.

Specialist reports from excavations at the Hiberno-Scandinavian/medieval towns of Waterford (Gahan and McCutcheon 1997a), Limerick (McCutcheon 1996a), Dublin (McCutcheon 1994; McCutcheon 1995b; Gahan and McCutcheon 1997b; McCutcheon 2006b) and Cork (Hurley and Power 1981; McCutcheon 1995a, McCutcheon 1996b, McCutcheon 1996c, McCutcheon 1997; Gahan *et al*. 1997) have indicated a large import trade, predominantly from southwest England, from the late-eleventh century onwards (Table 8.7). Excavations in Hiberno-Scandinavian Dublin have also uncovered sherds of various forms of French pottery (Table 8.9) which may pre-date the Anglo-Norman settlement (Hurst 1988). There is clear evidence for importation of pottery from both England and France after A.D. 1150, and this has been most recently discussed by Clare McCutcheon (2006). This chapter, however, is concerned with importation prior to this date, and thus contains a limited number of identified pottery types.

The predominant imported pottery came from kilns near Bath, such as Ham Green A which is dated from the early-twelfth century to the late-twelfth century. South East Wiltshire ware, which was not widely traded until the mid-/late twelfth century, is also found in large numbers on urban sites in Ireland. Other West Country pottery found in Ireland from this period include West Wiltshire ware (early twelfth century), and Cornish ware (late-eleventh/mid-twelfth century). Some sherds of Stamford ware (pre-1150) were found at Waterford; a number of sherds of Coarse London-type (twelfth century), which is more usually associated with the Scottish market, were also found at Cork, Waterford and Dublin; and sherds of Dyfed gravel-tempered ware (mid-/late-twelfth century), suggest trading links with southwest Wales. In most of these cases the imported pottery represents cooking or table ware, rather than storage jars for other goods, and the implication must be that the pottery was being imported for domestic use (McCutcheon 2006, 38-57).

Dates for the imported French pottery (Table 8.8) are often more vague. Two sherds of 'French cooking vessel' identified by the excavator at Harristown, Co. Louth (Murphy 1994:0181) were given a broad date between the ninth century and the twelfth century. This

remains, to date, the only early medieval French pottery to be found in a non-urban site. English wares and Rhenish Paffrath ware were recorded from the rath at Ballyfounder, Co. Down (Waterman 1958b, 48; Hurst 1988, 243), but this comes from the later re-occupation of the site as an Anglo-Norman motte.

Imported Glass

There is, as yet, no complete study of glass imports into Ireland during the Hiberno-Scandinavian period. This may partly be because glass was being manufactured in Ireland from base materials at sites such as Dunmisk, Co. Tyrone (Henderson 1988; Henderson and Ivens 1992), and these sites could supply the native glass and enamel industry.

Imported Coins

A large percentage of the coin hoards recorded from Ireland during the Hiberno-Scandinavian period have poor provenance (Tables 8.9-8.13). The assumption must be made that these largely represent the proceeds of raiding, rather than trading. It is possible, however, that small-scale finds, such as the single coin of Anlaf Guthfrithsson, king of York (Table 8.9), found at the ecclesiastical sites of Armagh (Hall 1973-74, 76) and Durrow, Co. Offaly (*ibid*. 74), or the coin of Harald Hardrada, king of Norway, found at High Island, Co. Galway (Scally 1999:305), may be the result of trading.

Those hoards with Hiberno-Scandinavian coins (Table 8.11) are an obvious indicator of the problems in trying to identify trade during this phase. Coins of Sihtric III (Silkbeard), for example, found outside the Hiberno-Scandinavian kingdom of Dublin – e.g. Armagh (Heslip 1984, 134) – may represent trade, or raiding, or the adoption of the Hiberno-Scandinavian coinage as a common form of currency in other parts of Ireland.

Imported coins are also known from elsewhere in continental Europe, including Frankish coins found at Maryborough (Portlaoise), Co. Laois and Trim, Co. Meath (Hall 1973-74, 82), and Carolingian coins found at Coghlanstown West, Co. Kildare, Derrykeighan, Co. Antrim and Knockmaon, Co. Waterford (Table 8.12). A 'Norman' coin found at Dalkey Island, Co. Dublin (Liversage 1968, 179-81) may also be the result of some unknown trading enterprise, rather than Viking raiding.

Among the most remarkable coins found in Ireland are those with Kufic inscriptions (Table 8.13). Although these are not evidence for a direct Irish-Arabic trade, they are indicators of the extent of the wider Viking trade networks – particularly the Baltic/Byzantine route – and are also informative of the way such coins could find their way out of the Norse towns, and into the rural hinterland.

Other Material

The period A.D. 800-1000 has very little documentary information on external trade – the Irish Law tracts are largely out of date and there are no *Lives* of pioneering Irish saints to fall back on. From the start of the second millennium, however, there is evidence available in the form of harbour taxations, laws and trade regulations which throw further insight into the types of goods being traded between Ireland and the rest of Europe at this time.

Wine

The ninth-century '*Teocosca Cormaic*' (Meyer 1909, 4-5) draws upon the earlier *Bretha Étgid* when it notes that wine is one of the treasures that a king will attract to his court (Wooding 1996, 69). Doherty (1980, 78) argues on etymological grounds that the wine trade still carried on through the Viking period, since the Irish word for a wine ship – '*fíncharb*' – is an amalgam of the Old Irish word for wine ('*fín*') and the Old Norse word for ship ('*karfl*').

The French wine trade was flourishing in the late-twelfth century. Giraldus Cambrensis writes that:

> '*Vina tamen transmarine, ratione commercii, tam abunde terram replent, ut vix propaginis proventusque naturalis in aliquot defectum percipias. Pictavia namque de plenitudine sua ei copiose vina transmittit. Cui at animalium coria, et pecundum ferarumque tergora, Hibernia non ingrata remittit*' Topographia Hibernica Book I, §VI (Dimmock 1867, 28).
> ['Imported wines…are so abundant that you would scarcely notice that the vine was neither cultivated, nor gave its fruit here. Poitou…sends plenty of wine' (O'Meara 1951, 15)].

Thus, in the 1180s, western France still appears to be the main source of wine to Ireland, as it was six centuries earlier.

Other Food Stuffs

Along with wine, the *Teocosca Cormaic* also mentions mead as being among the treasures attracted to a royal court (Wooding 1996, 69). Honey was recorded among the flotsam in the *Bretha Étgid*, and it is possible that mead was also imported into Ireland, presumably from Anglo-Saxon England. A definite import from England, however, would seem to be salt. The '*Vision of MacConglinne*', dating from the eleventh or twelfth century, is probably the greatest repository of information on the contemporary Irish diet. In one episode, MacConglinne, prepares a meal of:

> '*…olar sen-shaille ⁊ maeth bóshaille ⁊ lán-charna muilt ⁊ mil 'n-a criathraib ⁊ salann Saxanach*' (Meyer 1892, 23)
> ['…juicy old bacon, and tender corned-beef, and full-fleshed wether, and honey in the comb, and English salt' (Meyer 1892, 60)].

Although salt is mentioned in the early-eighth-century *Críth Gablach* (Richey 1879, 325), there is no evidence for native salt production prior to the late-twelfth century, and all Irish place-names associated with salt production are ultimately English in derivation (Scott 1981, 115-16).

Walnuts, which would have originated in southern Europe; and sweet plums, which have been argued to have come from southern England (Wallace 1987a, 215) are indicators that exotic food-stuffs were also imported into Hiberno-Scandinavian Dublin.

Silk

Approximately sixty pieces of silk have been recovered from Hiberno-Scandinavian Dublin. These have been interpreted as probably coming from Byzantium (Wallace 1987a, 220), although it is possible that they originated in the Muslim east. These finds may represent trade at Dublin, but they may equally represent material brought to Dublin from farther afield by returning townsfolk.

Slaves

Although the slave trade may have been equally important before the arrival of the Vikings in Ireland, more information is available on the imported slave trade from the ninth century onwards. There are numerous references in the Irish annals to slaves being brought into Ireland as a result of Viking raids, for example, 'Amlaíb and Ímar returned to Áth Cliath from Alba with two hundred ships, bringing away with them in captivity to Ireland a great prey of Angles and Britons and Picts (*AU* 871)'. The Dublin-based slave trade seems to have extended as far south as northern Africa:

> 'Then they [i.e. the Dublin Vikings] brought a great host of them [i.e. Moors] captive with them to Ireland, i.e. those are the black men. For *Mauri* is the same as *nigri*; "Mauritania" is the same as *nigritudo*. Hardly one in three of the Norwegians escaped, between those who were slain, and those who drowned in the Gaditanian Straits. Now those black men remained in Ireland for a long time' (*Fragmentary Annals of Ireland* 867).

The Viking settlement at Limerick, established in A.D. 922, for a time rivalled Dublin as 'the key market for slaves' (Forte *et al*. 2005, 105); later documents show that Dublin quickly re-established its supremacy. From the tenth to the twelfth century, there was a trade in slaves between Chester and Dublin (Doherty 1980, 84), and the slave trade between Bristol and Ireland banned by Wulfstan in the early-eleventh century (Darlington 1928) has also been assumed to have been based in Dublin (Gwynn 1947, 277).

The importation of English slaves into Ireland seems to have still been common practice through to the late-eleventh century when Giraldus Cambrensis records that the Council of Armagh banned the trade and announced that English slaves throughout Ireland should be set at liberty (Mansi 1902, 123). The Council of Armagh mentions pirates involved in the slave trade (suggesting that some slaves were acquired by raiding), but also mentions merchants who purchased, *inter alia*, children from their parents, suggesting that some slaves may have been the subject of more deliberate enterprise (Scott and Martin 1978, 69-71).

The Dublin-based slave trade would appear to have been the most important aspect of import trade during this period. Such an interpretation, however, is influenced by the sensational nature of this trade, which may have meant that it was more worthy of recording than the wine trade or the salt trade which also existed at this time.

Exported Goods

As with the earlier trading phases, there is little information about what goods were being exported from Ireland over this period. William of Malmesbury, writing *c*. A.D. 1125, mentions ships from Ireland trading in York ((Book III, §99): '*naves a Germania et Hibernia venientes*…' (Hamilton 1870, 208)), Bristol ((Book IV, §152): '*in quo est portus navium ab Hiberniam et Norregia...*' (Hamilton 1870, 292)) and Chester ((Book IV, §172): '*Transmittitur a Cestria Hiberniam revehunturque civitati necessaria...*' (Hamilton 1870, 308) – but with the exception of the (unidentified) staple goods (*necessaria*) traded between Chester and Ireland, he does not give any description of their cargoes.

There is substantial evidence for the exportation of pelts and animal skins from Ireland to England in the post-Norman period. '*The Libelle of Englyshe Polycye*' written between 1436 and 1438 comments on Ireland's great trade wealth in skins:

'I cast to speak of Ireland but a litle,
Commodities of it I will entitle,
Hides and fish, salmon, hake, herring,
Irish wool and linen cloth, falding,
And marternes good be her marchandie,
Hertes, hides, and others of venerie,
Skinnes of otter, squirrel and Irish hare,
Of sheep, lambe, and fore is her chaffare,
Felles of kids and conies great plentie' (Warner 1926).

It is possible, with the exception of the introduced rabbit, that the trade in the fur and pelts of marten, deer, otter, squirrel, hare, sheep, lamb, fox and kid was a traditional Irish export in earlier centuries. Giraldus Cambrensis, writing in the late-twelfth century, mentions that 'the hides of animals and the skins of flocks and wild beasts' were traded from Ireland in exchange for Poitevin wine (O'Meara 1951, 15). He also comments on the abundance of martens in Ireland: '*Martinarum copia abundant hic silvestre*' (*Topographia Hibernia* Vol. I, § 24 (Dimmock 1867, 58)); and describes how they were caught. The trade in marten pelts can be traced farther back than Giraldus as a charter of Rouen dated to 1150 or 1151 (reissued in 1199) states that:

> 'Quaecunque navis de Hibernia venerit…Rothamagum veniat, unde ego habeam de unaquaque nave unum tymbrium de martris aut decem libras Rothamagi…'

['Whenever a ship should come from Ireland…and come to Rouen, I [i.e. Duke Henry of Normandy (1150), and later King John (1199)] shall have from every ship one "timber" [i.e. a parcel of 40 skins] of martens, or ten Rouen pounds…']
(quoted in Round 1909, 467).

There appears to have been a marten trade between Chester and Dublin ('*Dunelina*'), dating back to the reign of Henry I (1100-1135) (Round 1909, 465), and there is a 'curious allusion' to Chester's Irish marten trade in Domesday Book (*ibid*. 467). The suggestion that Viking Dublin was the centre of the Irish fur trade, or at least the marten fur trade, is supported by the fact that a small number of marten bones were found in tenth century contexts in the town (McCormick 1999, 363). Marten bones were also found at Ballinderry (II), Co. Offaly (Stelfox 1942, 73), and Cahercommaun, Co. Clare (Stelfox 1938, 75). These remains presumably represent fur-processing, although possibly for domestic use rather than trade.

Food produce also appears to have been exported from Dublin to Chester by the end of the twelfth century. Aside from the 'salmon, hake [and] herring' mentioned in the later '*Libelle of Englyshe Polycye*', the late-twelfth century *De Laude Cestrie* ('In Praise of Chester'), states that:

'*Hibernus adorat cum piscibus et portus maris*' (Lucian, *De Laude Cestrie* §24-5, 44, 47)
[Ireland honours [Chester] with fish and port dues] (Taylor 1912).

Ireland, or at least Viking Dublin, was a manufacturing centre for ring-pins (Fanning 1992, 24-26), some of which have been found across the Atlantic. Viking and Hiberno-Scandinavian Dublin, however, was best known as a trading and processing centre for slaves. Often the slaves were kept only a short time in Dublin before being sent off to their final destinations, for example there is evidence of slaves being sent from Ireland to Rouen *c*. A.D. 1000 (Doehaerd 1978, 206), and the assumption is that the Moorish slaves captured in A.D. 867 were also sent on to other destinations. The slave trade in Dublin, however, was not merely a transfer point for slaves from England, Spain or North Africa, and a large number of the slaves exported from Dublin at this period would have been native Irish (Holm 1986, 342).

Other Materials

Amber

Amber, whether in the form of beads, or of un-worked lumps, was found in eighteen early medieval sites in Ireland prior to 2004 (Table 8.14). It would be tempting to interpret the presence of amber in Ireland as either evidence for Viking trading, or even as evidence for Hiberno-Scandinavian settlement. The vast majority of the amber found in Ireland comes from the excavations at Fishamble Street in Dublin – over 4,000 pieces were recovered from workshops in this area (Wallace 1987a, 215) – and this may represent the source of much of the rest of the amber found in Ireland.

Amber, however, is found on a number of sites which clearly pre-date the arrival of the Vikings, such as the early phases of Lagore, Co. Meath (Hencken 1950, 150-1), or Garranes, Co. Cork (Ó Ríordáin 1942a, 121). It must, therefore, be assumed that there was some low level importation of amber into Ireland before A.D. 800. This does not necessitate the presence of a Baltic trade, however, and may have been accomplished through middle-men in Saxon England.

An account of Ireland in the *Nuzhat al-Mushtaq*, produced by the Muslim cartographer Al-Idrisi in Sicily *c*. 1154, draws on an earlier work entitled the '*Book of Marvels*', which records that 'there are three towns [in Ireland] which used to be inhabited and ships used to put in there and visit there, buying from the inhabitants amber and coloured stones' (Beeston 1950, 278; James 1978, 5). The deserted towns may refer to the period in the early tenth century when Dublin was abandoned by the Vikings, thus giving a rough date to the account from the

'*Book of Marvels*', and, although the 'coloured stones' cannot be identified (James 1978, 6), there is a clear suggestion that amber (whether raw or worked) may have been exported from Ireland (presumably Dublin) to Muslim Spain.

Jet

Jet has been found on twenty-six early medieval sites in Ireland prior to 2004 (Table 8.15). Among finds of jet, bracelet fragments predominate, although some un-worked jet lumps have been found at Fishamble Street in Dublin (Wallace 1987a, 216). These were sourced to near Whitby, in Yorkshire (*ibid.*), and it is possible that this may represent the origin of most Irish jet pieces. There are, however, some difficulties with the identification of jet on a number of sites (see Chapter 6). In certain cases 'jet' is included as a possible stone-type, along with 'shale' or 'lignite' – Drumaroad, Co. Down (Waterman 1956a, 86), and Ballyaghagan, Co. Antrim (Proudfoot 1958, 30) – and it is clear that further petrological research is required before a definitive list of jet finds in Ireland may be produced.

Porphyry

Fragments of porphyry have been found on a number of Irish sites, and these have been discussed in detail by Lynn (1984). All examples were green in colour, and were sourced to Greece, with the exception of a single piece of red porphyry from Armagh, which was sourced to Egypt (*ibid*. 19). Lynn noted that fragments have been found at the ecclesiastical sites of Armagh; Downpatrick, Co. Down; Movilla Abbey, Co. Down; and Kilteel, Co. Kildare. Generally, they were found in contexts that post-dated A.D. 1000. Since Lynn's survey, further examples of green porphyry have been found at the ecclesiastical sites of Clonmacnoise, Co. Offaly (King 1992:0157), Derrynaflan, Co. Tipperary (Ó Floinn 1985:0053) and Christ Church Place, Dublin (Wallace 1987a, 220). Porphyry is found almost exclusively on ecclesiastical sites – with the exception of Fishamble Street, Dublin (Wallace 1987a, 220) – suggesting that it was imported for the beautification of the church, or possibly for inclusion in portable altars.

Relics

The trade in the remains of saints was a major business concern in medieval Europe (McCormick 2001, 283-318). Although a large number of portable shrines have been recovered from early medieval Ireland, the vast majority of these appear to be related to local or regional saints, and thus would be unlikely to be part of this broader European trade. An Anglo-Saxon ivory plaque found in Dublin (Wallace 1987a, 220), has been interpreted as representing this trade, and it is possible that some of the Samian-ware found in Ireland may have arrived through this trade (*ibid.*). The decorated 'Gospel of St. Martin' taken from 'Dunbo in Dal Riada' (Dunboe, Co. Londonderry) in 1182 (*AFM 1182*) may also have arrived in Ireland through the relics trade.

Internal Trade

Archaeological evidence for local and regional internal trade, unlike external trade, is almost non-existent, or at least non-visible, for this period. Material culture is reasonably homogenised throughout the island in the early medieval period though it has long been recognized that the country was largely aceramic except for a locally produced hand-made group of ceramics (souterrain ware) particular to northeastern Ulster (Ryan 1973). A few sherds of souterrain ware, however, have been found outside this core area (Table 8.16), suggesting that the vessels may have been deliberately transported there. The most distant piece of souterrain ware found so far comes from an enclosure at Carrigrohane, Co. Cork (Moloney 2003:0188), but possible souterrain ware has been identified in Hiberno-Scandinavian Dublin – where the sherds were tentatively identified as the remains of jars used to transport honey (Wallace 1985a, 125; 1987a, 203) – and in Moyle Big, Co. Carlow (Kyle *et al*. 2009, 79).

It has been argued that concentrations of certain products, such as the 524 whetstones or honestones from Cahercommaun, Co. Clare (Hencken 1938, 60), may represent internal trading centres (Comber 2008, 159). It is equally possible that these items may have been

produced for the export trade. The sheer numbers of extant goods found on the site may suggest that neither trade was successful.

Some work has been done in trying to identify the provenance of millstones and quern stones on sites in Co. Down. The stones at Nendrum has been traced to the upper reaches of Bloody Bridge River, in the Mourne Mountains, in the south of Co. Down (Meighan 2007, 205); a quern stone from Ballynarry, has also been traced to the Mourne Mountains (Davison 1961-2, 73); and one of the millstones from Rathmullan was sourced to Scrabo Hill, in north Co. Down (Lynn 1981-2, 136). These stones were quarried and transported across different polities, suggesting that some form of mutual exchange was involved in their procurement, rather than the compulsion of the local secular or religious authority. The granite mountainous massif in Wicklow was a favoured source for the production of early medieval mill- and quern-stones in the Leinster region (Corlett 2010). A passage in Cogitosus' *Life of Bridget* (Connolly and Picard 1987, 24) describes the sourcing of a millstone for the monastic site of Kildare at the summit of a mountain (e.g. nearby Wicklow uplands). Corlett (2010) has investigated a collection of unfinished early medieval granite millstones in western Wicklow which provide important information about the sequence of steps involved in their manufacture from rough-outs to finished products.

The establishment of permanent Norse settlements in Ireland appears to have acted as a catalyst to internal trade. Foodstuffs, such as grain (or bread), cattle and sheep, would have been brought in from the ports' hinterlands. The faunal evidence from Hiberno-Scandinavian Dublin, for example, shows quite clearly that there was a different age-slaughter pattern operational in the urban area from that prevalent on the producing farms (McCormick and Murray 2007, 116). Clothes would also have been necessary for the urban settlements, and this has been argued as a driving force behind the movement from cattle to sheep farming in some areas (*ibid*. 107).

There is also the possibility that a reasonable percentage of the Irish slaves traded through the slave-market in Dublin were the result of slaving amongst the native *tuátha* themselves. There is a reference in Keating to an Irish king raiding another province and taking off captives, for example:

> 'It was in the reign of Flann Sionna [877-914], king of Ireland, that the following events took place. For this king plundered and wasted all Munster and carried off captives there from.' (Comyn and Dineen 1902, 193)

Provincial kings also received slaves as part of their tribute:

> 'Mael Brigte thereafter received his own award and compensation for the insult to Pátraic's honour from the provinces of Ireland, as well as taking their hostages, thirty-seven *cumals*, and four of the Ulaid hanged, not counting churches and monastic tenants'. (*CS* 893)

There are problems, however, with misinterpreting slave-raiding, with slave-trading, and other factors must also be considered, such as the fact that slavery was accepted as a common alternative to the death penalty (Kelly 1988, 216). The nature of tribute between both clients and patrons, and also between client states and provincial kings, further exacerbates the problem of identifying internal trade in Ireland, for example the *Lebor na Cert* ('Book of Rights'), composed sometime after A.D. 900 (O'Donovan 1847, xi), mentions drinking horns, slave-women, hounds, weaponry, chess-sets, and clothing all changing hands as part of this process, as well as the livestock dues (*ibid*. 69-71).

Conclusion

The various phases of external trade through the early medieval period not only highlight a change in overseas trading partners, but also a significant shift in the way in which trade was organised in Ireland. In the earlier phases – up to *c*. A.D. 800 – external goods appear to

have arrived at specific coastal *emporia*, and then moved inland. The Dublin Bay islands of Lambay and Dalkey (Doyle 1998, 101), and the coast of Co. Down and Strangford Lough – especially Dunnyneill Island (McCormick and Macdonald 2004) – played a substantial role in the import trade, and a similar, unidentified site, most likely existed in the area around Cork harbour. From these *emporia* the exotic material was moved inland to its ultimate destination – ecclesiastical sites and high status sites. The exact nature of this relationship is not fully understood. Doherty (1980) favours the model of the 'monastic town', perhaps with a subsidiary port on the coast, which could then 'redistribute,' or 'trade-on', the imported goods at '*óenach*' (monastic fairs) such as that which gave the name to Nenagh, Co. Tipperary. This view was rejected by Valante (1998) who proposed a more European-style model based on the role of local magnates.

The establishment of the Hiberno-Scandinavian towns marks a significant change in how external trade is managed in Ireland. In the new scheme, the town plays the role of both *emporium* and market-place. This may explain why so little exotic material finds its way out of the urban centres and into the ecclesiastical sites or high status sites which formerly constituted the market for such goods.

Although there are changes in the mechanisms by which trade operates in Ireland over the early medieval period, there are remarkable similarities in the type and nature of goods traded during this period. Basic consumables appear to dominate the export market – clothing, leather shoes and butter are all mentioned, and there is an assumption that leather (or at least hides) was also exported (Hodges 1989, 33). In return salt, cereals, and beer appear to have been imported.

Slaves were both imported and exported during this period, and the establishment of a major slave-trading port in Ireland – i.e. Dublin – increased the profitability of slave-raiding and slave-trading by allowing excess slaves to be sold to an overseas market.

There is also evidence for a high-range set of imports. Wine was of great importance, both for liturgical reasons, and also as a status symbol for the nobility. Silks were discovered in Hiberno-Scandinavian Dublin, and it seems highly probable that exotic spices and herbs may also have been brought into Ireland throughout this period.

Far from being peripheral to the development of trade in Western Europe, Ireland played her part as a minor, but enthusiastic, trading partner. Irish traders sailed from western France round to the east coast of England; and Irish slavers worked from North Africa to Iceland. External trade is now reasonably well understood, but further study is required to ascertain the level of internal trade in Ireland, and what, if any, impact this had on contemporary society.

Table 8.1: Sherds of Roman/Late-Roman Pottery found in Ireland

Townland/*Site Name*	**Site Type**	**Comments**	**Reference**
Ballinderry (II), Ballynahinch, Co. Offaly	Crannog	One sherd of Arretine-ware.	Hencken 1942, 48-49.
Ballyeagh, Co. Kerry	Sandhills	One sherd of red pottery with roulette design.	Ó Ríordáin 1947, 66; Bateson 1973, 87.
Clogher, Co. Tyrone	Rath	Three sherds of North Romano-British coarseware	Bateson 1973, 64.
Dalkey Island, Co. Dublin	Emporium	Two sherds of Samian ware (*terra sigillata*)	Liversage 1968, 112-13; Bateson 1973, 67.
Dublin: High Street, Co. Dublin	Medieval urban	One sherd of Argonne ware (4th-century).	Bateson 1973, 87.
Dublin: Woodquay, Co. Dublin	Hiberno-Scandinavian Urban	One sherd of Samian ware (*terra sigillata*)	Bélier 1981-82, 192-94.
Dundrum, Co. Down	Sandhills	One sherd of Samian ware (*terra sigillata*)	Collins 1959a, 12; Bateson 1973, 65.
Freestone Hill, Co. Kilkenny	Hill fort	Two sherds of 'late Roman' pottery	Raftery 1969, 44-46; Bateson 1973, 65.
Knowth, Co. Knowth	Raised Rath	One sherd of Samian ware (*terra sigillata*)	Eogan 1968, 375.
Lagore, Co. Meath	Crannog	Four sherds of Samian ware (*terra sigillata*)	Hencken 1950, 123-24; Bateson 1973, 68.
Lislear, *Island McHugh*, Co. Tyrone	Crannog	One sherd of Samian ware (*terra sigillata*)	Davies 1950, 54; Jope 1952, 136; Bateson 1973, 65.
Lough Faughan, Ballyrolly, Co. Down	Crannog	One sherd of Samian ware (*terra sigillata*)	Collins 1955, 55-58; Bateson 1973, 65.
Loughshinny, Co. Dublin	Promontory Fort	Sherds of 'late Roman' pottery	Collins 1960b, 39; Bateson 1973, 70.
Offshore: Porcupine Bank	Dredging	Storage-jar (*olla*) of thin, soft dark-grey ware, with traces of darker coating (2nd-century).	Ó Ríordáin 1947, 65
Tara, Co. Meath	Multivallate rath	Fourteen sherds of Samian ware (*terra sigillata*)	Collins 1960b, 39; Ó Ríordáin 1964, 26; Bateson 1973, 72.

Table 8.2: Sherds of Phocaean Red Slipware (PRS) – 'A-Ware' – found in Ireland

Townland/*Site Name*	**Site Type**	**Comments**	**Reference**
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ Cemetery	1 sherd from a form 3 PRSW Bowl (A-ware)	Doyle 2009, 55; Conway 1998:0124, Conway 1999, 41; Kelly 2010, 48.
Clogher, Co. Tyrone	Rath	Doyle (1996, 117, 2009, 43-44) cautions against the identification of PRSW from Clogher.	Warner 1979, 38 Thomas 1981b, 1 Kelly 2010, 44-46.
Collierstown, Co. Meath	Enclosed Cemetery	1 sherd from a form 3 PRSW bowl (A-ware)	Doyle 2008, 44; O'Hara 2009b, 90; Kelly 2008, 16-18 Kelly 2010, 35, 49, 88.
Garranes, Co. Cork	Multivallate Rath	3 sherds from a form 3E PRSW Bowl (A-ware)	Doyle 2009, 47; Ó Ríordáin 1942a, 132-3; Kelly 2010, 40, 46-47.
Garryduff, Co. Cork	Univallate Rath	Sherds of (possible) Phocaean Red Slipware (A-ware)	Thomas 1981b, 7; Kelly 2010, 41-42.

Table 8:3: Sherds of Late Roman amphorae –'B-ware' – found in Ireland

Townland/Site Name	**Site Type**	**Comments**	**Reference**
Ballynavenooragh, *Cathair Fionnurach* Co. Galway	Cashel	Sherds of LR1 (Bii ware) and LRA (B misc)	Gibbons 1994:0116; Doyle 1996, 106; Kelly 2010, 60.
Blanchfieldsland, *Leggetsrath West* Co. Kilkenny	Rath	2 sherds from 1 LR1 amphora (Bii)	Lennon 2006, 48; Doyle 2009, 40; Kelly 2010, 60.

Townland/Site Name	Site Type	Comments	Reference
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/ Cemetery	2 sherds from 1 LR2 amphora (Bi)	Conway 1998:0124; Conway 1999, 34, 41; Doyle 2009, 55; Kelly 2010, 58.
Caherlehillan, Co. Kerry	Ecclesiastical	59 Sherds from 1-2 LR1 amphorae (Bii)	Sheehan 2009, 196; Doyle 2009, 40-41; Kelly 2010, 60.
Cherrywood, Co. Dublin	Burial Ground	Sherd of B-ware	Ó Néill 2006, 68.
Clogher Demesne, Co. Tyrone	Multivallate Rath	5 sherds from 1 LR2 amphora (Bi), 8 sherds from 1 LR1 amphora (Bii) and 70 sherds from 4 (B misc) vessels.	Warner 1972:0031; 1973:0033; 1974:0037. Doyle 2009, 43-44; Kelly 2010, 58, 61.
Collierstown, Co. Meath	Enclosed Cemetery	12 sherds from 1 LR1 amphora (Bii).	O'Hara 2009b, 90; Doyle 2009, 44; Kelly 2010, 58, 85-88.
Colp West, Co. Meath	Settlement/Cemetery	4 sherds from 1 LR1 amphora (Bii) and 2 sherds from 2 (B misc) vessels.	Gowen 1988:0051; Doyle 2009, 44-45; Kelly 2010, 58.
Colp West, Co. Meath	Enclosure Complex	1 sherd from 1 LR2 amphora (Bi)	Doyle 2009, 46; Clarke & Murphy 2001:952
Cormac's Chapel, Rock of Cashel, Co. Tipperary	Ecclesiastical	1 sherd from LR2 amphora (Bi), 3 sherds from 1-2 LR1 amphorae (Bii) and 4 sherds from one (B misc) vessel.	Hodkinson 1994, 171. Doyle 2009, 41-42;
Crossnacreevy, Co. Down	Rath	Sherds of B Ware	Kelly 2010, 58.
Dalkey Island, Co. Dublin	Emporium	2 sherds from 1 LR2 amphora (Bi), 6 sherds from 1 LR1 amphora (Bii), 1 sherd from (BV) amphora and 4 sherds from 2-3 (B misc) vessels.	Liversage 1968, 165-68; Doyle 2009, 46-47; Kelly 2010, 58.
Garranes, Co. Cork	Multivallate Rath	Two hundred sherds of B-ware 16 sherds from 1 LR2 amphora (Bi), 197 sherds from 8 LR1 amphora (Bii), 11 sherds from 4 (B misc) vessels.	Ó Ríordáin 1942a, 127-32; Doyle 2009, 47-52; Kelly 2010, 58, 61.
Gracedieu, Co. Dublin	Enclosed Cemetery	1 sherd from 1 LR1 amphora (Bii)	Gowen 1988:0016; Doyle 2009, 53; Kelly 2010, 60.
Iniscealtra, Co. Clare	Ecclesiastical	30 sherds from 1 LR1 amphora (Bii)	Doyle 2009, 53; Campbell 2007, xviii; Comber 2008, 168; Kelly 2010, 60.
Kilgrovan, Co. Waterford	Ecclesiastical	Sherds from 1 LR1 amphorae (Bii)	Purcell 2003:1882; Doyle 2009, 56; Kelly 2010, 60.
Lisnacreevy, Co. Down	Ploughed field	I sherd from 1 LR2 amphora (Bi)	Doyle 2009, 53
Loughshinny, Co. Dublin	Promontory fort	Sherds of Bv ware	Edwards 2004, 70; Kelly 2010, 58.
Lurgoe, *Derrynaflan*, Co. Tipperary	Ecclesiastical	66 sherds from 1 LR2 amphora (Bi).	Ó Floinn 1985:0053; Ó Floinn 1987:0044; Doyle 2009, 47; Kelly 2010, 60.
Lusk, Co. Dublin		2 sherds from 1 LR1 amphora (Bii)	Doyle 2009, 54; Kelly 2010, 59-60.
Navan, Co. Meath			Edwards 2004, 70; Kelly 2010, 58.
Nendrum, Co. Down	Ecclesiastical site	Wheel-turned globular vessel – similar to Garranes red-ware (LR1/Bii)	Ó Ríordáin 1947, 68
Reask, Co. Kerry	Ecclesiastical	12 sherds from 1 LR1 amphorae (Bii) and sherds from 1 (B misc) vessel.	Fanning 1981, 113; Doyle 2009, 55-56; Kelly 2010, 60.
Russelhill, Co. Cork	In field to east of Cashel hillfort near Bandon	1 sherd from 1 LR2 amphora (Bi)	Doyle 2009, 56.

Townland/Site Name	Site Type	Comments	Reference
St Anne's, Randalstown, Co. Meath	Ecclesiastical	Sherd from 1 LR1 amphora (Bii)	Kelly 1975:0032; Doyle 2009, 55; Kelly 2010, 58.
Stalleen, Co. Meath	Enclosure	1 sherd from 1 LR2 amphora (Bi)	Doyle 2009, 56; Kelly 2010, 58.
The Point, Lambay Island, Co. Dublin	Burial	Sherds of LRA	Cooney 1995:0100; Kelly 2010, 58.

Table 8:4: Sherds of E ware found in Ireland

Townland/*Site Name*	Site Type	Comments	Reference
Armagh: Castle Street, Co. Armagh	Ecclesiastical	2 sherds from 1 vessel ($1xE_1$)	Gaskell-Brown & Harper 1984, 143; Doyle 2009, 60.
Ballinderry (II) Ballynahinch, Co. Offaly	Crannog	6 sherds from 2 vesels ($2xE_1$)	Hencken 1942, 49-50; Doyle 2009, 60.
Ballycatteen, Co. Cork	Multivallate rath	54 sherds from 9 vessels ($7xE_1$, $1xE_5$, $1xE_6$ unguent jar)	Ó Ríordáin & Hartnett 1943, 35; Doyle 2009, 60.
Ballyfounder, Co. Down	Raised rath	1 sherd from 1 vessel ($1xE_2$)	Waterman 1958b, 46; Doyle 2009, 60.
Ballynavenooragh, *Cathair Fionnurach*, Co. Galway	Cashel	Possible LRA, or E ware, sherds	Gibbons 1994:0116. Kelly 2010, 60.
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/cemetery	19 sherds from 2 vessels ($2xE_1/E_4$, $2xE_5$)	Conway 1998:0124 Conway 1999, 34, 41; Doyle 2009, 61.
Caherlehillan, Co. Kerry	Ecclesiastical	69 sherds from two vessels ($2xE_1$, $1xE_5$)	Sheehan 1994:0118; Doyle 2009,60; Kelly 2010, 60.
Castletown, Co. Meath	?	2 sherds from 1 vessel ($1xE_1/E_4$)	Doyle 2009, 60.
Church Island, Co. Kerry	Ecclesiastical	1 sherd from 1 vessel. ($1x/E_1/E_4$)	Doyle 2009, 60.
Clogher, Co. Tyrone.	Multivallate rath	47 sherds from 11 vessels ($5xE_1/E_4$, $1xE_1/E_3/E_4$, $1xE_2$, $1xE_5$, $1xE_1$, 2xunclassified	Warner 1971:0032; 1973:0033; 1974:0037; 1975:0035; Doyle 2009, 60.
Clonmacnoise, Co. Offaly	Ecclesiastical	5 sherds from 2 vessels ($2xE_3$; $1xE_1/E_4$)	King 1991:0110; Kelly 2009, 344; Doyle 2009, 60.
Collierstown, Co. Meath	Settlement/cemetery	1sherd from 1 vessel (E_3/E_5)	O'Hara 2009b, 90 Doyle 2009, 60.
Colp West, Co. Meath	Enclosure complex	8 sherds from 3 vessels ($2xE_1/E_4$, $1xE_2$)	Doyle 2009, 60; Clarke & Murphy 2001:952
Colp West, Co. Meath	Enclosed cemetery	23 sherds from 4 vessels ($4xE_1$, $1xE_5$)	Gowen 1988:0051; Doyle 2009, 60.
Corbetstown, *Kilpatrick/Killucan*, Co. Westmeath	Ecclesiastical	3 sherds from 1 vessel ($1xE_2$, 2 unclassified)	Swan 1994-95, 20; Doyle 2009, 60.
Cullybackey, *Markstown*, Co. Antrim	Souterrain	One sherd of E ware	McSparron 2001:0014
Dalkey Island, Co. Dublin	Emporium	100 sherds from 26 vessels ($10xE_1/E_4$, $7xE_1/E_3/E_4$, $7xE_1$, $1xE_2$, $2xE_5$, 1 unclassified	Liversage 1968, 165-68; Doyle 2009, 60
Derrynaflan, Co. Tipperary	Ecclesiastical	? Sherds from 1 vessel ($1xE_1$)	Doyle 2009, 60.
Downpatrick: Cathedral Hill, Co. Down	Ecclesiastical	2 sherds from 1 vessel ($1xE_1$? Not classified)	Campbell 2007, xviii; Doyle 2009, 60
Dunnyneill Island, Co. Down	Emporium	5 sherds from 1 vessel ($1xE_1$)	McCormick & Macdonald 2004, 8; McCormick & Macdonald 2010, 52-53; Doyle 2009, 60.
Flemington,	?	2 sherds from 1 vessel ($1xE_1/E_4$)	Bolger 2009, 33;

Townland / *Site Name*	**Site Type**	**Comments**	**Reference**
Co. Dublin			Doyle 2009, 60.
Garranes, Co. Cork	Multivallate rath	7 sherds from 3 vessels ($2xE_1/E_4$; $1xE_1$)	Ó Ríordáin 1942a, 126-27; Doyle 2009, 60.
Garretstown 2, Co. Meath	Enclosure	2 sherds from 2 vessels ($2xE_1/E_4$)	Doyle 2009, 60.
Garryduff (I), Co. Cork	Rath	81 sherds from 21 vessels ($8xE_1/E_4$, $1xE_1/E_3/E_4$, $5xE_2$, $7xE_1$)	O'Kelly 1962, 103-11; Doyle 2009, 60.
Gartree, *Langford Lodge*, Co. Antrim	Rath	3 sherds from 3 vessels ($1xE_2$, $2xE_1/E_3$)	Waterman 1963a, 50; Doyle 2009, 61.
Gracedieu, Co. Dublin	Ecclesiastical	1 sherd from 1 vessel ($1xE_1/E_4$)	Gowen 1988:0016; Doyle 2009, 60; Kelly 2010, 60.
Gransha, Co. Down	Raised rath	16 sherds from 1 vessel ($1xE_1$)	Lynn 1985, 88; Doyle 2009, 60.
Iniscealtra, Co. Clare	Ecclesiastical	2 sherds from 1 vessel ($1xE_2$?)	Campbell 2007, xviii; Comber 2008, 168; Doyle 2009, 60.
Kedrah, Co. Tipperary	?	1 sherd from 1 vessel ($1xE_1$)	Campbell 2007, xviii; Doyle 2009, 60.
Knowth, Co. Meath	Royal settlement	2 sherds from 2 vessels ($2xE_1/E_4$)	Doyle 2009, 60.
Knowth, Site M, Co. Meath	Enclosure	1 sherd from 1 vessel ($1xE_5$ lid)	Doyle 2009, 60.
Lackenavorna, *Killederdadrum*, Co. Tipperary	Ecclesiastical	1 sherd from 1 vessel ($1xE_2$)	Manning 1984, 252; Doyle 2009, 60.
Lagore, Co. Meath	Crannog	18 sherds from 12 vessels ($6xE_1/E_4$, $2xE_1$, $3xE_2$, $1xE_3$)	Hencken 1950, 124; Doyle 2009, 61.
Lisduggan North, Co. Cork	Rath	2 sherds from 2 vessels ($2xE_1/E_4$)	Twohig 1990, 19; Doyle 2009, 61.
Lisleagh (1), Co. Cork	Multivallate rath	3 sherds from 1 vessel ($1xE_1/E_4$)	Youngs *et al.* 1984, 214; Campbell 2007, xix; Doyle 2009, 61.
Lisnaskea, *Lisdoo Fort*, Co. Fermanagh	Multivallate rath	1 sherd from 1 vessel ($1xE_1/E_4$)	Brannon 1981-82, 57; Doyle 2009, 61.
Lough Faughan, Ballyrolly, Co. Down	Crannog	4 sherds from 2 vessels ($2xE_1/E_4$)	Collins 1955, 55; Doyle 2009, 61.
Luggacurren, Co. Laois	?	1 sherd from 1 vessel ($1xE_1/E_4$)	N.M.I. File (1A/737/48); Doyle 2009, 61.
Lusk, Co. Dublin	Ecclesiastical	18 sherds from 2 vessels ($2/3xE_1/E_4$)	Doyle 2009, 61; Campbell 2007, xix; Kelly 2010, 60.
Marshes Upper 3, Co. Louth	Souterrain and enclosure	3 sherds from 3 vessels ($1xE_1/E_4$, $1xE_2$, $1xE_1/E_3/E_4$)	Gowen 1992, 71, 105; Doyle 2009, 61.
Moynagh Lough, Brittas, Co. Meath	Crannog	8 sherds from 1 vessel ($1xE_1/E_4$)	Bradley 1982-3, 24; Bradley 1995:0228; Doyle 2009, 61.
Nendrum, Co. Down	Ecclesiastical	Sherds of E_1 ware	Lawlor 1925, 160.
Ninch, Co. Meath	Settlement/cemetery	18 sherds from 7 vessels ($1xE_2$, $2/3xE_1/E_4$, $1xE_3$, $2xE_5$, $1xE_6$?)	Eogan & Reid 2000:0760 McConway 2001:1007; Doyle 2009, 61.
Painestown, Co. Meath	?	3 sherds from 2 vessels ($2xE_1/E_4$)	Doyle 2009, 61.
Raheens (2), Co. Cork	Rath	Sherds of E ware	Lennon 1994, 47-65.
Rathgurreen, Co. Galway	Rath	1 sherd from 1 vessel ($1xE_1/E_4$)	Comber 2002, 173; Doyle 2009, 61.
Rathmullan, Co. Down	Raised rath	3 sherds from 2 vessels ($1xE_1/E_3/E_4$, $1xE_1/E_4$)	Lynn 1981-1982, 119; Doyle 2009, 61.
Ratoath, Co. Meath	Settlement/cemetery	2 sherds from 1 vessel ($E_1/E_2/E_3/E_4$)	Wallace 2004:1324; Wallace 2010; Doyle 2009, 61.
Raystown,	Settlement/cemetery	2 sherds ($1xE_1/E_4$)	Doyle 2009, 61.

Townland / *Site Name*	Site Type	Comments	Reference
Co. Meath			
Reask, Co. Kerry	Ecclesiastical	1 sherd from 1 vessel ($E_1/E_3/E_4$)	Fanning 1981, 113; Doyle 2009, 61.
Roestown 2, Co. Meath	Enclosure	5 sherds from 2 vessels ($2xE_1/E_4$)	O'Hara 2009a, 65; Doyle 2009, 61.
Rosepark, Balrothery, Co. Dublin	Enclosure	Ten sherds from 4 vessels ($2xE_1/E_4$, $1xE_2$, $1xE_5$)	Baker & Swan 1999:0162; Carroll 2000:0209; Carroll 2001:334; Doyle 2009, 112-15
Scrabo, Co. Down	Hillfort	8 sherds from 2 vessels ($1xE_4$, $1xE_1$)	Jope 1966, 147, 178; Doyle 2009, 61.
Slievegrane Lower, Co. Down	Souterrain	?	Campbell 2007, xx.
Spittle Ballee, Co. Down	Rath	1 sherd from 1 vessel ($1xE_2$)	Waterman 1958a, 63; Doyle 2009, 61.
St Annes, Randalstown, Co. Meath	Ecclesiastical	5 sherds from 4 vessels ($1xE_1/E_4$, $1xE_1/E_3/E_4$, $2xE_1$)	Kelly 1975:0032; Doyle 2009, 61.
Summerhill Demesne, Co. Meath	?	4 sherds from 2 vessels ($2xE_1$)	Doyle 2009, 61.
Teeshan, *Loughmagarry*, Co. Antrim	Crannog	16 sherds from 1 vessel ($1xE_1$)	Campbell 2007, 36; Doyle 2009, 61.
Townparks, Co. Cavan	?	1 sherd from 1 vessel ($1xE_4$) Possible everted rim ware!	Doyle 2009, 61.

Table 8.5: Sherds of African Red Slip Ware (ARSW), D Ware (DSPA), and F-ware found in Ireland

Townland / Site Name	Site Type	Comments	Reference
Ballykeoghan, Co. Kilkenny	Pit	Sherd broadly similar to D ware	Wren 2006:0993; Doyle 2009, 23.
Cabinteely, *Mount Offaly*, Co. Dublin	Settlement/cemetery	Sherds of DSPA	Conway 1998:0124; Doyle 2009, 55; Kelly 2010, 48.
Clogher, Co. Tyrone.	Multivallate rath	Probable sherd of D ware	Campbell 2007, 31; Doyle 2009, 23.
Corbetstown, *Kilpatrick/Killucan* Co. Westmeath	Ecclesiastical	Three sherds of F ware	Swan 1980-84:0199
Kilree, Co. Kilkenny	Enclosure	1 sherd from a probable ARSW fineware bowl	Doyle 2009, 56.
Ninch, Co. Meath	Settlement/cemetery	Sherd from a mortarium or mixing bowl	McConway 2001:1007; Doyle 2009, 23-24, 55.
Smithstown, Co. Meath	Rath	One sherd of F ware	Gowen 1988:0055.

Table 8.6: ***Imported Glass found in Ireland***

Townland / Site Name	Site Type	Comments	Reference
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	Sherd of glass beaker.	Gaskell-Brown & Harper 1984, 135.
Ballinderry (II), Ballynahinch, Co. Offaly	Crannog	Sherds from two glass vessels.	Hencken 1942, 58; Bourke 1994, 195.
Ballycatteen, Co. Cork	Multivallate rath	Pale blue vessel glass	Ó Ríordáin & Hartnett 1943, 25-26.
Clogher, Co. Tyrone	Multivallate rath	Large quantities of glass sherds – 15 vessels identified.	Bourke 1994, 196-99.
Corraneary, *Kilbride*, Co. Cavan	Ecclesiastical	Sherds of two glass vessels	Bourke 1994, 199.
Dalkey Island, Co. Dublin	Emporium	Sherds from four glass bowls	Liversage 1966, 193
Dalkey Island, Co. Dublin	Emporium	Sherds from three glass cone-beakers	Liversage 1966, 193
Dooey, Co. Donegal	Sand hills enclosure	Sherds of two glass vessels.	Ó Ríordáin & Rynne 1961, 61-64;

			Bourke 1994, 201.
Drumcrittan, Co. Fermanagh	Crannog	Fragment of deep blue glass (lost)	Campbell 2007, 61
Dungarvan Castle, Co. Waterford	Re-used castle site	?	Campbell 2007, xviii.
Dunnyneill Island, Co. Down	Emporium	Base of claw-beaker	Campbell 2007, 60.
Dunnyneill Island, Co. Down	Emporium	Sherds of vessel glass.	McCormick & Macdonald 2004, 8; McCormick & Macdonald 2010, 53.
Garranes, Co. Cork	Multivallate rath	Three pieces of millefiori.	Ó Ríordáin 1942a, 118.
Garranes, Co. Cork	Multivallate rath	Fragments of five glass vessels.	Ó Ríordáin 1942a, 120.
Garryduff (I), Co. Cork	Rath	Sherds of four glass vessels.	O'Kelly 1962, 68-70
Lagore, Co. Meath	Crannog	Rods of millefiori	Hencken 1950, 128.
Lagore, Co. Meath	Crannog	Sherds from five glass vessels.	Hencken 1950, 128; Bourke 1994, 204.
Larrybane, Co. Antrim	Promontory fort	Imported glass armlet	Childe 1936, 194-95.
Moynagh Lough, Brittas, Co. Meath	Crannog	Two complete Merovingian glass phials.	Bourke 1994, 205.
Moynagh Lough, Brittas, Co. Meath	Crannog	Two sherds of vessel glass	Bradley 1997, 60.
Mullaroe, Co. Sligo	Souterrain	Complete glass phial	Harden 1956, 154; Bourke 1994, 205.
Rathintaun, Co. Sligo	?	Base-sherd of small glass phial	Bourke 1994, 206.
Reask, Co. Kerry	Ecclesiastical	Rimsherd of glass bowl.	Fanning 1981, 121; Bourke 1994, 206.
St Anne's, Randalstown, Co. Meath	Ecclesiastical	Sherd of glass cone-beaker	Kelly 1975:0032; Kelly 1976:0020; Bourke 1994, 206.
St Anne's, Randalstown, Co. Meath	Ecclesiastical	One Saxon glass bead	Kelly 1976:0020; Bourke 1994, 206.

Table 8:7: Imported English Pottery – 11th/12th Century.

Townland/ Site Name	**Site Type**	**Comments**	**Reference**
CORK: 5 Barrack Street, Cork	Hiberno-Scandinavian Urban	Sherds of medieval pottery – late-11th/early-12th C.	Lane 2000:0122
Cove Street, Cork	Hiberno-Scandinavian Urban	Five sherds of Ham Green Glazed Ware	McCutcheon 1996c, 108-09.
Kyrl's Quay, Cork	Hiberno-Scandinavian Urban	41 sherds of South-East Wiltshire-Ware	McCutcheon 1996b, 44.
Kyrl's Quay, Cork	Hiberno-Scandinavian Urban	Two sherds of Ham Green Cooking-Ware	McCutcheon 1996b, 44.
Main Street South, Cork	Hiberno-Scandinavian Urban	Sherds of Ham Green Cooking Ware	Ní Loingsigh 2003:0225
North Gate, Cork	Hiberno-Scandinavian Urban	One sherd Ham Green Cooking-Ware	McCutcheon 1997, 77.
North Gate, Cork	Hiberno-Scandinavian Urban	Two sherds Ham Green Glazed Ware	McCutcheon 1997, 77.
Skiddy's Castle, Cork	Hiberno-Scandinavian Urban	34 sherds Bath Fabric 'A'-ware	Gahan *et al*. 1997, 110.
Skiddy's Castle, Cork	Hiberno-Scandinavian Urban	99 sherds South-East Wiltshire Ware	Gahan *et al*. 1997, 110.
Skiddy's Castle, Cork	Hiberno-Scandinavian Urban	Eleven sherds Coarse London Ware	Gahan *et al*. 1997, 110.
Skiddy's Castle, Cork	Hiberno-Scandinavian Urban	27 sherds Dyfed gravel-tempered ware	Gahan *et al*. 1997, 110.
Skiddy's Castle,	Hiberno-Scandinavian	299 sherds Ham Green 'A'-Ware	Gahan *et al*. 1997, 110.

Cork	Urban		
Skiddy's Castle, Cork	Hiberno-Scandinavian Urban	919 sherds Ham Green Cooking Ware	Gahan *et al*. 1997, 110.
South Main Street, Cork	Hiberno-Scandinavian Urban	Ham Green Ware	Twohig 1975:0010.
Tobin Street, Cork	Hiberno-Scandinavian Urban	Ham Green Ware	Papazian 1985, 213.
Tuckey Street, Cork	Hiberno-Scandinavian Urban	Ham Green Ware	Hurley & Power 1981, 9-17.
DUBLIN: Christchurch Place, Dublin	Hiberno-Scandinavian Urban	Sherds of Chester-ware	Hurst 1988, 242.
Christchurch Place, Dublin	Hiberno-Scandinavian Urban	Sherds of Saxo-Norman Glazed-ware (other)	Hurst 1988, 242.
Dublin Castle, Dublin	Hiberno-Scandinavian Urban	Sherds of Barlip-Ware	Hurst 1988, 242.
Dublin Castle, Dublin	Hiberno-Scandinavian Urban	Sherds of Chester-Ware	Hurst 1988, 242.
Essex Street West, Dublin	Hiberno-Scandinavian Urban	Five sherds of South-East Wiltshire-Ware	McCutcheon 1995b, 42
Essex Street West, Dublin	Hiberno-Scandinavian Urban	Nine sherds of Ham Green 'A' -Ware	McCutcheon 1995b, 42
Essex Street West, Dublin	Hiberno-Scandinavian Urban	Eleven sherds of Ham Green Cooking-Ware	McCutcheon 1995b, 42
High Street Dublin	Hiberno-Scandinavian Urban	Ham Green Ware jug	Ó Ríordáin 1972:0014
Isolde's Tower Dublin	Hiberno-Scandinavian Urban	Thirteen sherds of Ham Green Ware	McCutcheon 1994, 53
Isolde's Tower Dublin	Hiberno-Scandinavian Urban	One sherd of Ham Green Cooking-Ware	McCutcheon 1994, 53
Patrick Street, Dublin	Hiberno-Scandinavian Urban	Thirteen vessels (minimum number)- Ham Green Glazed	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin, Co. Dublin	Hiberno-Scandinavian Urban	Three vessels (minimum number)- Ham Green Cooking-Ware	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin	Hiberno-Scandinavian Urban	Two vessels (minimum number)- Wiltshire-Ware	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)- Redcliffe-Ware	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)- Chester-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Three vessels (minimum number)- Ham Green Glazed	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)- Ham Green Cooking-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)- Wiltshire-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)- Redcliffe-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)- Chester-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of South-East Wiltshire-ware	Hurst 1988, 242.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of Chester-ware	Hurst 1988, 242.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of Saxo-Norman Glazed-ware (other)	Hurst 1988, 242.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of Stamford-ware	Hurst 1988, 242.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	228 sherds South-East Wiltshire Ware	McCutcheon 2006, 40.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	307 sherds Ham Green A Ware	McCutcheon 2006, 40.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	437 sherds Ham Green Cooking Ware	McCutcheon 2006, 40.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	Ten sherds Coarse London Ware	McCutcheon 2006, 40.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	One sherd Malvern Chase Ware	McCutcheon 2006, 40.
Wood Quay,	Hiberno-Scandinavian	One sherd Stamford Ware	McCutcheon 2006, 40.

Dublin	Urban		
LIMERICK: St Saviour's Limerick	Hiberno-Scandinavian Urban	Four sherds of Ham Green Glazed Ware	McCutcheon 1996a, 66
WATERFORD: Lady Lane, Waterford	Hiberno-Scandinavian Urban	Sherds of South-East Wiltshire-ware	Hurst 1988, 242.
Waterford	Hiberno-Scandinavian Urban	898 sherds Cornish Ware	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	64 sherds Dyfed gravel-tempered Ware	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	48 sherds of Stamford-ware	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	165 sherds Bath Fabric 'A'- ware	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	863 sherds Proto-Ham Green Ware	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	1003 sherds South-East Wiltshire Ware	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	19119 sherds Ham Green Ware (A & B)	Gahan & McCutcheon 1997a, 288.
Waterford	Hiberno-Scandinavian Urban	16 sherds Coarse London Ware	Gahan & McCutcheon 1997a, 288.

Table 8:8: Imported French Pottery – 11th/12th C.

Townland/ Site Name	**Site Type**	**Comments**	**Reference**
CORK: Kyrl's Quay, Cork	Hiberno-Scandinavian Urban	Thirteen sherds of Normandy Gritty-Ware	McCutcheon 1996b, 44
Kyrl's Quay, Cork	Hiberno-Scandinavian Urban	Nine sherds of Normandy Smooth-Ware	McCutcheon 1996b, 44
DUBLIN: Christchurch Place, Dublin	Hiberno-Scandinavian Urban	Sherds of Andenne-ware	Ó Ríordáin 1974:0014
Christchurch Place, Dublin	Hiberno-Scandinavian Urban	Sherds of northern French-ware	Ó Ríordáin 1974:0014
Dublin Castle, Dublin	Hiberno-Scandinavian Urban	Sherds of Normandy Gritty-Ware	Hurst 1988, 242.
Fishamble St II, Dublin	Hiberno-Scandinavian Urban	Sherds of Red Painted-ware	Hurst 1988, 243.
Fishamble St II, Dublin	Hiberno-Scandinavian Urban	Sherds of Andenne-ware	Hurst 1988, 243.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	One vessel (minimum number)-Normandy-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of North France – Fine Grey-ware	Hurst 1988, 242.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of North France- Fine White-ware	Hurst 1988, 242.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of Normandy Gritty -ware	Hurst 1988, 242.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of Red Painted -ware	Hurst 1988, 243.
Winetavern Street, Dublin	Hiberno-Scandinavian Urban	Sherds of Andenne -ware	Hurst 1988, 243.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	Nine sherds Paris-type Ware	McCuthcheon 2006, 88.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	127 sherds Rouen-type Ware	McCuthcheon 2006, 88.
Wood Quay, Dublin	Hiberno-Scandinavian Urban	Sherds of Andenne-ware	Hurst 1988, 243.
HARRISTOWN: Harristown, Co. Louth	Rath	Two sherds of 'French cooking vessel'	Murphy 1994:0181
WATERFORD: Lady Lane, Waterford	Hiberno-Scandinavian Urban	Sherds of North France – Fine Grey-ware	Hurst 1988, 242.
WEXFORD: Water Lane,	Hiberno-Scandinavian Urban	Sherds of Red Painted-ware	Hurst 1988, 243.

Wexford			

Table 8:9: Anglo-Saxon Coins Found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Adare, Co. Limerick	?	About twenty-four coins in total – Anglo-Saxon.	Hall 1973-74, 80.
Cathedral Hill, Armagh, Co. Armagh	?	Two Anglo-Saxon coins - 'Æthelstan'; 'Eadgar'	Hall 1973-74, 76.
Armagh, Co. Armagh	Ecclesiastical	One Anglo-Saxon coin – 'Offa'	Hall 1973-74, 82.
Armagh, Co. Armagh	?	One Anglo-Saxon coin – 'Eadgar'	Hall 1973-74, 82.
Ballitore, Co. Kildare	?	Anglo-Saxon coins – 'Æthelstan'; 'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'	Hall 1973-74, 76.
Ballycastle, Co. Antrim	Megalith	70 coins in total – Anglo-Saxon	Hall 1973-74, 80.
Ballylynan, Co. Laois	?	One Anglo-Saxon coin – 'Harold I'	Hall 1973-74, 80.
Ballywillin, Co. Antrim	Boat Burial	Few Anglo-Saxon coins	Hall 1973-74, 82.
Bawnaughragh, Co. Laois	?	One Anglo-Saxon coin – 'Offa'	Hall 1973-74, 82.
Broad Street, Limerick, Co. Limerick	Hiberno-Scandinavian Urban	Anglo-Saxon coin – 'Cnut'	O'Donovan 1999:0515
Bullock, Co. Dublin	?	Three Anglo-Saxon coins – 'Eadgar'	Hall 1973-74, 77.
Bullock, Co. Dublin	?	65 Anglo-Saxon coins – 'Eadgar'	Hall 1973-74, 77.
Burt, Co. Donegal	?	Eleven Anglo-Saxon – 'Eadgar'	Hall 1973-74, 76.
Castlebellingham, Co. Louth	?	Two Anglo-Saxon coins –'Edward the Elder'	Hall 1973-74, 73.
Clonmacnoise, Co. Offaly	Ecclesiastical Site	Possible Anglo-Saxon coin.	King 1994:0197.
Collinstown, Co. Westmeath	Crannog	One Anglo-Saxon coin – 'Æthelred II'	Kenny 1987, 521.
Cushendall, Co. Antrim	Grave	Two Anglo-Saxon coins – 'Berhtulf' – Archbishop 'Ceolnoth'	Hall 1973-74, 73; Seaby 1959.
Dalkey, Co. Dublin	?	80 Anglo-Saxon coins - 'Æthelstan'; 'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'; 'Edward the Elder'	Hall 1973-74, 77.
Delgany, Co. Wicklow	?	115 Anglo-Saxon coins – 'Eadberht Præn'; 'Cuthred'; 'Baldred'; 'Offa'; 'Coenwulf'; 'Beornwulf'; 'Ecgbeorht' – Archbishops 'Æthilweard'; 'Wulfred'	Hall 1973-74, 71; Dolley & Morrison 1963, 77.
Derrykeighan, Co. Antrim	Ecclesiastical	280 coins in total – Anglo-Saxon - 'Æthelstan'; 'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'.	Hall 1973-74, 78.
Derrymore, Co. Westmeath	?	Eleven coins in total – Anglo-Saxon – 'Æthelred II'	Hall 1973-74, 79.
Drogheda, Co. Louth	?	One Anglo-Saxon coin – 'Æthelstan'	Hall 1973-74, 82.
DUBLIN: 26-29 Castle Street, Dublin	Hiberno-Scandinavian Urban	76 Anglo-Saxon coins – 'Ethelred II'	Byrne 1993:0057
26-29 Castle Street, Dublin	Hiberno-Scandinavian Urban	237 Anglo-Saxon coins – 'Ethelred II'	Byrne 1993:0057
Christchurch Place, Dublin	Hiberno-Scandinavian Urban	Two Anglo-Saxon coins	Ó Ríordáin 1975:0015.
Christchurch Place, Dublin	Hiberno-Scandinavian Urban	Two Anglo-Saxon coins – 'Æthelred'; 'Cnut'	Ó Ríordáin 1973:0017.
Fishamble Street I,	Hiberno-Scandinavian	One Anglo-Saxon coin – 10th C.	Ó Ríordáin 1976:0019

Townland/Site Name	Site Type	Comments	Reference
Dublin	Urban		
Fishamble Street II, Dublin	Hiberno-Scandinavian Urban	One Anglo-Saxon coin – 'Eadgar'	Wallace 1977-79:0037
High Street, Dublin	Hiberno-Scandinavian Urban	Anglo-Saxon coin – 'Anlaf'	Ó Ríordáin 1972:0014
Werburgh Street, Dublin	Hiberno-Scandinavian Urban	125 Anglo-Saxon coins – late-10th century.	Hayden 1994:0087
Dublin, Co. Dublin	?	One Anglo-Saxon coin – 'Eadgar'	Hall 1973-74, 82.
Rock of Dunamase, Dunamase, Co. Laois	Cashel? Re-built as castle.	One Anglo-Saxon coin – 9th C.	Hodkinson 1995:0176
Dunbrody, Co. Wexford	?	1600 coins in total – Anglo-Saxon – 'Edward the Confessor'; 'Cnut'; 'Harold I'; 'Harthacnut'	Hall 1973-74, 80.
Durrow, Co. Offaly	Ecclesiastical	Ten Anglo-Saxon coins - 'Edward the Elder'; 'Æthelstan'.	Hall 1973-74, 74.
Dysert, Lough Ennell, Co. Westmeath	Crannog	One Anglo-Saxon coin – 'Alfred'	Kenny 1987, 521
Fennor, Co. Meath	Megalith	Two Anglo-Saxon coins - 'Æthelstan'; 'Eadmund'	Hall 1973-74, 75.
Fontstown, Co. Offaly	?	One Anglo-Saxon coin – 'Æthelred II'	Hall 1973-74, 82.
Fourknocks, Co. Meath	?	Twenty-nine coins in total – Anglo-Saxon - 'Æthelred II'	Hall 1973-74, 80.
Glasnevin, Co. Dublin	?	Two Anglo-Saxon coins – 'Æthelstan'	Hall 1973-74, 73.
Glendalough, Co. Wicklow	Ecclesiastical	Forty-nine Anglo-Saxon coins - 'Edward the Elder'; 'Æthelstan'; 'Eadmund'	Hall 1973-74, 74.
Glendalough, Co. Wicklow	Ecclesiastical	Anglo-Saxon coins -'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'.	Hall 1973-74, 78.
Kildare, Co. Kildare	?	Thirty-four Anglo-Saxon coins - 'Æthelred II'	Hall 1973-74, 79.
Kilkenny, Co. Kilkenny	?	Large quantities of coins – Anglo-Saxon – 'Cnut'	Hall 1973-74, 80.
Killincoole, Co. Louth	?	Seven Anglo-Saxon coins - 'Æthelstan'; 'Eadwig'; 'Eadgar'; 'Eadred'	Hall 1973-74, 77.
Killyon Manor, Co. Meath	?	88 coins in total – Anglo-Saxon coins – 'Æthelstan'; 'Eadmund'; 'Edward the Elder; 'Eadred'	Hall 1973-74, 75.
Knockmaon, Co. Waterford	?	Fourteen coins in total – Anglo-Saxon – 'Eadgar'	Hall 1973-74, 79.
Knowth, Co. Meath	Raised Rath – re-used passage tomb.	Two Anglo-Saxon coins – 'Æthelstan'; 'Eadred'.	Eogan 1971:0028; Hall 1973-74, 74.
Lagore, Co. Meath	Crannog	One Anglo-Saxon coin – 'Edward the Elder'	Hencken 1950, 181; Hall 1973-74, 82.
Leggagh, Co. Meath	?	Ten coins in total – Anglo-Saxon – 'Edward the Elder'	Hall 1973-74, 73.
Londonderry, Co. Londonderry	?	One Anglo-Saxon coin – 'Offa'	Hall 1973-74, 82.
Lough Lene, Co. Westmeath	?	Twenty eight coins in total – Anglo-Saxon- 'Æthelstan'; 'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'	Hall 1973-74, 76.
Macroom, Co. Cork	?	Seventeen Anglo-Saxon coins - 'Æthelstan'; 'Eadmund'; 'Edward the Elder; 'Eadred'	Hall 1973-74, 75.
Marl Valley, Co. Westmeath	?	120-150 Anglo-Saxon coins – 'Eadred'; 'Æthelstan II'	Hall 1973-74, 79.
Marshes Upper, Co. Louth	Unenclosed habitation site	Seven Anglo-Saxon coins – 'Æthelred II'	Gosling 1980-84:0137; Kenny 1987, 521.
Dunmore Cave Mohil, Co. Kilkenny	Cave	Fourteen Anglo-Saxon silver pennies – 'Æthelstan'; 'Edward the Elder'	Wallace & Ó Floinn 2002, 223.
Dunmore Cave Mohil,	Cave	Ten coins in total -Anglo-Saxon coins – 'Æthelstan'; 'Edward the	Hall 1973-74, 73

Townland/Site Name	Site Type	Comments	Reference
Co. Kilkenny		Elder'	
Monasterboice, Co. Louth	Ecclesiastical	Three Anglo-Saxon coins - 'Æthelstan'; 'Eadmund'; 'Eadred'	Hall 1973-74, 75.
Mullingar, Co. Westmeath	?	Three Anglo-Saxon coins	Hall 1973-74, 79.
Mungret, Co. Limerick	Ecclesiastical	Nine coins in total – Anglo-Saxon coins – 'Æthelstan'; 'Edward the Elder; 'Eadred'	Hall 1973-74, 75.
Newtownlow, Co. Westmeath	Crannog	Six Anglo-Saxon coins – 'Æthelstan'; 'Eadmund'; 'Eadred'	Bourke 1985:0058; Kenny 1984, 37.
Oldcastle, Co. Meath	Isolated souterrain	Twelve coins in total – Anglo-Saxon – 'Eadmund'; 'Eadred'	Hall 1973-74, 75-76.
Rahan (I), Co. Offaly	?	Hoard of Anglo-Saxon coins	Hall 1973-74, 77.
Rahan (II), Co. Offaly	?	Hoard of Anglo-Saxon coins	Hall 1973-74, 77.
Rathbarry, Co. Cork	Souterrain	Hoard of Anglo-Saxon coins - 'Æthelstan'; 'Eadmund'	Hall 1973-74, 74.
Rathcroghan, Co. Roscommon	Multivallate rath	One Anglo-Saxon coin – 'Edward the Elder'	Hall 1973-74, 82.
Smarmore, Co. Louth	?	72 coins in total – Anglo-Saxon - 'Æthelstan'; 'Eadgar'; 'Eadred'; 'Edward the Elder'; 'Eadmund'; 'Eadwig';	Hall 1973-74, 77.
Unlocated, Co. Dublin	?	Twenty-nine Anglo-Saxon coins – 'Edward the Elder'; 'Æthelstan'.	Hall 1973-74, 73.
Unlocated, Co. Kildare	?	Ten Anglo-Saxon coins – 'Edward the Elder'; 'Æthelstan'.	Hall 1973-74, 74.
Unlocated, Co. Kilkenny	?	60 Anglo-Saxon coins – 'Eadgar'	Hall 1973-74, 78.
Unlocated, Co. Meath	?	Two Anglo-Saxon coins – 'Eadred'; 'Eadgar'	Hall 1973-74, 77.
Unlocated, Co. Tipperary	?	Nineteen Anglo-Saxon coins - 'Edward the Elder'; 'Æthelstan'; 'Eadmund'	Hall 1973-74, 74.
Unlocated, Co. Wexford	?	Three English coins – 'Henry II'	Hall 1973-74, 82.
Unlocated	?	Seven Anglo-Saxon coins – 'Burgred'; 'Æthelred I'; 'Alfred'	Hall 1973-74, 73.
Unlocated	?	Hoard of Anglo-Saxon coins - 'Æthelstan'	Hall 1973-74, 74.
Unlocated	?	Forty-eight coins in total – Anglo-Saxon coins - 'Æthelstan'; 'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'	Hall 1973-74, 76.
Unlocated	?	Five Anglo-Saxon coins – 'Eadgar'; 'Edward the Martyr'	Hall 1973-74, 78.
Unlocated	?	Thirty Anglo-Saxon coins – 'Eadgar'; 'Æthelstan II'	Hall 1973-74, 78.
Unlocated	?	One Anglo-Saxon coin – 'Ceolwulf II'	Hall 1973-74, 82.
Unlocated	?	One Anglo-Saxon coin – 'Harthacnut'	Hall 1973-74, 82.

Table 8:10: 'Viking'/Norse Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Armagh, Co. Armagh	?	One Norse (Jorvik) coin – 'Anlaf Guthfrithsson'	Hall 1973-74, 76.
Ballitore, Co. Kildare	?	Norse coins (Jorvik) - 'Regnald Guthfrithsson'; 'Anlaf Sihtricsson'	Hall 1973-74, 76.
Cork, Co. Cork	?	One Norse (Jorvik) – 'Anlaf Guthfrithsson'	Hall 1973-74, 82.
Cork, Co. Cork	?	One Norse (Jorvik) – 'Eric'	Hall 1973-74, 82.
Derrykeighan, Co. Antrim	Ecclesiastical	280 coins in total – Norse (Jorvik) – 'Eric'; 'Regnald Guthfrithsson'	Hall 1973-74, 78.

Drogheda, Co. Louth	?	Hoard of Norse coins (lost)	Hall 1973-74, 73.
Dunmore Cave Mohil, Co. Kilkenny	Cave	Ten coins in total – Norse coins - Jorvik	Hall 1973-74, 73
Dunmore Cave Mohil, Co. Kilkenny	Cave	Ten coins in total – Norse coins (Lincoln)	Hall 1973-74, 73
Durrow, Co. Offaly	Ecclesiastical	One Norse coin (Jorvik) – 'Anlaf Guthfrithsson'	Hall 1973-74, 74.
Dysert, Lough Ennell, Co. Westmeath	?	Sixteen Norse coins (Jorvik)	Kenny 1987, 521
Geashill, Co. Offaly	?	Five Norse coins from Jorvik	Hall 1973-74, 73.
Glasnevin, Co. Dublin	?	Four or five Norse coins – Northumbria	Hall 1973-74, 73.
Glasnevin, Co. Dublin	?	One Norse coin – East Anglia	Hall 1973-74, 73.
Killyon Manor, Co. Meath	?	88 coins in total – Norse coins (Jorvik) – 'Anlaf Guthfrithsson'; 'Anlaf Sihtricsson'; 'Eric'	Hall 1973-74, 75.
Leggagh, Co. Meath	?	Ten coins in total – Norse – East Anglia	Hall 1973-74, 73.
Lough Lene, Co. Westmeath	?	Twenty eight coins in total – Norse (Jorvik) - 'Anlaf Guthfrithsson'; 'Eric'; 'Regnald Guthfrithsson'	Hall 1973-74, 76.
Mungret, Co. Limerick	Ecclesiastical	Nine coins in total – Norse coins (Jorvik) – 'Regnald II Guthfrithsson'	Hall 1973-74, 75.
Oldcastle, Co. Meath	Isolated souterrain	Twelve coins in total – Norse (Jorvik) – 'Anlaf Guthfrithsson'.	Hall 1973-74, 75-76.
Smarmore, Co. Louth	?	72 coins in total – Norse (Jorvik) – 'Eric'	Hall 1973-74, 77.
St. Fechin's, High Island, Co. Galway	Ecclesiastical	Norse coin – 'Harald Hardrada'	Scally 1999:0305
Unlocated	?	Forty-eight coins in total – Norse (Jorvik) - 'Anlaf Guthfrithsson'.	Hall 1973-74, 76.
Unlocated, Co. Dublin	?	One Norse (Jorvik)	Hall 1973-74, 73.

Table 8:11: Hiberno-Scandinavian Coins found in Ireland

Townland / *Site Name*	**Site Type**	**Comments**	**Reference**
Adare, Co. Limerick	?	About twenty-four coins in total – *Hiberno-Scandinavian*.	Hall 1973-74, 80.
Ardagh, Co. Longford	?	One *Hiberno-Scandinavian* coin	Hall 1973-74, 82.
Armagh: Armagh City, Co. Armagh	Ecclesiastical	Three *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Armagh: Cathedral Hill, Co. Armagh	Ecclesiastical	*Hiberno-Scandinavian* coin – 'Sitric III'	Heslip 1984, 134.
Ballycastle, Co. Antrim	Megalith	70 coins in total – *Hiberno-Scandinavian*	Hall 1973-74, 80.
Ballylynan, Co. Laois	?	Hoard of *Hiberno-Scandinavian* coins.	Hall 1973-74, 80.
Baltinglass, Co. Wicklow	?	84 *Hiberno-Scandinavian* coins	Hall 1973-74, 80-81.
Beal Boru, Ballyvally, Co. Cork	Rath	Two *Hiberno-Scandinavian* coins	Dolley 1962, 18-27; Hall 1973-74, 82.
Castlelyons, Co. Cork	?	Several hundred *Hiberno-Scandinavian* coins	Hall 1973-74, 82.
Cathedral Hill, Downpatrick Demesne, Co. Down	Ecclesiastical	Two *Hiberno-Scandinavian* coins	Brannon 1988c, 6-7.

Dublin: Christchurch Place	Hiberno-Scandinavian Urban	Fourteen *Hiberno-Scandinavian* coins	Ó Ríordáin 1973:0017
Dublin: Christchurch Place	Hiberno-Scandinavian Urban	One *Hiberno-Scandinavian* coin – 'Sihtric III'	Ó Ríordáin 1974:0014
Dublin: Christchurch Place	Ecclesiastical	Seven *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Dublin: Fishamble Street (II)	Hiberno-Scandinavian Urban	Two *Hiberno-Scandinavian* coins	Wallace 1977-79:0037
Dublin: High Street	Hiberno-Scandinavian Urban	*Hiberno-Scandinavian* coins	Ó Ríordáin 1972:0014
Clondalkin, Co. Dublin	?	*Hiberno-Scandinavian* – 'Sihtric III'	Hall 1973-74, 79.
Clondalkin, Co. Dublin	?	Hoard of *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Clonmacnoise, Co. Offaly	Ecclesiastical	*Hiberno-Scandinavian* coins.	King 1997:0448; King 1998:0548.
Clonmacnoise, Co. Offaly	Ecclesiastical	*Hiberno-Scandinavian* coin hoard	Ó Floinn 1977-79:0063
Collinstown, Co. Westmeath	?	Five *Hiberno-Scandinavian* coins – 'Sihtric III'	Kenny 1987, 521.
Derrymore, Co. Westmeath	?	Eleven coins in total – *Hiberno-Scandinavian* – 'Sihtric III'	Hall 1973-74, 79.
Donaghenry, Co. Tyrone	?	Hoard of *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Dunamase, Co. Laois	?	Several hundred *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Dunbrody, Co. Wexford	?	1600 coins in total – *Hiberno-Scandinavian*	Hall 1973-74, 80.
Dunmore Cave, Mohil, Co. Kilkenny	Cave	Nine *Hiberno-Scandinavian* coins – c. A.D. 928	Drew & Huddart 1980, 17.
Fermoy, Co. Cork	?	One *Hiberno-Scandinavian* coin	Hall 1973-74, 82.
Ferrystown, Gortgole, Co. Antrim	River dredging	Fragment of *Hiberno-Scandinavian* ring money	Bourke 1995:0005
Fourknocks, Co. Meath	Megalith	Twenty-nine coins in total – *Hiberno-Scandinavian* – 'Sihtric III'	Hall 1973-74, 80.
Glendalough, Co. Wicklow	Ecclesiastical	Hoard of *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Kilcullen, Co. Kildare	?	Hoard of *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Kildare, Co. Kildare	?	Six *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Kilkenny, Co. Kilkenny	?	Large quantities of coins – *Hiberno-Scandinavian*	Hall 1973-74, 80.
Kilmainham, Co. Dublin	?	Hoard of *Hiberno-Scandinavian* coins	Hall 1973-74, 82.
Knockmaon, Co. Waterford	?	Fourteen coins in total – *Hiberno-Scandinavian* – 'Sihtric III'	Hall 1973-74, 79.
Limerick, Co. Limerick	?	108 *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Marshes Upper, Co. Louth	Unenclosed habitation site	One *Hiberno-Scandinavian* coin – 'Sihtric III'	Kenny 1987, 521.
Mullingar, Co. Westmeath	?	Fourteen *Hiberno-Scandinavian* coins	Hall 1973-74, 79.
Outlack, Co. Armagh	?	Twelve *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Rathlin Island, Co. Antrim	?	Seven/eight *Hiberno-Scandinavian* coins	Hall 1973-74, 80.
Scrabo Hill, Co. Down	Hill fort	100+ *Hiberno-Scandinavian* coins	Hall 1973-74, 81.
Shandon, Co. Waterford	Enclosure	Fragment of *Hiberno-Scandinavian* coin – 11th C.	Elder 2002:1790
St Brendan's, Ardfert, Co. Kerry	Ecclesiastical	*Hiberno-Scandinavian* coin – 'Sitric III'	Moore 2009, 57.
Tonyowen,	?	Three *Hiberno-Scandinavian*	Kenny 1987, 521.

Co. Westmeath		coins – c. A.D. 1040	
Unlocated	?	One *Hiberno-Scandinavian* coin	Hall 1973-74, 82.
Unlocated, Co. Londonderry	?	One *Hiberno-Scandinavian* coin – 'Sihtric III'	Hall 1973-74, 82.
Unlocated, Co. Wexford	?	Three *Hiberno-Scandinavian* coins	Hall 1973-74, 82.

Table 8:12: Continental European Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Delgany, Co. Wicklow	?	Papal coin – 'Leo III'	Hall 1973-74, 71; Dolley & Morrison 1963, 77.
Derrykeighan, Co. Antrim	Ecclesiastical	280 coins in total – Carolingian – 'Peppin II'	Hall 1973-74, 78.
Dysert, Lough Ennell, Co. Westmeath	?	Two German? coins – late-9th C.	Kenny 1987, 521
Knockmaon, Co. Waterford	?	Fourteen coins in total – sub-Carolingian – 'Louis V'; 'Charles the Simple'	Hall 1973-74, 79.
Lough Lene, Co. Westmeath	?	Twenty eight coins in total – Carolingian – 'Louis the Pious'; 'Charles the Bald'.	Hall 1973-74, 76.
Maryborough, Co. Laois	?	One Frankish coin – early-7th C.	Hall 1973-74, 82.
Mullaghboden, Coghlanstown West, Co. Kildare	?	Eleven Carolingian coins – 'Louis the Pious'; 'Pippin I/II'; 'Charles the Bald'	Hall 1973-74, 71; Dolley & Morrison 1963, 78.
St Begnet's, Dalkey Island, Co. Dublin	Ecclesiastical	Norman coin – 11th C.	Liversage 1968, 179-81.
Trim, Co. Meath	?	One Frankish coin – early-7th C.	Hall 1973-74, 82.

Table 8:13: Arabic/Kufic Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Carrowreilly, Co. Sligo	Rath	Two quarters of Kufic (Tashkent) coin – 'Caliph Al-Mutadid' (A.D. 892-907)	Kenny 1991b, 170-73.
Drogheda, Co. Louth	?	Hoard of Kufic coins (lost)	Hall 1973-74, 73.
Dunmore Cave, Mohil, Co. Kilkenny	Cave	Ten coins in total – Kufic (Armenia) – 'Caliph Al-Mu'tamid'	Hall 1973-74, 73
Dysert, Lough Ennell, Co. Westmeath	?	Six Kufic coins – Abbasid dynasty	Kenny 1987, 521
Dysert, Lough Ennell, Co. Westmeath	?	Eight Kufic coins – Samanid dynasty	Kenny 1987, 521
Dysert, Lough Ennell, Co. Westmeath	?	Five Kufic coins - unidentified	Kenny 1987, 521
Glasnevin, Co. Dublin	?	Two Kufic *dirhams*.	Hall 1973-74, 73.
Leggagh, Co. Meath	?	Ten coins in total – Kufic (Samarkand) – 'Nasr ben Ahmed II'	Hall 1973-74, 73.
Magheralagan, Co. Down	?	Several Kufic coins (Baghdad) – 'al-Mahdi'	Briggs & Graham-Campbell 1976, 21-22.
Woodstown, Co. Waterford	Longphort	Kufic coin	http://tia.ie/Archaeology/N25WaterfordBypass-Woodstown/
Unlocated, Co. Kildare	?	One Kufic *dirham*.	Hall 1973-74, 74.
Unlocated, Co. Londonderry	?	Hoard of Kufic coins	Hall 1973-74, 82.

Unlocated, Co. Meath	?	One Kufic coin – 'Harun ar-Rashid'	Hall 1973-74, 77.

Table 8:14: Amber material from Ireland

Townland/Site Name	Site Type	Comments	Reference
Ballinderry (II), Ballynahinch, Co. Offaly	Crannog	Fourteen amber beads.	Hencken 1942, 51.
Ballycatteen, Co. Cork	Multivallate rath	One amber bead.	Ó Ríordáin & Hartnett 1943, 27.
Carraig Aille (I), Lough Gur, Co. Limerick	Cashel	Two fragments of amber.	Ó Ríordáin 1949a, 102.
Cherrywood, Co. Dublin	Hiberno-Scandinavian occupation site	One amber bead	Ó Neill 1999:0169
Clonmacnoise, Co. Offaly	Ecclesiastical	?	Comber 2008, 168.
Deer Park Farms, Co. Antrim	Raised rath	Three amber beads	Lynn & McDowell forthcoming
Dooey, Co. Donegal	Sand hills enclosure	Amber settings in locally made bronze	Ó Ríordáin & Rynne 1961, 62.
Dunbell, Co. Kilkenny	Rath	Two amber beads.	Foley 2006, 18.
Dunmisk, Co. Tyrone	Rath/Ecclesiastical	One amber bead	Ivens 1989, 53.
Fishamble Street, Dublin, Co. Dublin	Hiberno-Scandinavian Urban	Four thousand + pieces	Wallace 1987a, 215.
Garranes, Co. Cork	Multivallate rath	Two fragments of amber	Ó Ríordáin 1942,a 121.
Garranes, Co. Cork	Multivallate rath	One amber bead	Ó Ríordáin 1942a, 121.
Garryduff (I), Co. Cork	Rath	One piece of amber.	O'Kelly 1963, 77-78.
Glencull, Co. Tyrone	Rath	Amber hemisphere in decorated bronze disc	Collins 1960a, 78-79.
Gragan West, Co. Clare	Rath	One amber bead	Cotter 1988:0004
Lagore, Co. Meath	Crannog	One amber bead	Hencken 1950, 150-51.
Lagore, Co. Meath	Crannog	Three amber beads	Eogan 1991, 165.
Larrybane, Co. Antrim	Promontory fort	One amber bead	Childe 1936, 192.
Lisduggan North, Co. Cork	Rath	One piece of amber.	Twohig 1990, 19.
Lough-a-Trim, Co. Westmeath	Crannog	Part of amber ring	Falkiner 1899, 216.
Moynagh Lough, Brittas, Co. Meath	Crannog	Amber beads	Bradley 1997, 60.
Poulacapple, Co. Tipperary	Rath	Amber button	Reynolds 1972:0030

Table 8:15: Jet objects from Ireland

Townland/Site Name	Site Type	Comments	Reference
Altanagh, Co. Tyrone	Rath	Fragment of perforated jet.	Williams 1986, 69.
Ballyaghagan, Co. Antrim	Rath	Fragment of jet/lignite bracelet.	Proudfoot 1958, 30.
Ballycatteen, Co. Cork	Rath	Fragment of jet bracelet.	Ó Ríordáin & Hartnett 1943, 27.
Ballyvourney, Co. Cork	Ecclesiastical	Three fragments of jet.	O'Kelly 1952, 28.
Cathedral Hill, Armagh, Co. Armagh	Ecclesiastical	Fragments of three jet bracelets.	Gaskell-Brown & Harper 1984, 136.

Clonmacnoise, Co. Offaly	Ecclesiastical	Fragments of jet bracelets	Ó Floinn 1977-79:0063; King 1992:0157; 1993:0187; 1995:0240; 1996:0324
Dressogagh, Co. Armagh	Rath	Fragment of jet bracelet	Collins 1966, 126.
Drumaroad, *White Fort*, Co. Down	Cashel	Fragment of bracelet (jet/shale/lignite)	Waterman 1956a, 86.
Duneight, Co. Down	Raised rath	Fragment of jet bracelet	Waterman 1963b, 74.
Feltrim Hill, Co Dublin	Cashel	Jet bead	Hartnett & Eogan 1964, 31
Feltrim Hill, Co Dublin	Cashel	Jet spindle whorl	Hartnett & Eogan 1964, 31
Feltrim Hill, Co Dublin	Cashel	Jet disk	Hartnett & Eogan 1964, 31
Fishamble Street, Dublin	Hiberno-Scandinavian Urban	Unworked jet nodules	Wallace 1987a, 216.
Killarn, Co. Down	Raised rath	Fragment of jet bracelet	Boal & Moffit 1959, 110.
Knockea, Co. Limerick	Rath	Fragment of jet bracelet.	O'Kelly 1967, 96.
Knocknahur, Co. Sligo	Early medieval cist burial in rath	Three fragments of jet bracelets	Burenhult 1984, 119.
Knowth, Co. Meath	Raised rath	Fragments of jet armlets	Eogan 1975:0030; Comber 2008, 168
Lagore, Co. Meath	Crannog	Fragments of four jet bracelets	Eogan 1991, 165.
Letterkeen, Co. Mayo	Rath	Eight fragments of jet bracelets	Ó Ríordáin 1951, 71.
Moynagh Lough, Brittas, Co. Meath	Crannog	Fragments of jet bracelets.	Bradley 1989:0072; Bradley 1995:0228
Mullaghbane, Co. Tyrone	Multivallate rath	Fragments of three jet bracelets	Harper 1972a, 42.
Ninch, Co. Meath	Multi-period site	Fragments of two jet bracelets	Eogan & Reid 2000:0760
Oldcourt, Co. Cork	Rath	Three fragments of jet bracelets	Murphy & Ó Cuileanáin 1961, 90
Oldcourt, Co. Cork	Rath	Jet core.	Murphy & Ó Cuileanáin 1961, 90
Quinn's Rath, Lackan, Co. Wicklow	Rath	Piece of jet.	O'Connor 1944, 59.
Reask, Co. Kerry	Ecclesiastical	?	Comber 2008, 168.
Simonstown, Co. Meath	Rath	Fragments of jet bracelets.	Kelly 1975:0033.
The Spectacles, Lough Gur, Co. Limerick	Unenclosed hut site	Four fragments of jet bracelet.	Ó Ríordáin 1949a, 106.
Uisneach Rathnew, Co. Westmeath	High status enclosure	Fragments of four jet bracelets	Macalister & Praeger 1928, 118.

Table 8:16: Sherds of (possible) Souterrain Ware found in Ireland outside core area (up to 2007)

Townland/Site Name	Site Type	Comments	Reference
Ballygerry, Co. Wexford	Habitation site	28 sherds of pottery which shared some similarities to the souterrain ware tradition	Henry 2004:1789.
Balrothery, *St Peter's*, Co. Dublin	Ecclesiastical	3 sherds of souterrain ware	Murphy 2002:0472.
Carrigrohane, Co. Cork	Rath	1 sherd of souterrain ware	Moloney 2003:0188.
Cherryhound, Co. Dublin	Industrial site	Possible sherd of souterrain ware	McGowan 2004:0483.
Cloughvalley Upper 1, Co. Monaghan	Pit and cemetery	'Two sherds of probable early medieval pottery'	Walsh 2003:1485

Cormeen, Co. Meath	Rath and souterrain	Sherds of souterrain ware	McConway & Halpin 1992:0150.
Dublin City, Co. Dublin			Wallace 1985a, 125 Wallace 1987a, 203
Inishkea North, Co. Mayo	Ecclesiastical	Sherds of souterrain ware?	Greene (*Pers. Comm.*)
Lisanisk 1, Co. Monaghan	Pit near ringfort	Sherd of possible souterrain ware	Coughlan 2003:1489.
Millockstown, Co. Meath	Settlement/cemetery	Sherd of souterrain ware	Manning 1986, 159.
Mooretown North, Co. Dublin	Enclosure	Sherd of possible souterrain ware	Halliday 2004:0651.
Moyle Big, Co. Carlow	Pits and ditches	Sherds of souterrain ware	Kyle *et al.* 2009, 79
Mullagh, Co. Cavan	Ecclesiastical site	Three sherds of 'early medieval pottery'	Russell 2005:0127

Bibliography

Aalen, F. H. A. 1970. The origin of enclosures in Eastern Ireland, in N. Stephens and R. E. Glasscock (eds.) *Irish Geographical studies in honour of E. Estyn Evans*. Belfast: Queen's University Belfast, 209-23.

Acta Sanctorum. 'May'. *Acta Sanctorum quotquot toto orbe coluntur, vel à Catholicis scriptoribus celebrantur*

Addyman, P. V. 1965. Coney Island, Lough Neagh: Prehistoric Settlement, Anglo-Norman Castle and Elizabethan Native Fortress: An interim report on Excavation in 1962 to 1964. *Ulster Journal of Archaeology*, 28, 78-101.

Aitchison, N. B. 1994. *Armagh and the royal centres in early medieval Ireland: monuments, cosmology, and the past.* Woodbridge Suffolk: Boydell and Brewer for Cruithne Press.

Allison, E., Hall, A., & Kenward, H. 1999. Technical Report: Living conditions and resource exploitation at the Early Christian rath at Deer Park Farms, Co. Antrim, N. Ireland: evidence from plants and invertebrates. *Reports from the Environmental Archaeology Unit. York* 99/8, 1-64.

Anderson, A. O. and Anderson, M. O. 1961. *Adomnan's Life of Columba*. Nelson, London.

Anon.1973. *Viking and medieval Dublin: Catalogue of Exhibition*. Dublin: Elo Press.

—— 2000. Excavation at Aghavea, Co. Fermanagh. *Archaeology Ireland*, 14(3), 4.

—— 2003:0007. Ballymoney, Co. Antrim. www.excavations.ie.

Armit, I. 2008. Irish–Scottish connections in the first millennium AD: an evaluation of the links between souterrain ware and Hebridean ceramics. *Proceedings of the Royal Irish Academy*, 108C, 1-18.

Avery, M. 1970:0001. Carnmoney td. Sheet 56, grid, Co. Antrim. www.excavations.ie.

Baillie, M. G. L. 1975. A horizontal mill of the eighth century A.D. at Drumard, Co Derry. *Ulster Journal of Archaeology*, 38, 25-32.

—— 1979. An interim statement on dendrochronology at Belfast. *Ulster Journal of Archaeology*, 42, 72-84.

—— 1986. A sherd of souterrain ware from a dated context (Drumard, Derry - late 8th century). *Ulster Journal of Archaeology*, 49, 106.

Baker, C. 1999:0163. Rosepark, Balrothery, Co. Dublin. www.excavations.ie.

—— 2007a. Excavations at Cloncowan II, Co. Meath. *Journal of Irish Archaeology*, 16, 61-132.

—— 2007b. Augherskea, early medieval cemetery, in E. Grogan *et al*. (eds) *The Bronze Age Landscapes of the Pipeline to the West.* Bray: Wordwell, 316-18.

—— 2009. *The archaeology of Killeen Castle, Co. Meath*. Bray: Wordwell.

—— 2010. Occam's duck: three early medieval settlement cemeteries or ecclesiastical sites, in C. Corlett and M. Potterton (eds.) *Death and Burial in Early Medieval Ireland in the light of recent archaeological excavations*. Dublin, Wordwell, 1-21.

Baker, C. & Swan, R. 1999:0162. Rosepark, Balrothery, Co. Dublin. www.excavations.ie.

Barber, J. W. 1981. Excavations on Iona 1979. *Proceedings of the Society of Antiquaries of Scotland,* 111, 282-380.

Barrett, G. F. & Graham, B. J. 1975. Some considerations concerning the dating and distribution of ring-forts in Ireland. *Ulster Journal of Archaeology,* 38, 33-45.

Barrow, G. L. 1979. *The Round Towers of Ireland: a study and gazetteer*. Dublin: Academy Press.

Barry, T. B. 1981. Archaeological excavations at Dunbeg promontory fort, County Kerry, 1977. *Proceedings of the Royal Irish Academy*, 81C, 295-329.

Barton, R. 2000. A possible slave-chain from Knowth, Co. Meath. *Ríocht na Mídhe,* 11(1), 20-23.

Bass, G. F. & van Doorninck, F. H. 1982. *Yassi Ada, a seventh-century Byzantine shipwreck*. Texas: Texas A & M University Press.

Bateson, J. D. 1973. Roman material from Ireland. *Proceedings of the Royal Irish Academy*, 73C, 21-97.

—— 1976. Further finds of Roman material from Ireland. *Proceedings of the Royal Irish Academy*, 76C, 171-180.

Bayley, D. 2003:1286. Newtownbalregan, Co. Louth. www.excavations.ie.

Bayley, D. & Roycroft, N. 2003. Souterrain City. *Archaeology Ireland,* 17(4), 24-27.

Beeston, A. F. 1950. Idrisi's Account of the British Isles. *Bulletin of the School of Oriental and African Studies*, 13, 265-80.

Bélier, A-C. 1981-82. A sherd of terra sigillata from Wood Quay, Dublin. *Ulster Journal of Archaeology,* 44-45, 192-94.

Bennett, I. 1985:0033. Dromkeen East, Co. Kerry. www.excavations.ie.

—— 1989:0053. Glen Fahan, Co. Kerry. www.excavations.ie.

—— 1989. The settlement pattern of ringforts in County Wexford. *Journal of the Royal Society of Antiquaries of Ireland*, 119, 50-61.
—— 1991:0131. Clonee Lower, Co. Wexford. www.excavations.ie.
—— 2004-05. Archaeological excavations in Co. Wexford: a review of the last 35 years. *Journal of the Wexford Historical Society*, 20, 184-96.
Berger, R. 1992. ^{14}C dating mortar in Ireland. *Radiocarbon*, 34(3), 880-89.
—— 1995. Radiocarbon dating of early medieval Irish monuments. *Proceedings of the Royal Irish Academy,* 95C, 159-74.
Bermingham, N. 1996:0326. Leaheg, Castlearmstrong, Cornafurrish and Corraheg, Co. Offaly. www.excavations.ie.
—— 2009. Revealing the ancient environment of Edercloon. *Seanda*, 4, 12-15.
Bernard, W. 1879. Exploration and Restoration of the Ruin of the Grianan of Aileach. *Proceedings of the Royal Irish Academy*, Series 2, 9, 415-23.
Berry, R. G. 1926-7. Report on the work carried out at Drumena. *Proceedings of the Belfast Natural History and Philosophical Society*, 46-55
Bersu, G. 1947. The rath in Lissue townland, Co. Antrim: report on excavation in 1946. *Ulster Journal of Archaeology*, 10, 30-58.
—— 1948. Preliminary report on the excavations at Lissue, 1947. *Ulster Journal of Archaeology*, 11, 131-33.
Bhreathnach, E. 2005. The Medieval Kingdom of Tara, in E. Bhreathnach (ed.) *The Kingship and landscape of Tara*. Dublin: Four Courts Press for the Discovery Programme, 410-22.
—— 2010. From *fert*(*ae*) to *relic*: mapping death in early sources, in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin, Wordwell, 23-32
Bieler, L. (ed.) 1979. *The Patrican Texts in the Book of Armagh*. Dublin Dublin Institute for Advanced Studies.
Bigger, F. J. 1901. Discovery of an Unknown Fort on Ben Madighan (Cave Hill). *Ulster Journal of Archaeology* (2nd Series), 7, 195-96.
Binchey, D. A. 1978. *Corpus iuris hibernici*, Dublin: Dublin Institute for Advanced Studies.
Bitel, L. M. 1990. *Isle of the saints: monastic settlement and Christian community in early Ireland Cork*. Cork University Press.
Boal, F. W. & Moffitt, M. K. 1959. A partly destroyed rath in Killarn townland, Newtownards, Co. Down. *Ulster Journal of Archaeology,* 22, 107-11.
Bøe, J. *Norse antiquities in Ireland* (Part 3, H. Shetling (ed.) *Viking antiquities in Great Britian and Ireland*). Oslo: Aschehoug and Co.
Bolger, T. 2000:0674. Farrandreg, Dundalk, Co. Louth. www.excavations.ie.
—— 2004:0647. Kilgobbin, Stepaside, Co. Dublin. www.excavations.ie.
—— 2004:1128. Whiteriver/Gunstown, Co. Louth. www.excavations.ie
—— 2009. Organising the landscape: archaeological excavations at Flemington, Balbriggan, in C. Baker (ed.) *Axes, Warriors and Windmills: Recent Archaeological Discoveries in North Fingal*. Dublin: Fingal County Council, 23-35.
Bonner, C. 2008. Appendix IVb – Faunal Report 2003, in G. Stout & M. Stout (eds.) *Excavations of an early medieval secular cemetery at Knowth Site M, County Meath*. Bray: Wordwell, 136-37.
Bonnet, C. 1997. Les église en bois du haut Moyen-Âge d'après les recherches archéologiques, in N. Gauthier & H.
Galinié (eds.) *Grégoire de Tours et l'Espace Gaulois*. Tours, 217-36.
Bourke, C. 1984. Newtownlow, Co. Westmeath, crannog. *Medieval Archaeology*, 28, 258.
—— 1985:0058. Newtownlow, Co. Westmeath. www.excavations.ie.
—— 1986:0078. Newtownlow, Co. Westmeath. www.excavations.ie.
—— 1993. Antiquities from the River Blackwater II, Iron Age metalwork. *Ulster Journal of Archaeology*, 56, 109-13.
—— 1994. Report from the River Bann. *Archaeology Ireland*, 8(3), 8-9.
—— 1995:0005. 'Ferrystown', Gortgole, Co. Antrim. www.excavations.ie.
—— 1998. Fine metalwork from the River Blackwater. *Archaeology Ireland*, 12(3), 30-31.
—— 2007. The monastery of St Mo-Choí of Nendrum: The Early Medieval finds, in T. C McErlean & N. Crothers (eds.) *Harnessing the tide: The Early Medieval tide mills at Nendrum monastery, Strangford Lough*. Belfast: TSO, 406-21.
—— 2009. The Drumadoon Bell-Shrine, Appendix A, in McSparron, J. C. and Williams, B. B. The excavation of an Early Christian rath with later medieval occupation at Drumadoon, Co. Antrim. *Proceedings of the Royal Irish Academy*, 109C, 145-63
Bourke, E. 1990. Two early eleventh century Viking houses from Bride Street, Wexford, and the layout of properties on the site. *Journal of the Wexford Historical Society*, 12, 50-61.
—— 1994. Glass Vessels of the first nine centuries A.D. in Ireland. *Journal of the Royal Society of Antiquaries of Ireland*, 124, 163-209.
—— 1995. Life in the sunny south-east: housing and domestic economy in Viking and medieval

Wexford. *Archaeology Ireland*, 9(3), 33-36.
—— 2005. A preliminary analysis of the inner enclosure of Skellig Michael, Co. Kerry, in T. Condit & C. Corlett (eds.) *Above and Beyond: Essays in honour of Leo Swan*. Bray; Wordwell.
Bowen, P. 2008. Settlement and burial at Faughart Lower. *Seanda*, 3, 9-11.
Bower, N. 2009a. Archaeological Excavation Report E2442 – Loughbown 1, Co. Galway: Ringfort with souterrain and metalwork. *Eachtra Journal*, 2. http://eachtra.ie/index.php/journal/
—— 2009b. Archaeological Excavation Report E2054 – Loughbown 2, Co. Galway: Ringfort with earlier ringditch. *Eachtra Journal*, 2. http://eachtra.ie/index.php/journal/
Boyle, J. W. 2004. Lest the Lowliest Be Forgotten: Locating the Impoverished in Early Medieval Ireland. *International Journal of Historical Archaeology*, 8(2), 85-99.
Bradley, J. 1982-83. Excavations at Moynagh Lough, Co. Meath 1980-81. *Ríocht na Mídhe*, 7 (2), 12-32.
—— 1984. Excavations at Moynagh Lough, 1982-83, interim report. *Ríocht na Mídhe*, 7(3), 86-93.
—— (ed.) 1984. *Viking Dublin exposed: the Wood Quay saga*. Dublin: O'Brien Press.
—— 1985-86. Excavations at Moynagh Lough, 1984, summary report. *Ríocht na Mídhe*, 7(4), 79-92.
—— 1987. Recent archaeological research on the Irish town, in H. Jager (ed.) *Stadtkernforschung*, Koln: Wein, 321-70.
—— 1987:0039. 'Moynagh Lough Crannog', Brittas, Co. Meath. www.excavations.ie.
—— 1988. The interpretation of Scandinavian settlement in Ireland, in J. Bradley (ed.) *Settlement and Society in Medieval Ireland*. Kilkenny: Boethius, 49-78.
—— (ed.) 1988. *Settlement and society in medieval Ireland: studies presented to Francis Xavier Martin*. Kilkenny: Boethius.
—— 1988:0050. 'Moynagh Lough Crannog', Brittas, Co. Meath. www.excavations.ie.
—— 1989:0072. Moynagh Lough Crannog, Brittas, Co. Meath. www.excavations.ie.
—— 1990-91. Excavations at Moynagh Lough, Co. Meath, 1985 and 1987. *Ríocht na Mídhe*, 8(3), 21-35.
—— 1991. Excavations at Moynagh Lough, County Meath. *Journal of the Royal Society of Antiquaries of Ireland*, 121, 5-26.
—— 1993. Moynagh Lough: an insular workshop of the second quarter of the 8th century, in M. Spearman & J. Higgitt (eds.) *The Age of migrating ideas: early Medieval art in northern Britain and Ireland: proceedings of the second International Conference on Insular Art held in the National Museums of Scotland in Edinburgh, 3-6 January 1991*. Stroud, 74-81.
—— 1994-95. Excavations at Moynagh Lough, Co. Meath. *Ríocht na Mídhe*, 9(1), 158-69.
—— 1995a. Scandinavian Rural Settlement in Ireland. *Archaeology Ireland*, 9(3), 10-12.
—— 1995b. *Walled towns in Ireland*. Dublin: Country House.
—— 1995:0228. Moynagh Lough, Brittas, Co. Meath. www.excavations.ie.
—— 1997. Archaeological excavations at Moynagh Lough, Co. Meath 1995-96. *Ríocht na Mídhe*, 9(3), 50-61.
—— (ed.) 1997. *The topography and layout of medieval Drogheda*. Drogheda: The Old Drogheda Society.
—— 1998. The monastic town of Clonmacnoise, in H. King (ed.) *Clonmacnoise studies 1: seminar papers 1994*. Dublin: Dúchas, 42-55.
—— 1999. Excavations at Moynagh Lough, Co. Meath, 1997-98. *Ríocht na Mídhe*, 10(1), 1-17.
—— 2010. Some reflections on the problem of Scandinavian settlement in the hinterland of Dublin during the ninth century', in J. Bradley, A. F. Fletcher and A. Simms (eds) *Dublin in the medieval world: studies in honour of Howard B.* Clarke, Dublin, Four Courts, 39-62.
Brady, N. 1990:0119. Robinstown, Co. Westmeath. www.excavations.ie.
—— 1991:0129. Robinstown, Co. Westmeath. www.excavations.ie.
—— 1992:0180. Robinstown, Co. Westmeath. www.excavations.ie.
—— 1993. Reconstructing a medieval Irish plough. *I Jornadas internacionales sobre Tecnologia agraria tradicional*. Madrid: Museo Nacional del Pueble Espanol, 31-44.
—— 1994a. Fifty years a-ploughing. *Archaeology Ireland*, 8(3), 15-17.
—— 1994b. Labor and Agriculture in Early Medieval Ireland: Evidence from the Sources, in A. J. Frantzen & D. Moffat (eds.) *The Work of Work: Servitude, Slavery and Labour in Medieval England*. Glasgow: Cruithne Press, 125-45.
—— 2006. Mills in medieval Ireland: looking beyond design, in S. Walton (ed.) *Wind and water, the medieval mill*. Tempe: Arizona State University Press, 39-68.
Brady, N. and Gibson, P. 2005. The earthwork at Tulsk, Co. Roscommon: Topographical and Geophysical Survey and Preliminary Excavation. *Discovery Programme Reports 7: Project Results and Reports*. Dublin Royal Irish Academy 7, 65-75.
Brannon, N. F. 1977-79:0033. Nendrum, Co. Down. www.excavations.ie.
—— 1977-79:0018. Coleraine, Co. Derry. www.excavations.ie.
—— 1979a. A trial excavation at an earthwork near Moira, County Down'. *Ulster Journal of Archaeology*, 42, 26-33.
—— 1979b. A small excavation at Turraloskin Townland, County Antrim. *Ulster Journal of Archaeology*,

42, 86-87.
—— 1980-84:0007. Belfast (Town Parks td.; Castle St), Co. Antrim. www.excavations.ie.
—— 1980-84:0083. Inch (Abbey), Co. Down. www.excavations.ie.
—— 1980a. A trial excavation at St John's Point Church, County Down *Ulster Journal of Archaeology*, 43, 59-64.
—— 1980b. The excavation of a rath in Ballykennedy townland, County Antrim. *Ulster Journal of Archaeology*, 43, 65-70.
—— 1980c. The excavation of a rath in Drumbroneth townland, Dromore, County Down. *Ulster Journal of Archaeology*, 43, 71-74.
—— 1980d. The Excavation of a rath in Shewis townland, near Richhill, County Armagh. *Ulster Journal of Archaeology*, 43, 106-8.
—— 1981-82a. A rescue excavation at Lisdoo Fort, County Fermanagh. *Ulster Journal of Archaeology*, 44-45, 53-59.
—— 1981-82b. The excavation of a cashel in Carn townland, County Fermanagh. *Ulster Journal of Archaeology*, 44-45, 60-64.
—— 1981-82c. A second sherd of terra sigillata from Carrickfergus. *Ulster Journal of Archaeology,* 44-45, 195.
—— 1986a. Five excavations in Ulster 1978-1984. *Ulster Journal of Archaeology,* 49, 89-98.
—— 1986b. Archaeological Excavations at Cathedral Hill, Downpatrick, 1985. *Lecale Miscellany*, 4, 50-52.
—— 1986:0002. 'Rectory Field', Connor, Co. Antrim. www.excavations.ie.
—— 1986:0005. 'Fort (site of)', Gleagormley, Co. Antrim. www.excavations.ie.
—— 1986:0019. Downpatrick, Demesne of Down, Co. Down. www.excavations.ie.
—— 1987:0012. Cathedral Hill, Downpatrick, Demesne of Down, Co. Down. www.excavations.ie.
—— 1987. Archaeological Excavations at Cathedral Hill, Downpatrick, 1986. *Lecale Miscellany*, 5, 37-40.
—— 1988a. The Leaning Wall: St John's Point Church in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 29-30.
—— 1988b. Life and Death in an Early Monastery: Cathedral Hill, Downpatrick, Co. Down in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 61-64.
—— 1988c. Archaeological Excavations at Cathedral Hill, Downpatrick, 1987, *Lecale Miscellany*. 6, 3-9.
—— 1989:0015. 'Bellaghy Bawn', Bellaghy, Co. Derry. www.excavations.ie.
—— 1990. A souterrain in Spittle Quarter townland, Co. Down. *Lecale Miscellany*, 8, 39-41.
—— 1990:0024. 'Bellaghy Bawn', Bellaghy, Co. Derry. www.excavations.ie
—— 1990:0028. Spittle Quarter, Co. Down. www.excavations.ie.
—— 1997:0071. Cathedral Hill, Downpatrick, Co. Down. www.excavations.ie.
Bratt, A. 1975:0004, Deerfin Lower, Co. Antrim. www.excavations.ie.
Bratt, A. & Lynn, C.J. 1976:0012. Big Glebe, Co. Derry. www.excavations.ie.
Breen, C. 1993:0016. Ballindeasig, Co. Cork. www.excavations.ie.
Breen, T. C. 1987:0057. 'Brecaun Church', Portersgate, Co. Wexford. www.excavations.ie.
—— 1988. Excavation of a roadway at Bloomhill Bog, County Offaly. *Proceedings of the Royal Irish Academy*, 88C, 321-39.
—— 1997:0336. Croom, Site 7, Co. Limerick. www.excavations.
—— 1999:0046. Carrigoran, Co. Clare. www.excavations.ie.
—— 2000:0046. AR48/50, Ballyconneely, Co. Clare. www.excavations.ie.
—— 2000:0047. AR47/51, Ballyconneely/Ballygirreen, Co. Clare. www.excavations.ie.
—— 2000:0695. Mell 2, Co. Louth. www.excavations.ie.
—— 2000:0696. Mell 3, Co. Louth. www.excavations.ie.
—— 2002:0631. Murphystown Site 6, Murphystown/ Carmanhall and Leopardstown, Co. Dublin. www.excavations.ie.
Briggs, C. S. 1974. A Boat Burial from County Antrim. *Medieval Archaeology*, 18, 158-60.
Briggs, C. S. & Graham-Campbell, J. 1976. A lost hoard of Viking-age silver from Magheralagan, County Down. *Ulster Journal of Archaeology*, 39, 20-24.
Brindley, A. L. 1977-79:0076. Carrignamuck, Co. Wicklow. www.excavations.ie.
—— 1988. Early ecclesiastical remains at Selloo and Kilnahalter, County Monaghan. *Ulster Journal of Archaeology*, 51, 49-53.
Buchanan, R. H., Proudfoot, V. B., & Johnson, J. H. 1958. Excavations at Murphystown, Co. Down: Preliminary Report on Excavations in 1956. *Ulster Journal of Archaeology*, 21, 115-126.
Büchner, D. 2001. The exploitation of Littoral resources in Ancient Ireland: Mammalian problems, in D. Büchner (ed.) *Studies in memoriam of Wilhelm Schule*. Rahden Westf: Verlag Marie Liedorf Gmbh, 62-91.
Buckley, L. 1991. A study of the human skeletal remains from a cemetery at Kilshane, co. Dublin, (Unpublished MSc.) Belfast: Queen's University Belfast

—— 2003. Health status in medieval Dublin: analysis of the skeletal remains from the abbey of St Thomas the Martyr, in S. Duffy (ed.) *Medieval Dublin IV: proceedings of the Friends of Medieval Dublin Symposium 2002*. Dublin: Four Courts Press, 98-126.
—— 2008. Outcasts, or care in the community? *Archaeology Ireland*, 22(1), 26-31.
—— 2010. Ninch, Laytown, Co. Meath, within the context of north Leinster early medieval cemeteries, in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin, Wordwell, 43-48.
Buckley, L. & McConway, C. 2010. Early medieval settlement and burial ground at Faughart Lower, Co. Louth, in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin, Wordwell, 61-76.
Buckley, V. M. 1986. Ulster and Oriel souterrains - an indicator of tribal areas? *Ulster Journal of Archaeology*, 49, 108-12.
—— 1988. Meath souterrains: some thoughts on Early Christian distribution patterns. *Ríocht na Mídhe*, 8(2), 64-67.
—— 1991:0113. The Fisherman's Grave, Lackan, Co. Sligo. www.excavations.ie.
Buckley, V. M. *et al*. 1991. Excavations at a lintelled grave at Lacken, Enniscrone, Co. Sligo. *North Mayo Historical Journal*, 2(5), 21-24.
Buick, G. R. 1893. The crannog of Moylarg. *Journal of the Royal Society of Antiquaries of Ireland*, 23, 27-43.
—— 1894. The crannog of Moylarg. *Journal of the Royal Society of Antiquaries of Ireland*, 24, 315-31.
Burenhult, G. 1980. *The Archaeological Excavation at Carrowmore, Co Sligo, Ireland*. Theses and Papers in North-European Archaeology 9; Stockholm, University of Stockholm Press.
—— 1984. *The archaeology of Carrowmore: environmental archaeology and the megalithic tradition at Carrowmore, Co. Sligo, Ireland*. Stockholm: Institute of Archaeology at the University of Stockholm.
Buteaux, S. 1985:0040. Marshes Upper, Co. Louth. www.excavations.ie.
Butler, V. 1989. Aniamal Bone Studies in Archaeology. *Archaeology Ireland*, 3(3), 104-7.
Byrne, F. J. 1973. *Irish kings and high-kings*. London: Batsford.
Byrne, G. 1987:0041. Kells, Townparks, Co. Meath. www.excavations.ie.
—— 1988:0057. Kells, Townparks, Co. Meath. www.excavations.ie.
Byrne, M. E. 1991. Report on the excavation of a cashel at Ballyegan, near Castleisland, Co. Kerry. *Journal of the Kerry Archaeological and Historical Society*, 24, 5-31.
—— 1993:0057. 26-29 Castle St/Adjoining 19 Lord Edward St www.excavations.ie.
—— 2002:0643. Phrompstown 1, Co. Dublin. www.excavations.ie.
—— 2002:0644. Phrompstown 2. www.excavations.ie.

Cagney, L. & O'Hara, R. 2009. An early medieval complex at Dowdstown 2, in M. Deevy and D. Murphy (eds.) *Places Along the Way: First Findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell, 123-34.
Cahill, M. 1988:0003. Ballykeel South, Co. Clare. www.excavations.ie.
—— 1988:0058. 'Sand Pit Grove', Caherabbey Lower, Co. Tipperary. www.excavations.ie.
—— 1988:0052. Drumbaragh, Co. Meath. www.excavations.ie.
—— 1990:0087. Carrowsteelagh, Co. Mayo. www.excavations.ie.
Campbell, E. (ed.) 1996. *The archaeological evidence for external contacts: imports, trade and economy in Celtic Britain A.D. 400-800*. Woodbridge: Boydell Press.
—— 2007. *Continental and Mediterranean Imports to Atlantic Britain and Ireland, A.D. 400-800*. York: Alden Press.
Campbell, K. 1985:0044. Randalstown, Co. Meath. www.excavations.ie.
—— 1986:0065. Randalstown, Co. Meath. www.excavations.ie.
—— 1994:0180. Haggardstown, Co. Louth. www.excavations.ie.
—— 1996:0258. Ballymascanlan, Co. Louth. www.excavations.ie.
—— 2002. Souterrain at Muirhevnamore, Marshes Upper, Dundalk. *Journal of the Louth Archaeological and Historical Society*, 25(2), 202-7.
—— 2004:1122. Rampark, Co. Louth. www.excavations.ie.
Cantwell, I. 2001. Anthropozoological relationships in late medieval Dublin. *Dublin Historical Record*, 54(1), 73-80.
Carew, M. 2003. *Tara and the Ark of the Covenant: a search for the Ark of the Covenant by British-Israelites on the Hill of Tara (1899-1902)*. Dublin: Royal Irish Academy.
Carey, A. 2000:0043. Ballycasey Beg, Co. Clare. www.excavations.ie.
Carlin, N. (with contributions from V. Ginn & J. Kinsella) 2008. Ironworking and Production, in N. Carlin *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Dublin: National Roads Authority, 87-112.
Carlin, N., Clarke, L., & Walsh, F. (eds.) 2008. *The Archaeology of Life and Death in the Boyne*

Floodplain: the linear landscape of the M4. Dublin: National Roads Authority.
Carroll, J. 1991:0091, Aghadegnan, Templemichael, Co. Longford. www.excavations.ie.
—— 1993:0152, Aghadegnan, Templemichael, Co. Longford. www.excavations.ie.
—— 1997:0184. The Old Orchard Inn, Butterfield Avenue, Rathfarnham, Co. Dublin. www.excavations.ie.
—— 2000:0209. Rosepark, Balrothery, Co. Dublin. www.excavations.ie.
—— 2001:0334. Rosepark, Balrothery, Co. Dublin. www.excavations.ie.
—— 2001:0340. Corcagh Demesne, Clondalkin, Co. Dublin. www.excavations.ie.
—— 2008. *Archaeological Excavations at Rosepark, Balrothery, Co. Dublin* Vol. 1. Dublin: Environmental Publications.
Carroll, J., Ryan, F. & Wiggins, K. 2008. *Archaeological excavations at Glebe South and Darcystown, Balrothery, Co. Dublin: Balrothery excavations* Vol. 2. Dublin, Environmental Publications.
Carroll, M. 2003:0178. Brigown, Co. Cork. www.excavations.ie.
—— 2003:1034. Kilmurry, Co. Kilkenny. www.excavations.ie.
Carver, M., Sanmark, A., & Semple, S. (eds.) 2010. *Signals of belief in early England: Anglo-Saxon Paganism revisited*. Oxford: Oxbow Books
Carver, N. 2007. Excavations at Aghaloo Church, Rousky, County Tyrone. *Ulster Journal of Archaeology*, 66, 75-96.
Case, H. J., Dimbleby, G. W., Mitchell, G. F., Morrison, M. E. S., & Proudfoot, V. B. 1969. Land-use in Goodland townland, Co. Antrim from Neolithic times until today. *Journal of the Royal Society of Antiquaries of Ireland*, 99, 39-54.
Casey, M. 1999. Excavation at the promontory fort at Doonamo, Aughernacalliagh, Co. Mayo. *Journal of the Galway Archaeological and Historical Society*, 51, 65-76.
Cassidy, B. 1991. Digging at Dunbell Big. *Archaeology Ireland*, 5(2), 18-20.
Caulfield, S. 1981. Celtic problems in the Irish Iron Age, in D. Ó Corrain (ed.) *Irish antiquity: essays and studies presented to Professor M.J. O'Kelly*. Dublin: Four Courts Press, 205-15.
Chambré, N. 1937. Excavations at Island MacHugh, Co. Tyrone (note). *Journal of the Royal Society of Antiquaries of Ireland*, 67, 301.
—— 1939. Excavations in Co. Tyrone [Island MacHugh & Altnamuskin] (note). *Journal of the Royal Society of Antiquaries of Ireland*, 69, 176-77.
—— 1946. Excavations at Island MacHugh, Baronscourt, Co. Tyrone (note). *Journal of the Royal Society of Antiquaries of Ireland*, 76, 219.
—— 1948. Excavation at Island McHugh, Baronscourt, Co. Tyrone (note). *Journal of the Royal Society of Antiquaries of Ireland*, 78, 181.
Champneys, A. C. 1910. *Irish ecclesiastical architecture: with some notice of similar or related work in England, Scotland and elsewhere*. London: George Bell & Sons.
Channing, J. 1992:0179. Petitswood, Co. Westmeath. www.excavations.ie.
—— 1994:0169. Dowdallshill, Co. Louth. www.excavations.ie.
—— 2007. Politics, wealth and expansion: the archaeology of a multiperiod enclosure at Rochfort Demesne, Co. Westmeath, in J. O'Sullivan & M. Stanley (eds.) *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*. Bray: Wordwell, 111-21.
Channing, J. & Randolph-Quinney, P. 2006. Death, decay and reconstruction: the archaeology of Ballykilmore cemetery, County Westmeath, in J. O'Sullivan & M. Stanley (eds.) *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 115-28.
Chapple, R. 2000:0638. Balgatheran 1, Co. Louth. www.excavations.ie.
—— 2001:0869. Mell 2, Co. Louth. www.excavations.ie.
Charles-Edwards, T. M. 1993. *Early Irish and Welsh Kinship*. Oxford: Clarendon Press.
—— 2000. *Early Christian Ireland*, Cambridge: Cambridge University Press.
Chart, D.A. 1940. *A Preliminary Survey of the Ancient Monuments of Northern Ireland* (PSAMNI). Belfast: Stationery Office.
Childe, V. G. 1936. A Promontory fort on the Antrim Coast *Antiquaries Journal*, 16, 179-98.
—— 1938. Doonmore, a castle mound near Fair Head, Co. Antrim. *Ulster Journal of Archaeology*, 1, 122–35.
Clarke, H. 1998. Proto-towns and towns in Ireland and Britain in the ninth and tenth centuries, in H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn (eds.) *Ireland and Scandinavia in the early Viking age*. Dublin: Four Courts Press.
Clarke, H. & Ambrosiani, B. 1991. *Towns in the Viking Age*. Leicester: Leicester University Press.
Clarke, L. 2002. An early medieval enclosure and burials, Johnstown, Co. Meath. *Archaeology Ireland*, 16(4), 13-15.
—— 2005:AD2. Ardsallagh, Co. Meath. www.excavations.ie.
Clarke, L. & Carlin, N. 2006a. Life and death in Ardsallagh. *Seanda*, 1, 16-18.
—— 2006b. Life and death in County Meath. *Archaeology Ireland*, 20(4), 22-25.

—— 2008. Living with the dead at Johnstown 1: an enclosed burial, settlement and industrial site, in N. Carlin *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Bray: Wordwell, 55-86.
—— 2009. From focus to locus: a window upon the development of a funerary landscape, in M. Deevy and D. Murphy (eds.) *Places Along the Way: First Findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell, 1-20.
Clarke, L. & Murphy, D. 2001:0952. Colp West, Co. Meath. www.excavations.ie.
Cleary, R. M. 1987. Archaeological investigation of a ringfort at Ballyduff, Co. Limerick. *North Munster Antiquarian Journal*, 27, 3-7.
—— 1993:0020. Coraliss, Co. Cork. www.excavations.ie.
—— 1995:0035. Labbamolaga Middle, Co. Cork. www.excavations.ie.
—— 2000. Labbamologa, Co. Cork. *Journal of the Cork Historical and Archaeological Society*,105, 27-48.
—— 2006. Excavations of an Early-Medieval period enclosure at Ballynagallagh, Lough Gur, Co. Limerick. *Proceedings of the Royal Irish Academy*, 106C, 1-66.
—— 2008. Excavation of an early medieval settlement and other sites at Dromthacker, Tralee, Co. Kerry. *Proceedings of the Royal Irish Academy*, 108C, 19-64.
Cleary, R. M. & Hurley, M. F. (eds.) 2003. *Cork City excavations, 1984-2000*. Cork: Cork City Council.
Cleary, R. M., Hurley, M. F., & Shee-Twohig, E. 1987. *Archaeological excavations on the Cork - Dublin pipeline*. Cork: University College Cork.
—— (eds.) 1997. Skiddy's Castle and Christ Church, Cork : excavations 1974-77 by D.C. Twohig. Cork: Cork Corporation.
Clinton, M. 2000. Settlement patterns in the early historic kingdom of Leinster (seventh-mid twelfth centuries), in A. P. Smyth (ed.) *Seanchas: Studies in Early and Medieval Archaeology, History and Literature in honour of Francis J. Byrne*. Dublin: Four Courts Press, 275-98.
—— 2001. *The souterrains of Ireland*. Bray: Wordwell.
Clutterbuck, R. 2004:1211. Cookstown, Co. Meath. www.excavations.ie.
Coffey, G. 1906. Craigywarren Crannog: Excavated by W.J. Knowles and George Coffey. *Proceedings of the Royal Irish Academy*, 26C, 109-118.
Colby, T. 1837. *Ordnance survey of the county of Londonderry. Vol.1. Memoir of the city and north western liberties of Londonderry. Parish of Templemore*. Dublin: Smith & Hodges.
Cole, E. E. & Mitchell F. J. G. 2003. Human impact on the Irish landscape during the late Holocene inferred from palynological studies at three peatland sites. *The Holocene*, 13, 507-15.
Coleman, J. C. 1942. Cave Excavation at Midleton, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 47, 63-76.
—— 1947. Irish Cave Excavations. *Journal of the Royal Society of Antiquaries of Ireland*, 77, 63-80.
Collins, A. E. P. 1952. Excavations in the Sandhills at Dundrum, Co. Down, 1950-51. *Ulster Journal of Archaeology*, 15, 2-26.
—— 1955. Excavations in Lough Faughan (Falcon) Crannog, Co Down, 1951-2. *Ulster Journal of Archaeology*, 18, 45-81.
—— 1959a. Further investigations in the Dundrum sandhills. *Ulster Journal of Archaeology*, 22, 5-20.
—— 1959b. A rath group at Craigaphuile, Co Down. *Ulster Journal of Archaeology*, 22, 88-92.
—— 1960a. Finds from a rath in Glencull Townland, Aughacloy, Co Tyrone. *Ulster Journal of Archaeology*, 23, 78-80.
—— 1960b. Two Romano-British finds from Rathlin Island, *Ulster Journal of Archaeology* 23, 38-39.
—— 1966. Excavations at Dressogagh Rath, Co. Armagh. *Ulster Journal of Archaeology*, 29, 117-29.
—— 1968. Excavations at Dromore ring-work, Co Antrim. *Ulster Journal of Archaeology*, 31, 59-66.
—— 1970:0013. Ballylessant td. ('Farrell's Fort'), Co. Down. www.excavations.ie.
—— 1971:0008. Lisdrumchor Upper, Co. Armagh. www.excavations.ie.
—— 1971:0009. Tullyallan, Co. Armagh. www.excavations.ie.
—— 1978. Excavations on Ballygalley Hill, County Antrim. *Ulster Journal of Archaeology*, 41, 15-32.
Collins, A. E. P., Davison, B. K., & Wright, W. S. 1964. Recent Investigations of Souterrains. *Ulster Journal of Archaeology*, 27, 121-32.
Collins, A. E. P. & Proudfoot, V. B. 1959. A trial excavation in Clea Lakes crannog, Co Down. *Ulster Journal of Archaeology*, 22, 92-101.
Collins, T. 1999:0501. Fanningstown, Co. Limerick. www.excavations.ie.
—— 2002:0137. Carrowdotia, Co. Clare. www.excavations.ie.
—— 2002:0139. Carrowdotia (M27), Co. Clare. www.excavations.ie.
Collins, T. & Coyne, F. 2007. Shape-shifting: enclosures in the archaeological landscape, in C. Manning (ed.) *From ringforts to fortified houses: Studies on castles and other monuments in honour of David Sweetman*. Bray: Wordwell, 21-32.
Comber, M. 2001. Trade and communication networks in early historic Ireland. *Journal of Irish Archaeology,* 10, 73-92.
—— 2002. M.V. Duignan's excavations at the ringfort of Rathgurreen, Co. Galway 1948-9. *Proceedings*

of the Royal Irish Academy, 102C, 137-97.
—— 2004. *Native evidence of non-ferrous metalworking in Early Medieval Ireland*. BAR International Series 1296. Oxford: Archaeopress.
—— 2006. Tom Fanning's excavations at Rinnaraw cashel, Portnablagh, Co. Donegal. *Proceedings of the Royal Irish Academy*, 106C, 67-124.
—— 2008. *The economy of the ringfort and contemporary settlement in early medieval Ireland*. BAR International Series, 1773. Oxford: Archaeopress.
Comber, M. & Hull, G. 2008. Caherconnell, Co. Clare, and cashel chronology. *Archaeology Ireland* 22(4), 30-33.
Comyn, D. & Dineen, P. S (eds.) 1902-14. *The History of Ireland by Geoffrey Keating*. Irish Texts Society. London.
Conneely, D. 1993. *St Patrick's letters: a study of their theological dimension*. Maynooth.
Connolly, M. 1992. An iron sickle from a previously unrecorded souterrain at Beaufort, Co. Kerry. *Journal of the Kerry Archaeological and Historical Society*, 25, 20-36.
—— 1993:0119. Clasheen, Co. Kerry. www.excavations.ie.
—— 1993:0122. Emlagh West, Co. Kerry. www.excavations.ie.
—— 1994:0127. Lahard, Co. Kerry. www.excavations.ie.
—— 1994:0128. Moybella North, Co. Kerry. www.excavations.ie.
—— 2000. Cloghermore cave: the Lee Valhalla. *Archaeology Ireland*, 14(4), 16-19.
—— 2000:0434. Gortatlea, Co. Kerry. www.excavations.ie.
—— 2001:0569. Gortatlea, Co. Kerry. www.excavations.ie.
—— 2001:5071. Gortatlea, Co. Kerry. www.excavations.ie.
—— 2001:0572. Gortatlea, Co. Kerry. www.excavations.ie.
Connolly, M. & Coyne, F. 2000. The underworld of the Lee Valley. *Archaeology Ireland*, 14(2), 8-12.
Connolly, M. & Coyne, F. 2005. *Underworld: Death and burial at Cloghermore Cave, Co. Kerry*. Bray: Wordwell.
Connolly, S. & Picard, J-M. 1987. Cogitosus: Life of Saint Brigid. *Journal of the Royal Society of Antiquaries of Ireland*, 117, 5-27.
Conway, M. 1994:0008. 'Shandragh', Knockans South, Rathlin Island, Co. Antrim. www.excavations.ie.
—— 1997:0079. Ballymount Great, Co. Dublin. www.excavations.ie.
—— 1998:0124. Mount Offaly, Cabinteely. www.excavations.ie.
—— 1999. *Director's first findings from excavations at Cabinteely, Dublin*. Dublin: Margaret Gowen and Company.
—— 2001:1019. Platin Fort, Platin, Co. Meath. www.excavations.ie.
—— 2002:0386. Corrstown, Co. Derry. www.excavations.ie.
—— 2002:0387. Corrstown, Co. Derry. www.excavations.ie.
Coombs, D.G. and Maude, K. 1996:0333. Kiltullagh Hill, Kiltullagh, Co. Roscommon. www.excavations.ie.
Cooney, G. 1995. Theory and Practice in Irish Archaeology,in P. Ucko (ed.) *Theory in Archaeology: A World Perspective*. London and New York, Routledge**,** 263-77.
—— 1995:0100. the Point, Lambay Island, Co. Dublin. www.excavations.ie.
Corcoran, E. 2007:0802. Derryarroge, Co. Kildare. www.excavations.ie.
Corlett, C. 2010. Cracking Millstones in Wicklow. *Archaeology Ireland* 24(1), 16-19.
Corlett, C. & Medlycott, J. (eds.), 2000. *The Ordnance Survey letters: Wicklow*. Roundwood: Roundwood & District Historical & Folklore Society and Kestrel Books.
Corlett, C. & Potterton, M. 2010. *Death and Burial in Early Medieval Ireland in the light of recent archaeological excavations*. Dublin, Wordwell.
Cotter, C. 1988:0004. Gragan West, Co. Clare. www.excavations.ie.
—— 1992:0093. 'Dun Aonghasa', Kilmurvey, Inismor. www.excavations.ie.
—— 1993:0112. 'Dun Aonghasa', Kilmurvey, Inismór. www.excavations.ie.
—— 1993. Western Stone Fort Project: Interim report. *Discovery Programme Reports 2: Project results 1993*. Dublin: Royal Irish Academy, 1-11.
—— 1994. Atlantic fortifications: The Dúns of the Aran Islands. *Archaeology Ireland*, 8(1), 24-28.
—— 1994:0111. 'Dún Aonghusa', Kilmurvey, Inis Mór. www.excavations.ie.
—— 1995a. Archaeological excavations at Skeam West. *Mizen Journal*, 3, 71-79.
—— 1995b. The Western Stone Fort Project. *The Other Clare*, 19, 10-13.
—— 1995:0117. 'Dún Eoghanachta', Eoghanacht, Inis Mór, Co. Galway. www.excavations.ie.
—— 1995:0125. 'Dún Aonghasa', Kilmurvey, Inis Mór. www.excavations.ie.
—— 1996. Western stone fort project. *Discovery Programme reports 4*. Dublin: Royal Irish Academy, 1-14.
—— 1999. Western Stone Forts Project: Cahercommaun Fort, Co. Clare - a reassessment of its cultural context, in *Discovery Programme Reports 5*. Dublin: Royal Irish Academy.
Cotter, E. 2000:0112. Ballinvinny South, Co. Cork. www.excavations.ie.
—— 2004:1253. Testing Area 15, Johnstown, Co. Meath. www.excavations.ie.

Coughlan, T. 2003:1489. Lisanisk 1, Co. Monaghan. www.excavations.ie.
—— 2003:1490. Lisanisk 2, Co. Monaghan. www.excavations.ie.
—— 2005:1276. Lismagunshin, Co. Monaghan. www.excavations.ie.
Coyne, F. 2001:0791. Newtown (A and E), Co. Limerick. www.excavations.ie.
—— 2004:0817. Corbally, Co. Kildare. www.excavations.ie.
—— 2004:0818. Corbally, Co. Kildare. www.excavations.ie.
—— 2005. Excavation of an early medieval 'plectrum-shaped' enclosure at Newtown, Co. Limerick. *North Munster Antiquarian Journal*, 45, 51-63.
—— 2006a. Excavation of an early medieval 'plectrum-shaped' enclosure at Newtown, Co. Limerick, in J. O'Sullivan & M. Stanley (eds.) *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 63-72.
—— 2006b. *Islands in the clouds: an upland archaeological study on Mount Bradon and the Paps, Co. Kerry*. Tralee: Kerry County Museum in association with Aegis Archaeology Limited.
—— 2010. Corbally, Co. Kildare: the results of the 2—3-4 excavations of a secular cemetery, in C. Corlett and M. Potterton (eds.) *Death and Burial in Early Medieval Ireland in the light of recent archaeological excavations*. Dublin, Wordwell, 77-90.
Coyne, F., & Collins, T. 2003. Plectrum-shaped enclosures – a new site type at Newtown, Co. Limerick. *Archaeology Ireland*, 17(4), 17-19.
Craddock, P. T. 1989. Metalworking techniques, in S. Youngs (ed.) *The Work of Angels, Masterpieces of Celtic metalwork, 6th to 9th centuries A.D.* London: British Museum Publications, 170-213.
Crothers, N. 1992:0004. Ballyrea, Co. Armagh. www.excavations.ie.
—— 1992:0037. Ringmackilroy, Co. Down. www.excavations.ie.
—— 1993:0002. Ballywee, Co. Antrim. www.excavations.ie.
—— 1994:0006. Ballywee, Co. Antrim. www.excavations.ie.
—— 1996:0011. Middle Division, Co. Antrim. www.excavations.ie.
—— 1996:0015. Cavanapole, Co. Armagh. www.excavations.ie.
—— 1997. A rediscovered Souterrain at Mallusk old Graveyard, Co. Antrim. *Archaeology Ireland*, 11(1), 34-35.
—— 1998:0004. British and Seacash, Co. Antrim. www.excavations.ie.
—— 1999. Excavations in Upper English Street, Armagh. *Ulster Journal of Archaeology*, 58, 55-80.
—— 2002:0034. Kilmore, Co. Armagh. www.excavations.ie.
—— 2003:0004. Ballyhamage, Co. Antrim. www.excavations.ie.
—— 2004:0043. Drumfin, Co. Armagh. www.excavations.ie.
Crumlish, R. 1995:0127. Townparks, Tuam, Co. Galway. www.excavations.ie.
Cryerhall, A. 2006. Excavations at Hammond Lane, Dublin: from hurdler-ford to iron-foundry, in S. Duffy (ed.) *Medieval Dublin VII: proceedings of the Friends of medieval Dublin symposium 2005*. Dublin: Four Courts, 9-50.
Cummins, T. 1998:0626. Murgasty, Co. Tipperary. www.excavations.ie.
—— 2004:1424. Rahan, Co. Offaly. www.excavations.ie.
Cunliffe, B. 2002. People of the Sea. *British Archaeology*, 63.
Cuppage, J. 1986. *Archaeological survey of the Dingle Peninsula: a description of the field antiquities of the Barony of Corca Dhuibhne from the Mesolithic period to the 17th century A.D. = Suirbhé seandálaíochta Chorca Dhuibhne (contributions by Isabel Bennett ... (et al.)*. Ballyferriter: Oidhreacht Chorca Dhuibhne.

Danaher, E. 2002:0296. Curraheen 1, Co. Cork. www.excavations.ie.
Dark, K. R. (ed.) 1996. *External contacts and the economy of Late Roman and Post-Roman Britain*. Woodbridge: Boydell Press.
Darlington, R. (ed.) 1928. *The Vita Wulfstani of William of Malmesbury*. Royal Historical Society, London.
Davies, O. 1938a. Sessiaghmagaroll Fort. *Ulster Journal of Archaeology*, 1, 42-44.
—— 1938b. Excavations at Sallagh Fort. *Proceedings of the Belfast Natural History & Philosophical Society*, 1, 27-33.
—— 1939. Excavations at Lissachiggel. *Journal of the Louth Archaeological and Historical Society*, 9(3), 209-43.
—— 1940. Excavations at Corliss fort. *Journal of Louth Archaeological and Historical Society*, 9(4), 338-43.
—— 1941. Trial excavations at Lough Enagh. *Ulster Journal of Archaeology*, 4, 88-101.
—— 1942. Contributions to the study of Crannogs in South Ulster. *Ulster Journal of Archaeology*, 5, 14-30.
—— 1946a. Excavations around Lough Eske, Co Donegal. *Ulster Journal of Archaeology*, 9, 91-99.
—— 1946b. Excavation of a crannog at Deredis Upper, in Lough Inchin, Co. Cavan. *Journal of the Royal Society of Antiquaries of Ireland*, 76, 19-34.

—— 1947. Types of Raths in southern Ulster. *Ulster Journal of Archaeology*, 10, 1-14.
—— 1950. *Excavations at Island MacHugh*. Belfast: Belfast Natural History and Philosophical Society.
Davison, B. K. 1961-62. Excavations at Ballynarry Rath, Co Down. *Ulster Journal of Archaeology*, 24-25, 39-87.
Decker, M. 2001. Food for an empire: wine and oil production in north Syria, in S. Kingsley and M. Decker (eds.) *Economy and Exchange in the east Mediterranean during late antiquity: Proceedings of a conference at Somerville College, Oxford, 29th May 1999*. Oxford: Oxbow, 69-86.
de Paor, L. 1970:0006. Inishcaltra (Holy Island), Co. Clare. www.excavations.ie.
—— 1971:0010. Inishcaltra (Holy Island), Co. Clare. www.excavations.ie.
—— 1972:0006. Inishcaltra (Holy Island), Co. Clare. www.excavations.ie.
—— 1973:0006. Inishcaltra (Holy Island), Co. Clare. www.excavations.ie.
—— 1974:0009. Inis Cealtra (Holy Island), Co. Clare. www.excavations.ie.
—— 1975:0009. Inis Cealtra (Holy Island), Co. Clare. www.excavations.ie.
—— 1976:0010. Inis Cealtra (Holy Island), Co. Clare. www.excavations.ie.
—— (ed.) 1976. *The Viking towns of Ireland*. London: Viking Society for Northern Research.
—— 1997. Inis Cealtra: report on archaeological and other investigations of the monuments on the island. Unpublished DoEHLG Report, Dublin.
de Paor, M. & De Paor, L. 1958. *Early Christian Ireland*. London: Thames & Hudson.
—— 1967. *Early Christian Ireland*. London: Thames & Hudson.
de Winterfeld, P (ed.). 1899. *Poetarum Latinorum Medii Aevi. Tomi IV*. Societas Aperiendis Fontibus Rerum Germanicarum Medii Aevi, Berlin.
Deevy, M. B. 2005. The M3 Clonee to North of Kells Road Scheme, County Meath, in J. O'Sullivan & M. Stanley (eds.) *Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell, 83-92.
—— 2006. The Hidden Archaeological Landscapes of the M3. *Seanda: National Roads Authority Magazine*, 1, 10-11.
——2008. The M3 Research Framework and the Lismullin Discovery in County Meath, in J. O'Sullivan and M. Stanley (eds.) *Roads, Rediscovery and Research: Proceedings of a Public Seminar on Archaeological Discoveries on National Road Schemes, August 2007*. Bray, Wordwell, 5, 71-82.
Deevy, M. B. & Baker, C. 2000. Ring Brooches and finger rings from medieval Dublin, in S. Duffy (ed.) *Medieval Dublin I: proceedings of the Friends of Medieval Dublin Symposium 1999*. Dublin: Four Courts Press, 159-84.
Deevy, M. & Murphy, D. (eds.) 2009. *Places Along the Way: First Findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell.
Delany, D. 2001:0722. Rathmiles, Co. Laois. www.excavations.ie.
—— 2001:1104. Sranure, Co. Offaly. www.excavations.ie.
Delaney, F. 2009. Archaeological Excavation Report E2444 – Mackney, Co. Galway: Ringfort with Killeen Burials. *Eachtra Journal*, 2. http://eachtra.ie/index.php/journal/
Delaney, S. 2002:1291. Ballybarrack/Littlemill/Donaghmore/Acarreagh/Newtownbalregan/Tateetra/ Balregan/Balriggan. www.excavations.ie.
—— 2003:1272. Carn More, Faughart, Co. Louth. www.excavations.ie.
—— 2002:1295. Balriggan, Co. Louth. www.excavations.ie.
—— 2003:0885. Site 48, Blackchurch, Co. Kildare. www.excavations.ie.
—— 2003:1226. Site 121, Balriggan 1, Balriggan, Co. Louth. www.excavations.ie.
—— 2009. Fragments and furnaces: discoveries along the N18. *Seanda*, 4, 46-48.
—— 2010. An early medieval landscape at Balriggan, Co. Louth, in C. Corlett & M. Potterton (eds.) *Death and burial in early medieval Ireland, in light of recent archaeological excavations*. Bray: Wordwell, 91-102.
Delaney, S. & Roycroft, N. 2003. Early medieval enclousure at Balriggan, Co. Louth. *Archaeology Ireland*, 17(2), 16-19.
Delaney, T. G. 1975. Monastic burials and a gilt bronze book-cover fragment from the Cathedral of the Holy Trinity, Downpatrick. *Ulster Journal of Archaeology*, 38, 57-59.
Dennehy, E. 2001:1242. Shandon, Dungarvan, Co. Waterford.www.excavations.ie.
—— 2006:2150. Macreddin Brook Golf Club, Co. Wicklow.www.excavations.ie.
—— 2007. Kiltenan South, in G. Grogan *et al*. (eds.) *The Bronze Age landscapes of the pipeline to the west.* Bray: Wordwell, 291.
Desmond, S. 1999:0872. Lackan, Multyfarnham, Co. Westmeath. www.excavations.ie.
—— 2007:0859. Srowland, Co. Kildare. www.excavations.ie.
Dickinson, C. W. & Waterman, D. M. 1959. Excavations at a rath with motte at Castleskreen, Co. Down. *Ulster Journal of Archaeology*, 22, 67-82.
—— 1960. Excavations at Castle Skreen, Co. Down. *Ulster Journal of Archaeology*, 23, 63-77.
Dillon, M (ed.) 1962. *Lebor na Cert*. Dublin: Irish Texts Society.
Dimmock, J. F. (ed.) 1867. *Giraldi Cambrensis: Opera. Vol. V.* London: Longmans, Green, Reader &

Dyer.
Doehaerd, R. E. 1978. *The Early Middle Ages in the West: Economy and Society*. Amsterdam: North Holland Publishing Company.
Doherty, C. 1980. Exchange and trade in Early Medieval Ireland. *Journal of the Royal Society of Antiquaries of Ireland*, 110, 67-89.
—— 1984. The Use of Relics in Early Ireland, in P. Ní Chatháin & M. Richter (eds.) *Ireland and Europe: The Early Church*. Stuttgart: Klett-Cotta, 89-101.
—— 1985. The monastic towns in early medieval Ireland, in H. Clarke & A. Simms (eds.) *The Comparative History of Urban Origins in Non-Roman Europe: Ireland, Wales, Denmark, Germany, Poland and Russia from the ninth to the thirteenth century, Vol. 1*. Oxford: Oxford University Press, 45-75.
—— 2000. Settlement in early medieval Ireland: a review, in T. B. Barry (ed.) *A history of settlement in Ireland*. London: Routledge, 50-80.
Dolley, R. H. M. 1959. A neglected tenth-century coin-hoard from Donegal. *Ulster Journal of Archaeology*, 22, 56-58.
—— 1960. A hoard of tenth-century Anglo-Saxon coins from Glendalough. *Journal of the Royal Society of Antiquaries of Ireland*, 90, 41-47.
—— 1960. Some new light on the Viking-age silver hoard from Mungret. *North Munster Antiquarian Journal*, 8(3), 116-33.
—— 1961. The 'lost' hoard of tenth-century Anglo-Saxon silver coins from Dalkey. *Journal of the Royal Society of Antiquaries of Ireland*, 91, 1-18.
—— 1961-62. The Viking Age Coin-Hoard from Ballycastle in Co Antrim. *Ulster Journal of Archaeology*, 24-25, 88-90.
—— 1962. The coins from Béal Ború. Journal of the Cork Historical and Archaeological Society, 67, 18-27.
—— 1968a. Two numismatic notes 1: Some Hiberno-Norse coins of Dublin recently discovered on the Baltic island of Gotland 2: The mythical Roman coin hoard from Tara. *Journal of the Royal Society of Antiquaries of Ireland*, 98, 57-65.
—— 1968b. The Hiberno-Norse coins in the 1967 find from Immelunda Parish, Gotland. *Journal of the Royal Society of Antiquaries of Ireland*, 98, 197-99.
—— 1975. The 1973 Viking-age coin-find from Dunmore Cave. *Old Kilkenny Review (Second Series),* 1(2), 70-79.
—— 1976. Roman coins from Ireland and the date of St Patrick. *Proceedings of the Royal Irish Academy*, 76C, 181-90.
—— 1978. The Hiberno-Norse coins of Gotlands Fornsal, Visby. *British Numismatics Journal*, 48, 29-34.
Dolley, R. H. M. & Lynn, C. J. 1976. A provisional note on the incidence of coin-hoarding in Viking age Ireland. *Irish Archaeological Research Forum*, 3(2), 1-6.
Dolley, R. H. M. and Morrison, K. F. 1963. Finds of Carolingian coins from Great Britain and Ireland. *British Numismatics Journal*, 32, 75-87.
Donnelly, C., Macdonald, P, Murphy, E & Beer, N. 2003. Excavation at Boho High Cross, County Fermanagh. *Ulster Journal of Archaeology*, 62, 121-42.
Doody, M. 1992:0021. Conva, Co. Cork. www.excavations.ie.
—— 1995. Conva, Co Cork. *Discovery Programme Reports 2*, Dublin: Royal Irish Academy, 12-38.
—— 2008 (ed.) *The Ballyhoura Hills Project*. Discovery programme monograph 7. Dublin: Wordwell for the Discovery Programme.
—— 2008. Enclosure and Pit complex at Conva, Co. Cork, in Doody, M. G. (ed.) *The Ballyhoura Hills Project: Discovery Programme Monograph 7*. Bray: Wordwell.
Dowd, M. 2001. Archaeology of the subterranean world. *Archaeology Ireland*, 15(1), 24-29.
—— 2002. Kilgreany, Co. Waterford: biography of a cave. *Journal of Irish Archaeology*, 11, 77-98.
—— 2004:0914. Dunmore Cave, Mohil, Kilkenny. www.excavations.ie.
—— 2007. Living and dying in Glencurran Cave. *Archaeology Ireland*, 21(1), 36-39.
Dowd, M. & Corlett, C. 2002. Brothers in Caves - lost archives of subterranean Waterford rediscovered. *Archaeology Ireland*, 16(1), 8-10.
Dowd, M., Lynch, L.G. & McCarthy, M. 2007. Recent archaeological discoveries in Dunmore cave, county Kilkenny: Further questions regarding Viking age activity at the site. *Old Kilkenny Review*, 59, 18-37.
Dowling, M. & Taylor, K. 2007. Dollas Lower, in E. Grogan *et al*. (eds.) *The Bronze Age landscapes of the pipeline to the west.* Bray, Wordwell, 273-74.
Downey, L., Kelly, E. P., & Stanton, C. 2006. Bog Butter: Dating Profile and Location. *Archaeology Ireland*, 20(1), 32-34.
Doyle, I. W. 1998. The early medieval activity at Dalkey Island, Co. Dublin: a re-assessment. *Journal of Irish Archaeology*, 9, 89-103.
—— 1999. A 'Ceramic Platter' of Mediterranean origin from the Ringfort at Garranes, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 104, 69-76.

—— 2005. Excavation of a prehistoric ring-barrow at Kilmahuddrick, Clondalkin, Dublin 22. *Journal of Irish Archaeology*, 14, 43-75.
—— 2008. The early medieval pottery from the excavations at Rosepark townland, Balrothery, Co. Dublin, in J. Carroll. *Archaeological Excavations at Rosepark, Balrothery, Co. Dublin*. Dublin: Judith Carroll & Co. Ltd, 112-15.
—— 2009. Mediterranean and Frankish Pottery imports in early medieval Ireland. *Journal of Irish Archaeology*, 18, 17-62.
Doyle, M. 2007. Dress, ornament and bodily identities in early medieval Ireland: An archaeology of personhood. *Trowel*, 11, 26-40.
Doyle, T. 2007:0760. Ballyvas, Co. Kildare. www.excavations.ie.
—— 2009. Hair of the dog: evidence of early medieval food production and feasting at Ballyvass, Co. Kildare, in M. Stanley *et al*. (eds.) *Dining and Dwelling: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, No. 6, August 2008*. Bray: Wordwell, 55-64.
Drew, D. P. & Huddart, D. 1980. Dunmore Cave, County Kilkenny: a reassessment. *Proceedings of the Royal Irish Academy*, 80B, 1-23.
Duffy, C. 2003:0880. Blackchurch, Co. Kildare. www.excavations.ie.
—— 2004:0800. Blackchurch, Co. Kildare. www.excavations.ie.
Duffy, S. (ed.) 2000. *Medieval Dublin I: proceedings of the Friends of Medieval Dublin Symposium 1999*. Dublin: Four Courts Press.
—— (ed.) 2001. *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000*. Dublin: Four Courts Press.
—— (ed.) 2002. *Medieval Dublin III: proceedings of the Friends of Medieval Dublin Symposium 2001*. Dublin: Four Courts Press.
—— (ed.) 2003. *Medieval Dublin IV: proceedings of the Friends of Medieval Dublin Symposium 2002*. Dublin: Four Courts Press.
—— (ed.) 2004. *Medieval Dublin V: proceedings of the Friends of Medieval Dublin Symposium 2003*. Dublin: Four Courts Press.
—— (ed.) 2009. *Medieval Dublin IX: proceedings of the Friends of Medieval Dublin Symposium 2007*. Dublin: Four Courts.
Duignan, M. 1951. Early monastic site, Kiltiernan East townland, Co. Galway. *Journal of the Royal Society of Antiquaries of Ireland*, 81, 73-75.
Dunlop, C. 2004:0436. Croft Road, Holywood, Co. Down. www.excavations.ie.
—— 2007:0054. Brokerstown Village, Knockmore, Co. Antrim. www.excavations.ie.
Dunne, L. 1998:0275. Garranebane, Co. Kerry. www.excavations.ie.

Earwood, C. 1991-92. Turned wooden vessels of the early historic period. *Ulster Journal of Archaeology*, 54-55, 154-59.
—— 1993. *Domestic wooden artifacts in Britain and Ireland from Neolithic to Viking time*s. Exeter: Exeter University Press.
Edwards, D. (ed.) 2004. *Regions and rulers in Ireland, 1100-1650: essays in honour of Kenneth Nicholls*. Dublin: Four Courts Press.
Edwards, N. 1990. *The archaeology of early medieval Ireland*. London: Batsford.
—— 2005. The archaeology of early medieval Ireland, c.400-1169: Settlement and economy, in D. Ó Cróinín (ed.) *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*. London: Oxford University Press, 549-607.
Effros, B. 2002. *Caring for body and soul: burial and the afterlife in the Merovingian world*. Pennsylvania: Pennsylvania State University Press.
Elder, S. 1999:0829. 26 Killeenyarda, Holycross, Co. Tipperary. www.excavations.ie.
—— 2001:1241. Shandon, Dungarvan, Co. Waterford. www.excavations.ie.
—— 2002:1790. Shandon, Dungarvan, Co. Waterfod. www.excavations.ie.
—— 2004:0453. Grange, Baldoyle, Co. Dublin. www.excavations.ie.
—— 2006:1279. Castletown, Tara, Co. Meath. www.excavations.ie.
Elliott, R. 2001:1287. Lackan, Multyfarnham, Co. Westmeath. www.excavations.ie.
Empereur, J-Y. & Picon, M. 1989. Les régions de production d'amphores impérials en Méditerranée orientale, in A. Hesnard *et al*. (eds.) *Amphores romaines et histoire économique; Dix ans de recherché*. Rome, 223-48.
Eogan, G. 1968. Excavations at Knowth, Co. Meath, 1962-1965. *Proceedings of the Royal Irish Academy*, 66C (4), 299-382.
—— 1971:0028. Knowth, Co. Meath. www.excavations.ie.
—— 1973. A decade of excavations at Knowth. *Irish University Review (UCD)*, 66-79.
—— 1974. Report on the excavations of some passage graves, unprotected inhumation burials and a settlement site at Knowth, Co. Meath. *Proceedings of the Royal Irish Academy*, 74C, 11-112.

—— 1975:0030. Knowth, Co. Meath. www.excavations.ie.
—— 1977. The Iron Age and early Christian settlement at Knowth, Co. Meath, Ireland, in V. Markotic (ed.) *Ancient Europe and the Mediterranean, studies in honour of Hugh Hencken*. Warminster: Aris & Phillips Ltd, 69-76.
—— 1991. Irish Antiquities of the Bronze Age, Iron Age and Early Christian period in the National Museum of Denmark. *Proceedings of the Royal Irish Academy*, 91C, 133-76.
—— 2004. Knowth, 40 years on. *Ríocht na Mídhe*, 15, 1-11.
—— 2007. Knowth in the early Christian period: the cultural and chronological context of the animal bone assemblage, in F. McCormick & E. V. Murray, *Excavations at Knowth 3: Knowth and the zooarchaeology of early Christian Ireland*. Dublin: Royal Irish Academy, 1-6.
Eogan, G. & Bradley, J. 1977. A souterrain at Balrenny near Slane, Co. Meath. *Journal of the Royal Society of Antiquaries of Ireland*, 107, 96-103.
Eogan, J. 1995:0266. Ardnagross, Co. Westmeath. www.excavations.ie.
——1998:0503. Bettystown**,** Co. Meath. www.excavations.ie.
Eogan, J. & Reid, M. 2000:0760. Ninch, Laytown, Co. Meath. www.excavations.ie.
Eogan, J. & Turrell, S. 1999:0485. Ballygeale, Site 1, Co. Limerick. www.excavations.ie.
—— 1999. 1999:0486. Ballygeale, Site 2, Co. Meath. www.excavations.ie.
Etchingham, C. 1991. The Early Irish Church: Some Observations on Pastoral Care and Dues. *Ériu*, 42, 99-118.
—— 1996. Early medieval Irish history, in K. Simms & K. McCone (eds.) *Progress in medieval Irish studies*. Maynooth: St Patrick's College Maynooth Department of Old and Middle Irish, 123-53.
—— 1999. *Church Organisation in Ireland A.D. 650-1000*. Naas: Laigin Publications.
—— 2010. *Laithlinn*, 'Fair Foreigners' and 'Dark Foreigners': the identity and provenance of the Vikings in ninth-century Ireland', in Sheehan and D. Ó Corraīn (eds.) *The Viking Age: Ireland and the west*. Dublin: Four Courts Press, 80-88.
Evans, E. E. 1945. Field Archaeology in the Ballycastle District. *Ulster Journal of Archaeology*, 8, 14-32.
—— 1946. Souterrains in Co. Antrim. *Ulster Journal of Archaeology*, 9, 79-83.
—— 1950. Rath and souterrain at Shaneen Park, Belfast, townland of Ballyaghagan, Co. Antrim. *Ulster Journal of Archaeology*, 13, 6-27.
—— 1952. Two Belfast Raths. *Ulster Journal of Archaeology*. 15, 84-86.
—— 1966. *Prehistoric and Early Christian Ireland*. New York: Barnes & Noble.
—— 1968. Archaeology in Ulster since 1920. *Ulster Journal of Archaeology*, 31, 3-8.
—— 1973. *The Personality of Ireland*. Cambridge.
Evans, G. 1999. Emyr Estyn Evans and NI by Matthew Stout- Review. *Ulster Journal of Archaeology*, 58, 134-42.

Fahy, E. M. 1953. A souterrain at Ballyarra, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 58, 55-59.
—— 1969. Early settlement in the Skibbereen area. *Journal of the Cork Historical and Archaeological Society*, 75, 147-56.
Fairburn, N. 2003:1759. Site 25(ii), Hughes' Lot East and Kilscobin, Co.,Tipperary. www.excavations.ie.
—— 2004:1158. Ardbraccan, Co. Meath. www.excavations.ie.
Fanning, T. 1970. Excavation of a ringfort at Bowling Green, Thurles, Co. Tipperary. *North Munster Antiquarian Journal*, 13, 6-21.
—— 1970:0019. Gallarus td, Co. Kerry. www.excavations.ie.
—— 1972. Excavations of a ringfort at Narraghmore, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society*, 15(2), 171-77.
—— 1973-74. Excavation of a Ringfort at Pollardstown, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society*, 15(3), 251-61.
—— 1981. Excavation of an Early Christian cemetery and settlement at Reask, county Kerry. *Proceedings of the Royal Irish Academy*, 81C, 67-172.
—— 1987:0011. Rinnaraw, Co. Donegal. www.excavations.ie.
—— 1988:0011. Rinnaraw, Co. Donegal. www.excavations.ie.
—— 1989:0019. Rinnaraw, Co. Donegal. www.excavations.ie.
—— 1990:0025. Rinnaraw, Co. Donegal. www.excavations.ie.
—— 1992:0032. Rinnaraw, Co. Donegal. www.excavations.ie.
—— 1992. Ringed Pins, the Hiberno-Norse and the discovery of Vinland. *Archaeology Ireland*, 6(1), 24-26.
—— 1994. *Viking age ringed pins from Dublin*. Dublin: Royal Irish Academy.
Farrell, R. 1990. The Crannóg Survey Project: The Lakes of the West Midlands. *Archaeology Ireland*, 4(1), 27-29.
Farrimond, C. 2002:0004, Cairncastle Road, Ballygalley, Co. Antrim. www.excavations.ie.
Fibiger, L. 2005. Minor ailments, furious fights and deadly diseases: investigating life in Johnstown,

County Meath, A.D. 400-1700, in J. O'Sullivan & M. Stanley (eds.) *Recent Archaeological Discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell, 99-110.
—— 2010. The human skeletal remains from Ratoath, Co. Meath, in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin: Wordwell, 117-138.
Fibiger, L., Carlin, N. & Kinsella, J. 2008. The social and economic context of the enclosures, in N. Carlin *et al* (eds.) *The Archaeology of Life and Death on the Boyne Floodplain: The Linear Landscape of the M4*. National Roads Authority Scheme Monograph Series 2. Bray: Wordwell, 113-29.
Fitzgerald, M. 2006a. Archaeological discoveries on a new section of the N2 in counties Meath and Dublin, in J. O'Sullivan & M. Stanley (eds.) *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 29-42.
—— 2006b. Archaeological discoveries on the N2 Finglas-Ashbourne Road Scheme. *Seanda*, 1, 40-43.
FitzPatrick, E. 2004. *Royal inauguration in Gaelic Ireland c.1100-1600: a cultural landscape study*. Woodbridge: Boydell.
—— 2009. Native Enclosed Settlement and the Problem of the Irish 'Ring-fort'. *Medieval Archaeology*, 53, 271-307.
Fitzpatrick, M. 1999:0499. Croom, Co. Limerick. www.excavations.ie.
—— 2001. Cahermore stone fort, Co. Clare: survey and excavation. *North Munster Antiquarian Journal*, 41, 45-64.
Flanagan, D. & Flanagan, L. 1994. *Irish Placenames*. Dublin: Gill and Macmillan.
Flanagan, L. N. W. 1966. Dark Age sites in Ballymacrea Lower, Co Antrim. *Ulster Journal of Archaeology*, 29, 115-16.
Foley, C. 1972:0020. Dunbell, Co. Kilkenny. www.excavations.ie.
—— 1980-84:0191. Tamlaght, Co. Tyrone. www.excavations.ie.
—— 2006. Excavation of a ringfort at Dunbell Big, Co. Kilkenny. *Journal of the Royal Society of Antiquaries of Ireland*, 136, 5-23.
Forsythe, W., McConkey, R., & McErlean, T. 2002. *Strangford Lough: Maritme archaeology on the County Down Coast.* Bray: Wordwell.
Forte, A., Oram, R., & Pedersen, F. 2005. *Viking Empires*. Cambridge: Cambridge University Press.
Fowler, P. J. 2002. *Farming in the first millennium AD*. Cambridge: Cambridge University Press.
Fredengren, C. 2001. Poor people's crannogs. *Archaeology Ireland*, 15(4), 24-25.
—— 2002a. *Crannogs: a study of people's interaction with lakes, with particular reference to Lough Gara in the north-west of Ireland*. Bray: Wordwell.
—— 2002b. Discovery Programme in Lough Kinsale. *Archaeology Ireland*, 16(4), 20-23.
Fredengren, C., McClatchie, M., & Stuijts, I. 2004. Connections and distance: Investigating social and agricultural issues relating to early medieval crannogs in Ireland. *Environmental Archaeology*, 9, 173-78.

Gaffikin, M., & Davies, O. 1938. Lough Island Reevy. *Ulster Journal of Archaeology*, 1, 201-3.
Gahan, A. 1993:0036. No. 2 Stone Row, Coleraine. www.excavations.ie.
—— 1997. A course on Irish prehistory- Excavations at Castle Upton, Templepatrick, Co. Antrim. *Archaeology Ireland*, 11(2), 29-31.
—— 1997:0324. Ashfort, Co. Limerick. www.excavations.ie.
—— 1998:0376. Ashfort, Co. Limerick. www.excavations.ie.
—— 1998:0469. Mullagharlin and Haggardstown, Co. Louth. www.excavations.ie.
——1999. Pottery Report, in N. Crothers, Excavations in Upper English Street, Armagh'. *Ulster Journal of Archaeology*, 58, 70-80.
—— 2000:0018. Lissue, Co. Antrim. www.excavations.ie.
—— 2001:0003. Leyland Road Industrial Estate, Ballycastle, Co. Antrim. www.excavations.ie.
—— 2003. Appendix: The Pottery, in D. Hurl, Excavations in Abbey St., Armagh. *Ulster Journal of Archaeology* 62, 110-15.
Gahan, A. & McCutcheon, C. 1997a. Medieval Pottery, in M. F. Hurley & O. M. B. Scully (eds.) *Late Viking Age and Medieval Waterford*. Waterford Corporation, 285-336.
Gahan, A. & McCutcheon, C. 1997b. Medieval Pottery, in C. Walsh (ed.) *Archaeological Excavations at Patrick, Nicholas and Winetavern Street, Dublin*, Dublin, 109-23.
Gahan, A, McCutcheon, C. & Twohig, D. C. 1997. Medieval Pottery, in C. C. Twohig (ed.) *Skiddy's Castle and Christ Church Cork – Excavations 1974-1977*. Cork, 108-29.
Gaskell-Brown, C. 1979. Excavations at Greencastle, County Down, 1966-1970. *Ulster Journal of Archaeology*, 42, 51-65.
Gaskell-Brown, C. & Brannon, N. F. 1978. The rath in Hillsborough Fort, County Down. *Ulster Journal of Archaeology*, 41, 78-87.
Gaskell-Brown, C. & Harper, A. E. T. 1984. Excavations on Cathedral Hill, Armagh, 1968 (enclosure

ditch, metal workshop, buildings, many finds). *Ulster Journal of Archaeology*, 47, 109-61.
Gavin, F. & Newman, C. 2007. Notes on Insular Silver in the 'military style'. *Journal of Irish Archaeology* 16, 1-10.
Gem, R. 2006. Saint Flannan's Oratory at Killaloe: a Romnesque building of *c*. 1100 and the patronage of king Muirchertach Ua Briain, in D. Bracken and D. Ó Riain-Raedel (ed.) *Ireland and Europe in the twelfth century: Reform and Renewal*. Dublin: Four Courts, 74-105.
Geraghty, S. 1996. *Viking Dublin: botanical evidence from Fishamble Street*. Dublin: Royal Irish Academy.
Gerriets, M. 1985. Money among the Irish: Coin hoards in Viking Age Ireland. *Journal of the Royal Society of Antiquaries of Ireland*, 115, 121-39.
Getty, E. 1855. Notices of the Round Towers of Ulster. *Ulster Journal of Archaeology*, 3, 14-32; 110-16; 292-300.
—— 1856. Notices of the Round Towers of Ulster. *Ulster Journal of Archaeology*, 4, 62-71; 128-39; 173-91.
Giacometti, A. 2006. Living in the Landscape. *Archaeology Ireland*, 20(2), 36-39.
Gibbons, E. 1994:0116. 'Cathair Fionnúrach', Ballnavenooragh, Co. Galway. www.excavations.ie.
—— 1997:0228. 'Cathair Fionnurach', Ballynavenooragh, Co. Kerry, cashel/stone fort. www.excavations.ie.
Gibbons, E. & Kelly, E. P. 2003. A Viking Age farmstead in Connemara. *Archaeology Ireland*, 17(1), 28-31.
Gibbons, M. 2005. Athlunkard (Ath-an-Longphort): A Reassessment of the Proposed Viking Fortress in Fairyhill Td, County Clare. *The Other Clare*, 29, 22-25.
Gibbons, M. & Gibbons, M. 2009. The search for the ninth-century longhphort: early Viking-Age Norse fortifications and the origins of urbanization in Ireland, in S. Duffy (ed.), *Medieval Dublin VIII - proceedings of the Friends of Medieval Dublin Symposium 2006*. Dublin: Four Courts Press, 9-20.
Gillespie, R. 2001:0927, Rossbeg II, Co. Mayo. www.excavations.ie.
—— 2007. Prehistory and history on the N5 Charlestown Bypass in counties Mayo and Roscommon, in J. O'Sullivan & M. Stanley (eds.) *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*. Bray: Wordwell, 11-24.
Gillespie, R. F. & Kerrigan, A. 2010. *Of Troughs and Tuyères: The Archaeology of the N5 Charlestown Bypass*. Dublin, National Roads Authority.
Gilmore, S. 1998:0008. Market Street, Armagh. www.excavations.ie.
—— 2000:0163. Magheramenagh, Co. Derry. www.excavations.ie.
—— 2001:0304. Brackenagh East, Co. Down. www.excavations.ie.
—— 2003:0020. Lisnalinchy, Co. Antrim. www.excavations.ie.
—— 2003:1848. Pubble Rath, Pubble, Newtownstewart, Co. Tyrone. www.excavations.ie.
Gittings, A. S. R. 1986:0075. St Peter's Church, Co. Waterford. www.excavations.ie.
—— 1987:0052. St Peter's Church, Co. Waterford. www.excavations.ie.
Glasscock, R. E. 1970. Excavations 1968-69. *Old Kilkenny Review*, 22, 31-34.
—— 1970:0030, Leigh td (Liathmore—Mochoemog), Co. Tipperary. www.excavations.ie.
—— 1971. Excavations at Liathmore-Mochoemog, Co. Tipperary, 1970. *Old Kilkenny Review*, 23, 45-46.
Gormley, S. 2004a. Appendix 1: Pottery Report, Grangemore, Co. Derry, in G. Plunkett, Archaeology and paleoenvironment at Grangemore Dunes, County Derry. *Ulster Journal of Archaeology*, 63, 11-12.
—— 2004b. The Pottery, in S. Anderson and A. R. Rees, The excavation of a medieval rural settlement site at Portmuck, Islandmagee, County Antrim. *Ulster Journal of Archaeology* 63, 86-92.
Gosling, P. 1980-84:0137. Marshes Upper, Co. Louth. www.excavations.ie.
——1980-84:0138. Marshes Upper, Co. Louth. www.excavations.ie.
—— 1991. From Dun Delca to Dundalk: the Topography and Archaeology of a Medieval Frontier Town, A.D. *c*. 1187-1700. *Journal of the Louth Archaeological and Historical Society*, 22(3), 221-353.
Gowen, M. (ed.) 1988. *Three Irish gas pipelines: new archaeological evidence in Munster*. Dublin: Wordwell.
—— 1988:0016. Gracedieu, Co. Dublin. www.excavations.ie.
—— 1988:0018. Kilshane, Co. Dublin. www.excavations.ie.
—— 1988:0021. Westereave, Co. Dublin. www.excavations.ie.
—— 1988:0051. Colp West, Co. Meath. www.excavations.ie.
—— 1988:0055. Smithstown, Co. Meath. www.excavations.ie.
—— 1992a. Excavation of two souterrain complexes at Marshes Upper, Dundalk, Co. Louth. *Proceedings of the Royal Irish Academy*, 92C, 55-121.
—— 1992b. *Report on monitoring, testing and rescue excavations at Christchurch Place, Dublin*. Dublin: Dúchas.
—— 2001. Excavations at the site of the church and tower of St Michael le Pole, Dublin, in S. Duffy

(ed.) *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000*. Dublin: Four Courts Press, 13-52.
Gowen, M., Phillips, M., & Ó Néill, J. (eds.) 2005. *The Lisheen Mine Archaeological Project 1996-98*. Bray: Wordwell.
Gowen, M., & Scally, G. 1996. *Summary report on excavations at 5-7 Exchange Street Upper/33-34 Parliament Street, Dublin*. Dublin: Temple Bar Properties, 1996.
Gracie, C. 1997:0340. Fanningstown, Co. Limerick. www.excavations.ie.
Graham, B. J. 1987. Urban genesis in early medieval Ireland. *Journal of Historical Geography*, 13(1), 3-16.
—— 1993. Early medieval Ireland: settlement as an indicator of economic and social transformation *c.* 500-1100 A.D., in B. J. Graham & L. J. Proudfoot (eds.) *An Historical Geography of Ireland*. London: Academic Press, 19-57.
Graham, B. J. & Proudfoot, L. J. (eds.) 1993. *An historical geography of Ireland*. London: Academic Press.
Grant, C. 1992:0144. Glenbaun, Co. Mayo. www.excavations.ie.
—— 1993:0175. Glenbann, Co. Mayo. www.excavations.ie.
Gregory, R.A. 1999:0769. Kiltullagh Hill, Kiltullagh, Co. Roscommon. www.excavations.ie.
—— 2000:0858. Kiltullagh Hill, Kiltullagh, Co. Roscommon. www.excavations.ie.
Griffiths, D. 2010. *Vikings of the Irish Sea*. Stroud: The History Press.
Grogan, E. 1984. Excavation of an Iron Age burial at Furness. *Journal of the Kildare Archaeological and Historical Society*, 16(4), 298-316.
—— 2005. *The north Munster project volume 1: The later prehistoric landscape of south-east Clare*. Dublin: Wordwell for the Discovery Programme.
Gwynn, A. 1947. Medieval Bristol and Dublin, *Irish Historical Studies*, 5, 275-86.
Gwynn, A. & Hadcock, R. N. 1970. *Medieval Religious Houses Ireland: With an appendix to early sites*. London: Longmans.

Håkansson, S. 1981. University of Lund Radiocarbon Dates XIV. *Radiocarbon*, 23(3), 384-403.
Hall, R. 1973-74. A check-list of Viking-age coin finds from Ireland. *Ulster Journal of Archaeology*, 36-37, 71-86
—— 1974. A Viking grave in the Phoenix Park, Co. Dublin. *Journal of the Royal Society of Antiquaries of Ireland*, 104, 39-43.
—— 1978. A Viking Age grave at Donnybrook, Co. Dublin. *Medieval Archaeology*, 22, 64-83.
Hall, V. A. 2000. The documentary and pollen analytical records of the vegetational history of the Irish landscape A.D. 200-1650. *Peritia*, 14, 85-110.
—— 2003. Vegetation history of mid- to western Ireland in the 2nd millennium A.D.; fresh evidence from tephra-dated palynological investigations. *Vegetation History and Archaeobotany*, 12, 7-17.
—— 2005. The vegetation history of monastic and secular sites in the midlands of Ireland over the last two millennia. *Vegetation History and Archaeobotany*, 15, 1-12.
Hall, V. A., Pilcher, J. R., & McCormac, F. G. 1993. Tephra-dated lowland landscape history of the north of Ireland, A.D. 750-1150. *New Phytologist* ,125, 193-202.
Hallgrímsson, B., Ó Doannabhain, B., Walters, G. B., Cooper, D. M. L., Guðbjartsson, D., & Stefánsson, K. 2004. Composition of the Founding Population of Iceland: Biological Distance and Morphological Variation in Early Historic Atlantic Europe. *American Journal of Physical Anthropology,* 124(3), 257-74.
Halliday, S. 2004:0651. Mooretown North, Swords, Co. Dublin. www.excavations.ie.
Halpin, E. 1988:0045. Dromiskin, Co. Louth. www.excavations.ie.
—— 1990:0002. 'Ballyshanaghill Rath', Ballyshanaghill, Co. Antrim. www.excavations.ie.
—— 1991:0003. Ballyshanaghill Rath, Crumlin, Co. Antrim. www.excavations.ie.
—— 1994:0232. Rathdown Upper, Co. Wicklow. www.excavations.ie.
—— 1997:0073. Drumbroneth, Co. Down. www.excavations.ie.
—— 1998:0115. Cathedral Hill, Downpatrick, Co. Down. www.excavations.ie.
—— 1999:0788. Cregg, Co. Sligo. www.excavations.ie.
—— 2000:0025. Derrymore, Bessbrook, Co. Antrim. www.excavations.ie.
Halpin, E. & Crothers, N. 1995:0007, Meadowbank Rath, Jordanstown, Co. Antrim. www.excavations.ie.
Hamerow, H. 2002. *Early Medieval Settlements: The Archaeology of Rural Communities in Northwest Europe, A.D. 400-900*. Oxford University Press.
Hamilton, N. E. S. A. 1870. *Willelmi Malmesbiriensis Monachi: de Gestis Pontifisum Anglorum*. London: Longman.
Hamilton-Dyer, S. 2002. Fish and fowl bones, in M. Comber (ed.), M.V. Duignan's Excavations at the ringfort at Rathgureen, Co. Galway, 1948-9. *Proceedings of the Royal Irish Academy*, 102C, 192-93.,

—— 2007. Exploitation of Birds and Fish in Historic Ireland, in E. M. Murphy & N. J. Whitehouse (eds.) *Environmental Archaeology of Ireland*. Oxford. Oxbow, 102-18.
—— 2008. Fish and fowl bones, in M. Comber, *The economy of the ringfort and contemporary settlement in early medieval Ireland*. BAR International Series, 1773. Oxford, Archaeopress, 294-95.
Hamlin, A. 1977. A recently discovered enclosure at Inch Abbey, County Down. *Ulster Journal of Archaeology*, 40, 85-88.
—— 1982. Early Irish Stone carving: Content and Context, in S. M. Pearse (ed.) *The early church in Western Britain and Ireland: studies presented to C.A. Ralegh Radford*. Oxford: Oxford University Press, 282-96.
—— 1984. The study of early Irish churches, in P. Ní Chatháin & M. Richter (eds.) *Ireland and Europe: The Early Church*. Stuttgart: Klett-Cotta, 117-26.
—— 1985. The archaeology of the Irish church in the eighth century. *Peritia*, 4, 279-99.
—— 2008. *The Archaeology of Early Christianity in the north of Ireland* (T. R. Kerr ed.), British Archaeological Report 460, Archaeopress, Oxford.
Hamond, F.W. 1980-84:0013. Carnlough North (Windy Ridge), Co. Antrim. www.excavations.ie.
Hamp, E. P. 1987. The ogam inscriptions and their geminate symbols. *Ériu*, 38, 45-72.
Hanley, K. 1997:0351, Fish Lane/Sir Harry's Mall, King's Island, Co. Limerick. www.excavations.ie.
—— 1999:0687, Ferganstown and Ballymackon, Co. Meath. www.excavations.ie.
Hanson, R. P. C. 1971. *English translation of the 'Confession' and the 'Letter to Coroticus' of Saint Patrick*. Nottingham.
Harbison, P. 1970. How old is Gallarus oratory? *Medieval Archaeology*, 14, 34-59.
—— 1978. *Irish art and architecture from prehistory to the present*. London: Thames and Hudson.
—— 1982. Early Irish churches, in H. Lowe (ed.) *Die Iren und Europa im fruheren Mittelater*. 1, Stutgart: Klett Cotta, 618-29.
—— 1991. *Pilgrimage in Ireland: the monuments and the people*. London: Barrie & Jenkins.
—— 1992. *The high crosses of Ireland: an iconographical and photographic survey (2 Vols.)*. Bonn: Habelt.
—— 1998. A shaft-fragment from Slane, Co. Meath and other recent high cross discoveries, in C. Manning (ed.) *Dublin and beyond the Pale: studies in honour of Patrick Healy*. Bray: Wordwell in association with Rathmichael Historical Society, 171-76.
—— 1999. *The golden age of Irish art: the medieval achievement, 600-1200*. London: Thames and Hudson.
—— 2002. *'Our treasure of antiquities': Beranger and Bigari's antiquarian sketching tour of Connacht in 1779: based on material in the National Library of Ireland and the Royal Irish Academy*. Bray: Wordwell.
Harden, D. B. 1956. Glass Vessels in Britain and Ireland, A.D. 400-1000, in D. B. Harden (ed.) *Dark Age Britain: Studies Presented to E.T. Leeds with a bibliography of his works*. London: Methuen, 132-67.
—— 1984. (The Glass) Excavations on Cathedral Hill, Armagh [Gaskell Brown & Harper]. *Ulster Journal of Archaeology*, 47, 109-61.
Hare, M. & Hamlin, A. 1986. The study of early Irish church architecture in Ireland: an Anglo-Saxon viewpoint with an appendix to documentary evidence for round towers, in L. A. S. Butler & R. K. Morris (eds.) *The Anglo-Saxon Church: papers on history, architecture, and archaeology in honour of Dr H.M. Taylor*. London: Council for British Archaeology, 130-45.
Harney, L. 2006. Glendalough: power, politics and religion in an ecclesiastical landscape. (Unpublished M.A.). Dublin: University College Dublin.
Harper, A. E. T. 1970:0003. Tully Td., Co. Antrim. www.excavations.ie.
—— 1971:0006. Polegrass, Co. Antrim. www.excavations.ie.
—— 1971:0012. Crossnacreevy, Co. Down. www.excavations.ie.
—— 1972a. The excavation of a rath in Mullaghbane Township, Co Tyrone. *Ulster Journal of Archaeology*, 35, 37-44.
—— 1972b. A souterrain at Cloughorr, Co Antrim. *Ulster Journal of Archaeology*, 35, 59-61.
—— 1973-74. The excavation of a rath in Crossnacreevy Townland, County Down. *Ulster Journal of Archaeology*, 36-37, 32-42.
Harrington, C. 2002. *Women in a Celtic Church. Ireland 450-1150*. Oxford: Oxford University Press.
Harrison, S. H. 2001. Viking graves and grave-goods in Ireland, in A. Larsen (ed.) *The Vikings in Ireland*. Roskilde: The Viking Ship Museum, 61-75.
Hartnett, P. J. & Eogan, G. 1964. Feltrim Hill, co. Dublin: A Neolithic and early Christian site. *Journal of the Royal Society of Antiquaries of Ireland*, 94, 1-38.
Hayden, A. 1993:0117. Bray, Valentia Island, Co. Kerry. www.excavations.ie.
—— 1994:0117. Bray Head, Valentia Island, Co. Kerry, "Crompeol". www.excavations.ie.
—— 1994:0119. Coarhabeg, Valentia Island, Co. Kerry. www.excavations.ie.
—— 1994:0087. Werburgh St, Dublin. www.excavations.ie.

—— 1996:0190. Maynooth Castle, Maynooth, Co. Kildare. www.excavations.ie.
—— 1997:0231. Bray Head, Valentia Island, Co. Kerry. www.excavations.ie.
—— 1998:0267. Bray Head, Valencia Island, Co. Kerry. www.excavations.ie.
—— 1999:0324. Bray Head, Valencia Island, Co. Kerry. www.excavations.ie.
—— 1999:0405. Maynooth Castle, Maynooth, Co. Kildare. www.excavations.ie.
—— 2000:0423. Bray Head, Valentia Island, Co. Kerry, early medieval buildings. www.excavations.ie.
—— 2002. The excavation of pre-Norman defences and houses at Werburgh Street, Dublin, a summary, in S. Duffy (ed.) *Medieval Dublin III: proceedings of the Friends of Medieval Dublin Symposium 2001*. Dublin: Four Courts Press, 44-68.
—— 2003:2002. Rathcolman, Co. Westmeath. www.excavations.ie.
—— 2004:0721. Church Island, Ballycarbery West, Valentia, Co. Kerry. www.excavations.ie.
—— 2005:0664. Church Island, Ballycarbery West, Valentia, Co. Kerry. www.excavations.ie.
Hayes, J.W. 1972. *Late Roman Pottery*. London: British School at Rome.
Hayes, A. 2002:1186. Kilbane, Co. Limerick. www.excavations.ie.
—— 2003:1148. Fields I-III, Kilbane II, Castletroy, Co. Limerick. www.excavations.ie.
—— 2006. Archaeological investigation of a souterrain at Tateetra, Dundalk, County Louth, in J. O'Sullivan & M. Stanley (eds.) *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 3, 53-61.
Heckett, E. W. 1991. Textiles in Archaeology. *Archaeology Ireland*, 5(2), 11-13.
—— 2003. Viking Age Headcoverings from Dublin: medieval Dublin Excavations 1962-81, Ser B. Vol. 6. Dublin: Royal Irish Academy
Heller, R. 1976. *Die Laxdoela Saga*. Berlin: Akademie-Verlag.
Hencken, H. O' N. 1936. Ballinderry Crannog no. 1. *Proceedings of the Royal Irish Academy*, 43C, 103-239.
—— 1938. *Cahercommaun: a stone fort in County Clare*. Dublin: Journal of the Royal Society of Antiquaries of Ireland.
—— 1939. Long Cairn at Creevykeel, Co. Sligo. *Journal of the Royal Society of Antiquaries of Ireland*, 69, 53-98.
—— 1942. Ballinderry Crannog no. 2. *Proceedings of the Royal Irish Academy*, 47C, 1-76.
—— 1950. Lagore Crannog: An Irish Royal Residence from the Seventh to Tenth Centuries. *Proceedings of the Royal Irish Academy*, 53C, 1-247.
Henderson, J. 1984. The Glass, in Ivens, R.J. (ed.) Movilla Abbey, Newtownards, County Down: Excavations 1981. *Ulster Journal of Archaeology*, 47, 98-101.
—— 1988. The nature of the Early Christian glass industry in Ireland: some evidence from Dunmisk fort, Co Tyrone. *Ulster Journal of Archaeology*, 51, 115-26.
—— 1993. Scientific analysis of the glass. *Medieval Archaeology*, 37, 46-49.
—— 2000. The production, technology of Irish early Christian glass with special reference to beads and enamels, in P. J. London (ed.) *Glass in Britain and Ireland A.D. 350 - 1100*. London: British Museum, 143-60.
Henderson, J. & Ivens, R.J. 1992. Dunmisk and glass-making in Early Christian Ireland. *Antiquity*, 66, 52-64.
Henry, F. 1940. *Irish art in the early Christian period: with 80 collotype plates and numerous text illustrations*. London: Methuen.
—— 1945. Remains of the Early Christian period on Inishkea North, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland*, 75, 127-55.
—— 1951a. New monuments from Inishkea North, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland*, 81, 65-69.
—— 1951b. Habitation sites on Inishkea North, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland*, 81, 75-76.
—— 1952. A wooden hut on Inishkea North, Co. Mayo (Site 3, House A). *Journal of the Royal Society of Antiquaries of Ireland*, 82, 163-78.
—— 1957. Early monasteries, beehive huts, and dry-stone houses in the neighbourhood of Caherciveen and Waterville Co. Kerry. *Proceedings of the Royal Irish Academy*, 58C, 45-165.
—— 1964. *Irish high crosses = Árd-chroiseanna Éireann*. Dublin: Three Candles Ltd.
—— 1965. *Irish art in the early Christian period (to 800 A.D.)*. London: Methuen.
—— 1967. *Irish Art during the Viking Invasions (800-1200 A.D.)*. London: Methuen Press.
—— 1970. *Irish art in the Romanesque period (1020-1170 A.D.)*. London: Methuen.
Henry, M. 1998:0617. Loughnafina, Co. Tipperary. www.excavations.ie.
—— 1999:0765. Cloongownagh, Co. Roscommon. www.excavations.ie.
—— 1999:0815. Killemly, Cahir, Co. Tipperary. www.excavations.ie.
—— 2004:0086. Chapeltown, Co. Carlow. www.excavations.ie.
—— 2004:1789. Ballygerry, Co. Wexford. www.excavations.ie.
Herity, M. 1995a. *Studies in the layout, buildings, and art in stone of early Irish monasteries*. London:

Pindar Press.
—— 1995b. Two island hermitages in the Atlantic: Rathlin O'Birne, Donegal, and Caher Island, Mayo. *Journal of the Royal Society of Antiquaries of Ireland*, 125, 85-128.
Heslip, R. J. 1984. The Coins, in C. Gaskell-Brown & A. E. T. Harper (eds.) Excavations on Cathedral Hill, Armagh, 1968. *Ulster Journal of Archaeology*, 47, 134.
Hill, P. 1997. *Whithorn and St Ninian: the excavation of a monastic town 1984–91*. Stroud: Whithorn Trust/Sutton Publishing.
Hodges, R. 1989. *Dark Age Economics: The origins of towns and trade: A.D. 600-1000*. (1st Ed. 1982). Duckworth: London.
—— 2004. The Shaping of Medieval north-western Europe, *Antiquity*, 78, 723-27.
Hodkinson, B. 1987. A reappraisal of the archaeological evidence for weaving in Ireland in the Early Christian period. *Ulster Journal of Archaeology*, 50, 47–53.
—— 1990:0081. King's Island, John's Ward B, (site 8), Co. Limerick. www.excavations.ie.
—— 1992:0127. 'St Mary's Cathedral', Co. Limerick. www.excavations.ie.
—— 1994. Excavations at Cormac's Chapel, Cashel, 1992 and 1993: a preliminary statement. *Tipperary Historical Journal*, 7, 167-74.
—— 1994:0144. Rock of Dunamase, Co. Laois. www.excavations.ie.
—— 1995:0176. Rock of Dunamase, Co. Laois. www.excavations.ie.
—— 1995. The Rock of Dunamase. *Archaeology Ireland*, 9(2), 18-21.
—— 1997:0315. Dunamase, Co. Laois. www.excavations.ie.
—— 2000:0949. Kilmore Upper, Co. Tipperary. www.excavations.ie.
Holm, P. 1986. The Slave trade of Dublin, ninth to twelfth centuries. *Peritia*, 5, 317-45.
Holman, K. 2007. *The Northern Conquest: Vikings in Britain and Ireland*. Oxford, Signal Books.
Horn, W., Marshall, J. W. & Rourke, G D. 1990. *The Forgotten hermitage of Skellig Michael*. (1st Edition). Berkeley: University of California Press
—— 2002. *The Forgotten hermitage of Skellig Michael*. (2nd Edition). Dublin: Dúchas.
Hourihane, C. (ed.) 2001. *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*. Princeton: Princeton University Press.
—— (ed.) 2004. *Irish art historical studies in honour of Peter Harbison* New Jersey: Princeton University, in association with Four Courts Press.
Howells, W. W. 1941. The early Christian Irish: the skeletons at Gallen Priory. *Proceedings of the Royal Irish Academy*, 46C, 103-219.
Hudson, B. T. 1999. The Changing economy of the Irish sea province, in B. Smith (ed.) *Britain and Ireland 900-1300: Insular responses to Medieval European change*. Cambridge: Cambridge University Press, 39-68.
—— 2006. *Irish Sea Studies, 900-1200*. Dublin: Four Courts Press.
Hughes, J. 2008. Appendix IVa - Faunal Report 2002, in G. Stout & M. Stout (eds.) *Excavations of an early medieval secular cemetery at Knowth Site M, County Meath*. Bray: Wordwell, 125-35.
Hughes, K. 1966. *The Church in early Irish society*. London: Methuen Press.
—— 1977. *Early Christian Ireland: introduction to the sources*. Cambridge: Cambridge University Press.
Hughes, K. & Hamlin, A. 1977. *The modern traveller to the early Irish church*. London: S.P.C.K.
Hull, G. 2004:0999. Coonagh West, Co. Limerick. www.excavations.ie.
Hull, G. & Comber, M. 2008. Caherconnell, Co. Clare and Cashel chronology. *Archaeology Ireland*, 22 (4), 30-33.
Hull, G. & Taylor, K. 2005. Archaeology on the route of the Ennis Bypass. *The Other Clare*, 29, 35-41.
—— 2007. N18 Ennis Bypass and N85 Western Relief Road – summary of the final archaeological results. *The Other Clare*, 31, 23-29.
Humphrey, J. W., Oleson, J. P. & Sherwood, A. N. 1998. *Greek and Roman technology: a sourcebook*. London: Routledge.
Hunt, J. 1951. Ballingarry Down, Ballingarry townland. *Journal of the Royal Society of Antiquaries of Ireland*, 51, 73.
Hunwicke, J. W. 2002. Kerry and Stowe revisited. *Proceedings of the Royal Irish Academy*, 102C, 1-19.
—— 2006. Leachta. *Archaeology Ireland*, 20(2), 49.
Hurl, D. P. 1992:0003, English St/Abbey St, Armagh. www.excavations.ie.
—— 1993:0007, Solar, Co. Antrim. www.excavations.ie.
—— 1995:0042, 'Bellaghy Bawn', Old Town Deer Park, Co. Derry. www.excavations.ie.
—— 2002. Excavation of an Early Christian cemetery at Solar, County Antrim. *Ulster Journal of Archaeology*, 61, 37-82.
—— 2003. Excavation in Abbey Street, Armagh. *Ulster Journal of Archaeology*, 62, 97-115.
Hurley, M. F. 1988a. Recent Archaeological Excavations in Waterford City. *Archaeology Ireland*, 2(1), 17-21.
—— 1988b. Excavations at an Early Ecclesiastical Enclosure at Kilkieran, Co. Kilkenny. *Journal of the Royal Society of Antiquaries of Ireland*, 118, 124-34.
—— 1992. Late Viking Age Settlement in Waterford City, in W. Nolan & T. P. Power (eds.) *Waterford*

history and society. Dublin: Geography Publications, 49-72.
—— 1997. Artifacts of skeletal materials, in M.F. Hurley *et al*. (eds.) *Late Viking Age and Medieval Waterford: Excavations 1986-1992.* Waterford: Waterford Corporation, 650-99.
—— 1998. Viking age towns: archaeological evidence from Waterford and Cork, in M. A. Monk & J. Sheehan (eds.) *Early Medieval Munster: archaeology, history and society*. Cork: Cork University Press, 164-77.
—— 2001:1250. Exchange Street/High Street, Co. Waterford. www.excavations.ie.
—— 2010. Viking elements in Irish Towns: Cork and Waterford, in J. Sheehan and D. Ó Corraín (eds.) *The Viking Age: Ireland and the west*. Dublin: Four Courts Press, 154-164.
Hurley, M. F. & Cleary, R. M. 1997. *Excavations at the North Gate, Cork, 1994*. Cork: Cork Corporation.
Hurley, M. F. and McCutcheon, S. W. J. 1997. St Peter's church and graveyard, in M.F. Hurley *et al*. (eds.) *Late Viking Age and Medieval Waterford: Excavations 1986-1992*. Waterford: Waterford Corporation**,** 190-227.
Hurley, M. F. and Power, D. 1981. The medieval town wall of Cork. *Journal of the Cork Historical and Archaeological Society*, 86, 1-20.
Hurley, M. F., Scully, O. M. B., & McCutcheon, S. W. J. 1997. *Late Viking Age and Medieval Waterford: excavations 1986-1992*. Waterford: Waterford Corporation.
Hurley, V. 1982. The early church in the South-West of Ireland, in S. Pearce (ed.) *The Early Church in Western Britain and Ireland: Studies Presented to C.A. Ralegh Radford*. Oxford: Oxford university Press, 102, 297-332.
Hurst, J. G. 1988. Medieval Pottery Imported into Ireland, in G. Mac Niocaill & P. F. Wallace (eds.) *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney*. Galway, Galway University Press, 229-53.

Inskeep, R. R. & Proudfoot, V. B. 1957. Dunbeg: a small hill-fort in County Down. *Ulster Journal of Archaeology*, 20, 103-13.
Ivens, R. J. 1984a. Killyliss Rath, County Tyrone (structure, finds, fullered iron sword). *Ulster Journal of Archaeology*, 47, 9-35.
—— 1984b. Movilla Abbey, Newtownards, County Down: excavations 1981. *Ulster Journal of Archaeology*, 47, 71-108.
—— 1984c. A note on Grass-marked pottery. *Journal of Irish Archaeology*, 2, 77-79.
—— 1985. Salvage excavation in the townland of Tully, Omagh, Co Tyrone (rath?). *Ulster Journal of Archaeology*, 48, 144-49.
—— 1987. The Early Christian monastic enclosure at Tullylish, Co Down. *Ulster Journal of Archaeology*, 50, 55-121.
—— 1988a. Secrets of a hilltop: Dunmisk, Co. Tyrone, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 27-29.
—— 1988b. Around an Early Church: Tullylish, Co. Down, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: Belfast: HMSO, 55-56.
—— 1989. Dunmisk fort, Carrickmore, Co. Tyrone: Excavations 1984-1986. *Ulster Journal of Archaeology*, 52, 17-110.
Ivens, R. J. & Simpson, D. D. A. 1986. Excavations at Island MacHugh 1985 - interim report. *Ulster Journal of Archaeology*, 49, 99-103.
—— 1988. Excavations at Lislear, Baronscourt, Co Tyrone, 1987. *Ulster Journal of Archaeology*, 51, 61-68.

Jackman, N. 2007. Kilbegly Mill: Work in Progress. *Seanda*, 2, 34-35.
—— 2009. Early medieval food-processing technology at Kilbegly, Co. Roscommon: the miller's tale, in M. Stanley *et al*. (eds.) *Dining and Dwelling: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, No. 6, August 2008*. Bray: Wordwell, 9-18.
Jackson, J. W. 1933. Preliminary report on excavations at the caves of Ballintoy, Co. Antrim. *Irish Naturalists Journal*, 4, 230-35.
—— 1934. Further excavations at Ballintoy Caves, Co. Antrim. *Irish Naturalists Journal*, 5, 104-14.
—— 1938. Excavations at Ballintoy Caves, Co. Antrim: fourth report. *Irish Naturalists Journal*, 7, 107-12.
James, D. 1978. Two Medieval Arabic Accounts of Ireland. *Journal of the Royal Society of Antiquaries of Ireland*, 108, 5-9.
James, E. 1982. Ireland and western Gaul in the Merovingian Period, in D. Whitelock *et al*. (eds.)

Ireland and Early Medieval Europe: Studies in memory of Kathleen Hughes. Cambridge: Cambridge University Press, 362-86.
—— 2003. Origins of the European economy: a debate with Michael McCromick. *Early Medieval Europe*, 12 (3), 259-261.
Janes, T. 2005:0596. Site 2.6, Farranablake East, Co. Galway, cashel, Co. Galway. www.excavations.ie.
Jankuhn, H. 1982. Trade and settlement in Central and Northern Europe up to and during the Viking period. *Journal of the Royal Society of Antiquaries of Ireland*, 112, 18-50.
Jaski, B. 2000. *Early Irish kingship and Succession*. Dublin: Four Courts Press.
Jenkins, J. 2000-01. Wexford, Weisford, Viksfjord, Wiksford: a different interpretation. *Journal of the Wexford Historical Society*, 18, 140-44.
Jones, C. 1999:0701. IDA Business Park, Kilkarn, Athlumney, Navan, Co. Meath. www.excavations.ie.
Jones, H. L. 1969. *The Geography of Strabo*. Harvard University Press.
Jope, E. M. 1950. A Souterrain at Harryville, Ballymena, Co Antrim. *Ulster Journal of Archaeology*, 13, 53.
—— 1952. Review of excavations at Island McHugh (Davies 1950). *Ulster Journal of Archaeology* 15, 134-36.
—— (ed.) 1966. *The Archaeological Survey of County Down*. HMSO, Belfast.
Jope, E. M. & Ivens, R. J. 1998. The Rath at Ballymacash, County Antrim. *Proceedings of the Royal Irish Academy*, 98C, 101-23.
Joubert, S. 2000:0941. Rathduff, Golden, Co. Tipperary. www.excavations.ie.

Karagiorgou, O. 2001. LR2: a container for the military *annona* on the Danubian border? in S. Kingsley and M. Decker (eds.) *Economy and Exchange in the east Mediterranean during late antiquity: Proceedings of a conference at Somerville College, Oxford, 29th May 1999*. Oxford: Oxbow, 129-66.
Karkov, C. E. & Farrell, R. T. (eds.) 1991. *Studies in insular art and archaeology*. Ohio: Oxford.
Kavanagh, J. 2003:1705. Site 20, Boscabell, Co. Tipperary. www.excavations.ie.
—— 2003:1765. Site 25(iv), Kilscobin, Co. Tipperary. www.excavations.ie.
——2004:0599. 4-8 Church Street, Finglas, Dublin. www.excavations.ie.
Keane, M. 1995a. Lough More, Co. Mayo: the crannog. *Irish Archaeological Wetland Unit Transactions*, 4, 167-82.
—— 1995b. The crannog, in A. Moloney, N. Bermingham, D. Jenning, M. Keane, C. McDermott and E. O Carroll (eds.) *Blackwater survey and excavations; Artifact deterioration in peatlands; Lough More, C. Mayo*, Transactions of the Irish Archaeological Wetland Unit Vol. 4, 167-82.
Keating, G. 1640. *Foras Feasa*, in D. Comyn & P. S. Dinneen (ed), First edition [The first three of four volumes in the series] David Nutt, for the Irish Texts Society London (1902-1914). *Irish Texts Society [Comann na Sgríbheann Gaedhilge]*. No. 4; 8 and 9.
Keeley, V. J. 1985:0026. Scholarstown, Co. Dublin. www.excavations.ie
—— 1987:0016. 'Brehon's Chair', Taylorsgrange, Co. Dublin. www.excavations.ie
—— 1989-91. Excavation at the "Longstone", Kilgowan. *Journal of the Kildare Archaeological and Historical Society*, 17, 161-67.
—— 1990:0113. Marlinstown, Co. Westmeath. www.excavations.ie
—— 1990:0116. Portnashangan 1, Portnashangan, Co. Westmeath. www.excavations.ie.
—— 1991:0126. Marlinstown, Co. Westmeath. www.excavations.ie
—— 2000:0696. Mell 3, Co. Louth. www.excavations.ie.
—— 2004:1724. Clonfad 3, Clonfad, Co. Westmeath. www.excavations.ie.
Kehoe, H. 2001:0943. Balgeen 4, Balgeen, Co. Meath. www.excavations.ie.
Kelleher, H. 2002:0291. Washington Street, Co. Cork. www.excavations.ie.
—— 2004:0244. 35-39 Main Street South, Co. Cork. www.excavations.ie.
Kelly, A. 2008. A Turkish import in County Meath:Mediterranean pottery on the M3. *Seanda*, 3, 16-18.
——2010. The discovery of Phocaean Red Slip Ware (PRSW) Form 3 and Bii ware (LR1 amphorae) on sites in Ireland: an analysis within a broader framework. *Proceedings of the Royal Irish Academy*, 110C, 35-88.
Kelly, D. 1986. Irish High Crosses: some evidence from the plainer examples. *Journal of the Royal Society of Antiquaries of Ireland*, 116, 51-67.
Kelly, E.P. 1975:0032. Randalstown, Co. Meath. www.excavations.ie.
—— 1975:0033. Simonstown, Co. Meath. www.excavations.ie.
—— 1976:0020. Randalstown, Co. Meath. www.excavations.ie.
—— 1977. A burial at Ferganstown and Ballymacon, Co. Meath. *Ríocht na Mídhe*, 6(3), 65-67.
—— 1977-79:0052. Ballybarrack, Co. Louth. www.excavations.ie.
—— 1977-79:0057. Betaghstown**,** Co. Meath. www.excavations.ie.
—— 1989:0079. Correen Ford, Correenbeg, Co. Roscommon. www.excavations.ie.
—— 1991:0059. Kellysgrove, Co. Galway. www.excavations.ie.

—— 1991. Observations on Irish Lake Dwellings, in C. Karkov & R. Farrell (ed.) Studies in Insular art and Archaeology. *American Early Medieval Studies*, 1, 81-98.
—— 1993. The Lough Kinale Book Shrine, in M. Spearman & J. Higgitt (eds.) *The Age of migrating ideas: early Medieval art in northern Britain and Ireland: proceedings of the second International Conference on Insular Art held in the National Museums of Scotland in Edinburgh, 3-6 January 1991*. Stroud, 168-74.
—— 2003. The Tully Lough Cross. *Archaeology Ireland*, 17(2), 9-10.
—— 2006. Secrets of the Bog Bodies: The Enigma of the Iron Age Explained. *Archaeology Ireland*, 20(1), 26-30.
—— 2010. The Vikings in Connemara, in J. Sheehan and D. Ó Corraín (eds.) *The Viking Age: Ireland and the west*. Dublin: Four Courts Press,174-87.
Kelly, E. P. & Mass, J. 1995. Vikings on the Barrow: Dunrally Fort, a possible Viking longphort in County Laois. *Archaeology Ireland*, 9(3), 30-32.
Kelly, E. P. & O'Donovan, E. 1998. A Viking Longphort near Athlunkard, Co. Clare. *Archaeology Ireland*, 12(4), 13-16.
Kelly, F. 1988. *A guide to early Irish law*. Dublin: Dublin Institute for Advance Studies.
—— 1997. *Early Irish farming: a study based mainly on the law-texts of the 7th and 8th centuries A.D*. Dublin: Dublin Institute for Advanced Studies.
Kendrick, T. D. 1939. Gallen Priory Excavations, 1934-5. *Journal of the Royal Society of Antiquaries of Ireland*, 69, 1-20.
Kenney, J. F. 1929. *Sources for the early history of Ireland: 1*. Ecclesiastical. New York.
Kenny, M. 1983. A hoard of Hiberno-Norse coins from Clonmacnoise, Co. Offaly. *Numismatic society of Ireland: Occasional Papers Nos. 24-28*, 25, 7-12.
—— 1984. A find of Anglo-Saxon pennies from Newtownlow, Co. Westmeath. *Ríocht na Mídhe*, 7(3), 37-43.
—— 1985. A small hoard of Anglo-Saxon and Hiberno-Norse coins from County Louth. *Seabys Coin and Medal Bulletin*, (801), 201-4.
—— 1986. Hiberno-Norse and Anglo-Saxon coins from Westmeath. *Ríocht na Mídhe*, 7(4), 22-27.
—— 1985-86. A Hoard of silver coins from Ellistown, Rathangan. *Journal of the Kildare Archaeological and Historical Society*, 16(5), 438-40.
—— 1987. The geographical distribution of Irish Viking-age coin hoards. *Proceedings of the Royal Irish Academy*, 87C, 507-25.
—— 1989. Anglo-Saxon pennies from Moyvore, Co. Westmeath. *Ríocht na Mídhe*, 8(2), 60-63.
—— 1991a. Coins and coinage in the Irish midlands during the Viking age, in R. Farrell & C. E. Karkov (eds.) *Studies in insular art and archaeology*. Ohio: Oxford, 111-16.
—— 1991b. Miscellanea 2: A Kufic coin fragment from Carrowreilly, Co. Sligo. *Journal of the Galway Archaeological and Historical Society*, 32, 170-73.
—— 1994-95. Saint Kieran's church and graveyard, Ballymaglasson, County Meath. *Ríocht na Mídhe*, 9(1), 61-69.
—— 2005. Coins and coinage in Pre-Norman Ireland, in D. Ó Cróinín (ed.) *A new history of Ireland. Vol. 1 Prehistoric and early Ireland*. Oxford: Oxford University Press, 842-51.
Kenny, N. 2010. Charcoal production in medieval Ireland, in M. Stanley et al. (eds.) *Creative Minds: Archaeology and the National Roads Authority Monograph No. 7*. Dublin: National Roads Authority, 99-116.
Kenward, H. K. & Allison, E. P. 1994. A preliminary view of the insect assemblages from the early Christian rath site at Deer Park Farms, Northern Ireland, in J. Rackham (ed.) *Environment and Economy in Anglo-Saxon England: Proceedings of a conference held at the Museum of London, 9-10 April, 1990*. London: Council for British Archaeology Bowes Morrell House, 111 Walmgate, York.
Kerr, T. R. 2007. *Early Christian settlement in North-West Ulster*. BAR 430. Oxford: Tempus Reparatum.
—— 2009. The Height of Fashion: Raised Raths in the Landscape of North-West Ulster. *Journal of Irish Archaeology*, 17, 63-76.
Kerr, T. R. & McCormick, F. 2004. Early Secular Settlement in County Fermanagh, in E. Murphy, & W. Roulston (eds.), *History & Society of Co. Fermanagh*. Dublin: Geography Publications, 57-76.
Kerr, T.R., Harney, L., Kinsella, J., O'Sullivan, A. and McCormick, F. 2009. *Early Medieval Dwellings and Settlements in Ireland, A.D. 400-1100: Draft of Vol. 2 Gazetteer of Site Descriptions.* Unpublished Early Medieval Archaeology Project (EMAP) Report 3.2 for the Heritage Council. Dublin & Belfast: University College Dublin & Queen's University Belfast. www.emap.ie.
Kerr, T. R., Swindles, G. T., & Plunkett, G. 2009. Making hay while the sun shines? Socio-economic change, cereal production and climatic deterioration in Early Medieval Ireland. *Journal of Archaeological Science*, 36 (12), 2868-2874.
Keys, D. 1999. *Catastrophe: An investigation into the origins of the modern world*. London: Arrow Books.
Kiely, J. 2001:0583. Shinnagh, Rathmore, Co. Kerry. www.excavations.ie.

Kieran, E. 2001:1385. Rossana Lower, Co. Wicklow. www.excavations.ie.
—— 2002:1989. Rosanna Lower, Co. Wicklow. www.excavations.ie.
—— 2004:1186. Betaghstown, Co. Meath. www.excavations.ie.
Killanin, (Lord) – M. Morris)) & Duignan, M. V. 1967. *The Shell Guide to Ireland*. London: Ebury Press.
Killanin, (Lord) – M. Morris)), Duignan, M. V, & Harbison, P. 1989. *The Shell guide to Ireland*, Dublin: Gill and Macmillan.
Killeen, J. 1989:0084. 'Sheepwalk Rath', Sheepwalk, Co. Roscommon. www.excavations.ie.
Kinahan, G. H. 1870-71. Observations on the exploration of crannogs (note). *Journal of the Royal Society of Antiquaries of Ireland (Journal of the Historical and Archaeological Association of Ireland*), Vol. 1- Fourth Series, 1870-71), 11, 459-61.
King, H. 1992a. Excavations at Clonmacnoise. *Archaeology Ireland*, 6(3), 12-14.
—— 1992b. Moving Crosses. *Archaeology Ireland*, 6(4), 22-23.
—— 1992:0157. New Graveyard at Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1993:0187. New Graveyard, Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1994:0196. Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1994:0197. New Graveyard, Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1995:0240. New Graveyard, Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1996:0324. New Graveyard, Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1997:0448. New Graveyard, Clonmacnoise, Co. Offaly. www.excavations.ie.
—— (ed.) 1998. *Clonmacnoise Studies: Seminar Papers 1994*. Dublin: Dúchas
—— 1998:0548. New Graveyard, Clonmacnoise, Co. Offaly. www.excavations.ie.
—— (ed.) 2003. *Clonmacnoise studies: Seminar Papers 1998*. Dublin: Stationery Office.
—— 2004a. Excavation at the North Cross, Ballymore Eustace, Co. Kildare, in C. Hourihane (ed.) *Irish Art Historical Studies in honour of Peter Harbison*. Dublin: Four Courts Press, 165-74.
—— 2004b. Excavation of the high cross in the medieval market place at Kells, in H. Roche *et al*. (eds.) *From megaliths to metals, essays in honour of George Eogan*. Oxford: Oxbow, 233-42.
—— 2007. A medieval 'shrine chapel' on Church Island, Lough Key, County Roscommon, in C. Manning (ed.) *From Ringforts to Fortified Houses: Essays on Medieval Monuments in Honour of David Sweetman*, Bray: Wordwell, 353-86.
—— 2009. The economy and industry of early medieval Clonmacnoise: A preliminary view, in N. Edwards (ed.) *The Archaeology of the Early Medieval Celtic Churches*. Society for Medieval Archaeology Monograph 29. Leeds: Maney Publishing, 333-49.
King, P. 2001:0924. Rockfield, Co. Mayo. www.excavations.ie.
—— 2003:1300. Ballinlassa, Co. Mayo. www.excavations.ie.
Kinsella, J. 2005. Locating the poor and unfree of early medieval Ireland, in C. Lewis (ed.) *Medieval Settlement Research Group*. Annual Report, 20, 25-29.
—— 2008. New discoveries and fresh insights: researching the early medieval archaeology of the M3 in County Meath, in J. O'Sullivan and M. Stanley (eds.) *Roads, Rediscovery and Research: Proceedings of a Public Seminar on Archaeological Discoveries on National Road Schemes, August 2007*. Bray: Wordwell, 5, 95-107.
—— 2010. A new Irish early medieval site type? Exploring the recent archaeological evidence for non-circular enclosed settlement and burial sites. *Proceedings of the Royal Irish Academy*, 110C, 89-132.
Krusch, B. (ed.) 1902. *Scriptores rerum Merovingicarum IV*. Societas Aperiendis Fontibus Rerum Germanicarum Medii Aevi, Hannover.
Krusch, B. & Levison, W. (eds.) 1910. Vita Filaberti Abbatis Gemeticensis et Heriensis, in *Scriptores rerum Merovingicarum V*, Societas Aperiendis Fontibus Rerum Germanicarum Medii Aevi, Hannover.
Kyle, A., Stewart, K., & Tourunen, A. 2009. Excavating a meal: a multidisciplinary approach to early medieval food economy, in Stanley, M. *et al*. (eds.) *Dining and Dwelling: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2008*. Bray: Wordwell, 73-84.

Lacey, B. (ed.) 1983. *Archaeological survey of County Donegal: a description of the field antiquities of the county from the Mesolithic period to the 17th century A.D*. Lifford: Donegal County Council.
Laing, L. 1975. *The Archaeology of Late Celtic Britain and Ireland c. 400-1200 A.D*. London: Methuen & Co. Ltd.
—— 1985. The romanization of Ireland in the fifth century. *Peritia*, 4, 261-78
—— 2006. *The archaeology of Celtic Britain and Ireland: c. AD 400-1200*. Cambridge: Cambridge University Press.
Laing, L & Longley, D. 2006. *The Mote of Mark: a Dark age hillfort in south-west Scotland*. Oxford: Oxbow Books.
Lane, S. 1999:0077. Banduff, Co. Cork. www.excavations.ie.

—— 1999:0082. Caheravart, Co. Cork. www.excavations.ie.
—— 2000:0122. 5 Barrack Street, Cork, Co. Cork. www.excavations.ie.
Langdon, J. 1986. *Horses, oxen and technological innovation*. Cambridge: Cambridge University Press.
Larcom, T. A. 1848. On Certain Antiquities, Presented to the Academy, Found in the Parish of Kiltale, Co. Meath. *Proceedings of the Royal Irish Academy*, 4, 388-89.
Large, S. 2003:0445. Carnreagh, Hillsbourgh, Co. Down. www.excavations.ie.
Larsen, A. (ed.) 2001. *The Vikings in Ireland*. Roskilde: The Viking Ship Museum.
Larson, E. 2002:0640. Site 1, Ballycullen, Oldcourt, Co. Dublin. www.excavations.ie
—— 2004:0644. Kilgobbin Lane, Enniskerry Road, Stepaside. www.excavations.ie.
—— 2004:0645. Kilgobbin Lane, Enniskerry Road, Stepaside. www.excavations.ie.
—— 2004:0646. Kilgobbin Lane, Enniskerry Road, Kilgobbin, Stepaside. www.excavations.ie.
Larson, L. M. 1917. *The King's Mirror (Speculum Regale – Konungs Skuggsja)*. New York: The American Scandinavian foundation.
Lavelle, D. 1994:0202. Moore Cemetery, Loughlackagh, Co. Roscommon. www.excavations.ie.
Lawless, C. 1992. Lough More, Bofeenaun, Co. Mayo. Crannóg; fulachta fiadh; deer traps and associated archaeological sites. *Cathair Na Mart*, 12, 13-31.
Lalor, B. 1999. *Irish Round Tower: origins and architecture explored*. Cork: Collins Press.
Lawlor, H. C. 1916. Some notes on the Investigation of Dwelling Places of Prehistoric Man in the N.E. of Ireland: Souterrains and raths. *Proceedings of the Belfast Natural History and Philosophical Society*, 31-61
—— 1925. *The monastery of Saint Mochaoi of Nendrum*. Belfast: Belfast Natural History and Philosophical Society.
Leahy, K. & Bland, R. 2009. *The Staffordshire Hoard*. London: British Museum.
Leask, H. G. 1929. Further notes on the church [on Friar's Island, Killaloe]. *Journal of the Royal Society of Antiquaries of Ireland*, 59, 25-28.
—— 1930. The church of St Lua or Molua, Friar's Island, Co. Tipperary, near Killaloe. *Journal of the Royal Society of Antiquaries of Ireland*, 60, 130-36.
—— 1955. *Irish churches and monastic buildings. Vol.1, The first phases and the romanesque* (Reproduced 1977). Dundalk: Dundalgan Press.
Leask, H. G. & Macalister, R. A. S. 1946. Liathmore-Mochoemóg (Leigh), County Tipperary. *Proceedings of the Royal Irish Academy*, 51C, 1-14.
Lehane, J. 2004:1187. Bettystown, Co. Meath. www.excavations.ie.
Lehane, J. & Delaney, F. 2010. Archaeological Excavations Report E3770 – Owenbristy, Co. Galway: Cashel and Burial Ground. *Eachtra Journal*, 8. http://eachtra.ie/index.php/journal/
Lehane, J., Muniz Pérez, M., O'Sullivan, J. and Wilkins, B. 2010. Three cemetery-settlement excavations in County Galway at Carrowkeel, Treanbaun and Owenbristy in C. Corlett and M. Potterton (eds.), *Death and Burial in Early Medieval Ireland in the light of recent archaeological excavations*. Dublin, Wordwell, 139-53.
Lennon, A. M. 1993. Excavation of a ringfort, Raheens I, near Carrigaline, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 98, 75-89.
—— 1994. Summary report on Excavation of Ringfort, Raheens No. 2 near Carrigaline, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 99, 47-65.
—— 2000:0849. Cloongownagh, Co. Roscommon. www.excavations.ie.
—— 2002:1744. Monadreela, Co. Tipperary. www.excavations.ie.
—— 2004:0868. Blanchfieldsland, Co. Kilkenny. www.excavations.ie.
—— 2006. Excavation of a ringfort at Leggetsrath West, County Kilkenny in J. O'Sullivan & M. Stanley (eds.) *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 43-52.
Lewis, A.R. 1951. *The Northern Seas: Shipping and Commerce in Northern Europe A.D. 300-1100*. Princeton.
Limbert, D. 1996. Irish Ringforts: A Review of Their Origins. *The Archaeological Journal*, 153, 243-89.
Lindsay, A. W. 1934-5. The Dunalis Souterrain and Ogham Stone. *Proceedings of the Belfast Natural History and Philosophical Society*, 61-70
Linkletter, M., Luft, D., Fogarty, H., Richmond, I., Malone P., & Radiker, L. (eds.) *Proceedings of the Harvard Celtic Colloquium, Vol. 18*. Harvard: Harvard University Press.
Linnane, S. 2002:1738. Lorrha, Co. Tipperary. www.excavations.ie.
Linnane, S. & Kinsella, J. 2007. Fort Baronstown? Exploring the social role of an impressive ringfort on the M3. *Seanda*, 2, 57-59.
—— 2009. Military lords and defensive beginnings: a preliminary assessment of the social role of an impressive rath at Baronstown, in M. Deevy and D. Murphy (eds.), *Places along the way: first findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell, 101-22.
Lionard, P. 1961. Early Irish grave slabs. *Proceedings of the Royal Irish Academy*, 61C, 95-169.
Liversage, G. D. 1968. Excavations at Dalkey Island, Co. Dublin 1956–1959. *Proceedings of the Royal*

Irish Academy, 66C, 53-233.
Long, C. 2001:0022. Derrymore Fort, Bessbrook, Co. Armagh. www.excavations.ie.
Long, H. 1994. Three settlements of Gaelic Wicklow 1169-1600: Rathgall, Ballinacor and Glendalough, in K. Hannigan & W. Nolan (eds.) *Wicklow History & Society: Interdisciplinary Essays on the History of an Irish County*. Dublin: Geography Publications, 248-56.
Long, P. 2007:1149. Sallymount, Co. Limerick. www.excavations.ie.
—— 2009. Food for thought: newly discovered cereal-drying kilns from the south-west midlands, in M. Stanley *et al*. (eds.) *Dining and Dwelling: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, No. 6, August 2008*, Bray: Wordwell, 6, 19-28.
Lucas, A. T. 1989. *Cattle in ancient Ireland*. Kilkenny: Boethius Press.
Lynch, A. 1983. Excavations at the base of St Patrick's Cross, Cashel. *North Munster Antiquarian Journal*, 25, 9-18.
—— 1986:0032. 'Sceillig Mhichil', Skellig Rock Great, Co. Kerry. www.excavations.ie.
—— 1987:0025. 'Sceillig Mhichil', Skellig Rock Great, Co. Kerry,. www.excavations.ie.
—— 1996:0385. Ardocheasty, Ardmore, Co. Waterford. www.excavations.ie.
Lynch, A. & Cahill, M. 1976-77. The excavation of St Vogue's well and dolmen (site of), at Carnsore, Co. Wexford. *Journal of the Wexford Historical Society*, 6, 55-60.
Lynch, P. 2002:0473. Bellinstown, Co. Dublin. www.excavations.ie.
—— 2004:1860. Site 29, Coolbeg, Co. Wicklow. www.excavations.ie.
Lynch, R. 1998:0222. 'The Brehon's Chair', Taylorsgrange, Co. Dublin. www.excavations.ie.
—— 2000:0774. Platin, Co. Meath. www.excavations.ie.
—— 2001:1022. Platin, Co. Meath. www.excavations.ie.
Lynn, C. J. 1975a. The dating of Raths: an orthodox view. *Ulster Journal of Archaeology*, 38, 45-47.
—— 1975b. Excavation in the Franciscan friary church, Armagh. *Ulster Journal of Archaeology*, 38, 61-80.
—— 1975c. The medieval ringfort– an archaeological chimera? *Irish Archaeological Research Forum*, 29, 29-36.
——1977. Recent Archaeological Excavations in Armagh City: An interim summary. *Seanchas Ardmhacha* 8(2), 275-80.
—— 1977-79:0003. Ballymurphy, Co. Antrim. www.excavations.ie.
—— 1977-79:0001. Ballyboley, Co. Antrim. www.excavations.ie.
—— 1977-79:0009. Armagh City, Old Meeting House, Abeey Street, Co. Armagh. www.excavations.ie.
—— 1977-79:0010. Armagh City, No. 16, Scotch Street, Co. Armagh. www.excavations.ie.
—— 1977-79:0032. Greencastle, Co. Down. www.excavations.ie.
—— 1978a. Early Christian period domestic structures: a change from round to rectangular plans? *Irish Archaeological Research Forum*, 5, 29-45.
—— 1978b. A rath in Seacash Townland, County Antrim. *Ulster Journal of Archaeology*, 41, 55-74.
—— 1978c. A note on the excavation of an earthwork at Ballygortgarve, County Antrim. *Ulster Journal of Archaeology*, 41, 75-77.
—— 1980a. The excavation of an earthwork enclosure at Ballynoe, County Antrim. *Ulster Journal of Archaeology*, 43, 29-38.
—— 1980b. A destroyed rath in Lismurphy townland, County Derry. *Ulster Journal of Archaeology*, 43, 75-78.
—— 1980-84:0086. Maghera (Carnacavill td.), Co. Down. www.excavations.ie.
—— 1980-84:0108. Killygreagh, Co. Antrim. www.excavations.ie.
—— 1981-82. The excavation of Rathmullan, a raised rath and motte in County Down. *Ulster Journal of Archaeology*, 44-45, 65-171.
—— 1983a. An Early Christian period site in Ballybrolly, County Armagh. *Ulster Journal of Archaeology*, 46, 47-51.
—— 1983b. Some early ringforts and crannogs. *Journal of Irish Archaeology*, 1, 47-58.
—— 1983c. Two Raths at Ballyhenry, Co. Antrim. *Ulster Journal of Archaeology*, 46, 67-91.
—— 1984. Some fragments of exotic porphyry found in Ireland. *Journal of Irish Archaeology*, 2, 19-32.
—— 1985. Excavations on a mound at Gransha, County Down, 1972 and 1982: an interim reports. *Ulster Journal of Archaeology*, 81, 81-90.
—— 1986. *Houses and related outbuildings in Early Christian Ireland*. Unpub'd PhD, UCD.
—— 1987a. Deer Park Farms. *Current Archaeology*, 113, 193-98.
—— 1987b. Deer Park Farms, Glenarm, Co. Antrim. *Archaeology Ireland*, 1(1), 11-15.
—— 1988a. Excavations at 46-48 Scotch Street, Armagh, 1979-80. *Ulster Journal of Archaeology*, 51, 69-84.
—— 1988b. A note on the excavation of an early Christian period settlement in Deer Park Farms, Glenarm, 1984-1987. *The Glynns*, 16, 3-16.
—— 1988c. A Thousand Year-Old Farm: Ballywee, Co. Antrim in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 32-35.

—— 1988d. The Story in a Mound: Gransha, Co. Down, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 38-41.
—— 1988e. Civil Engineering in the Early Christian Period: Big Glebe, Co. Londonderry, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 41-44.
—— 1988f. Ulster's Oldest Wooden Houses: Deer Park Farms, Glenarm, Co. Antrim, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 44-47.
—— 1988g. Slices Through Time, Rathmullan, Co. Down, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 48-50.
—— 1988h. Grim Fortress or picturesque ruin? Greencastle, Co. Down, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 66-69.
—— 1989. Deer Park Farms: a visit to an Early Christian settlement'. *Current Archaeology*, 113, 193-98.
—— 1990:0006. English St/Market Sq., Armagh. www.excavations.ie.
—— 1991. Early Medieval Houses, in M. Ryan (ed.) *The Illustrated Archaeology of Ireland*. Dublin: Town House and Country House, 126-31.
—— 1994. Houses in rural Ireland, A. D. 500-1000. *Ulster Journal of Archaeology*, 57, 81-94.
—— 2005. Settlement and Disease: a plague on your raths. *Archaeology Ireland*, 19(4), 14-17.
Lynn, C. J & McDowell, J. A. 1987:0001. Deer Park Farms, Co. Antrim. www.excavations.ie.
—— 1988a. A note on the excavation of an early Christian period settlement in Deer Park Farms, Glenarm, 1984–1987. *The Glynns*, 16, 3-16.
—— 1988b. The Oldest City in Ireland: Armagh, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 57-61.
—— Forthcoming. Excavations at Deer Park Farms, Co. Antrim.
Lyttleton, J. & Monk, M. A. 2007. Sites, social change and warfare in the second half of the first millennium A.D.: a reappraisal, in C. Manning (ed.) *From ringforts to fortified houses: studies on castles and other monuments in honour of David Sweetman*. Bray: Wordwell, 9-19.

Macalister, R. A. S. 1928. *The Archaeology of Ireland*. London.
—— 1929. On some excavations recently conducted on Friar's Island, Killaloe. *Journal of the Royal Society of Antiquaries of Ireland*, 59, 16-24.
—— 1935. The excavation of Kiltera, Co. Waterford. *Proceedings of the Royal Irish Academy*, 43C, 1-16.
—— 1938. On an excavation conducted on Cro-Inis, Loch Ennell. *Proceedings of the Royal Irish Academy*, 44C, 248-52.
—— 1943. Two ringforts submerged by the Poulaphuca reservoir (note). *Journal of the Royal Society of Antiquaries of Ireland*, 73, 145-49.
—— 1945b. *Corpus inscriptionum insularum celticarum, Vol. 1* (preface by Damian McManus). Blackrock: Four Courts Press.
—— 1949. *Corpus inscriptionum insularum celticarum Vol. 2*. Dublin: Stationery Office.
Macalister, R. A. S. & Praeger, R. L. 1928. Report on the Excavation of Uisneach. *Proceedings of the Royal Irish Academy*, 38C, 69-127.
—— 1929. Report on excavation recently conducted in Killeen Cormac, Co. Kildare. *Proceedings of the Royal Irish Academy*, 38C, 247-61.
—— 1931. The excavation of an ancient structure on the townland of Togherstown, Co. Westmeath. *Proceedings of the Royal Irish Academy*, 40C, 54-83.
McAulay, I. R. & Watts, W. A. 1961. Dublin radiocarbon dates I. *Radiocarbon* 3, 26-38.
Mac Carthaigh, C. & Whelan, K. 1999. *New Survey of Clare Island: History and Cultural Landscape*. Vol. 1. Dublin, Royal Irish Academy
McCarthy, M. 1997. Faunal remains: Christ Church, in R. M. Cleary *et al*. (eds.) *Skiddy's Castle and Christ Church, Cork: Excavations 1974-77 by D. C. Twohig*. Cork, Cork Corporation, 349-59.
—— 1999:0318. New Road, Ballybunion, Co. Kerry. www.excavations.ie.
—— 2003. The faunal remains, in R. M. Cleary & M. F. Hurley (eds.) *Cork City Excavations 1984-2000*. Cork, Cork City Council, 375-89.
McClatchie, M. 1999:0119. Fort Hill, Moneygurney, Co. Cork. www.excavations.ie.
McCone, K. & Simms, K. 1996. *Progress in medieval Irish studies*. Maynooth: Department of Old Irish, Saint Patrick's College.
McConway, C. 1994:0102. St Maelruan's, Tallaght, Co. Dublin. www.excavations.ie.
—— 1995:0111. St Maelruan's, Tallaght, Co. Dublin. www.excavations.ie.

—— 1995:0220. Haggardstown, Co. Louth. www.excavations.ie.
—— 1996:0068. Nangor Castle, Clondalkin, Co. Dublin. www.excavations.ie.
—— 1996:0234. Ballycummin, Co. Limerick. www.excavations.ie.
—— 1997:0086. Nangor Castle/Grange Castle, Kilmahuddrick, Clondalkin, Co. Dublin. www.excavations.ie.
—— 2001:1007. Ninch, Laytown, Co. Meath. www.excavations.ie.
—— 2002:1489. Ninch, Laytown, Co. Meath. www.excavations.ie.
—— 2002. Excavations at Laytown reveal coastal settlement in Meath. *Archaeology Ireland*, 16(1), 16-19.
—— 2004:1129. Whiteriver, Co. Louth. www.excavations.ie.
McConway, L. 1992:0007. Blackhills Lower, Co. Cavan. www.excavations.ie.
McConway, L & Halpin, E. 1992:0150. Cormeen, Co. Meath. www.excavations.ie.
McCormick, F. 1983. Dairying and Beef Production in Early Christian Ireland, the faunal evidence, in T. Reeves-Smyth & F. Hammond (eds.) *Landscape archaeology in Ireland*. Oxford: Oxford University Press, 253-67.
—— 1987. The animal bones, in C. Manning, Excavation at Moyne graveyard, Scrule, Co. Mayo. *Proceedings of the Royal Irish Academy*, 87C, 60-67.
—— 1992a. The Animal Bones, in Gowen, M. Excavation of Two Souterrain Complexes at Marshes Upper, Dundalk, Co. Louth, *Proceedings of the Royal Irish Academy*, 92C, 113-119.
—— 1992b. Early faunal evidence for dairying. *Oxford Journal of Archaeology*, 11, 201-9.
—— 1992:0095. Truska, Manninmore, Manninbeg, Co. Galway. www.excavations.ie.
—— 1993. Excavations at Iona, 1988. *Ulster Journal of Archaeology*, 56, 78-103.
—— 1994:0115. False Bay, Truska, Co. Galway. www.excavations.ie.
—— 1995a. Cows, ringforts and the origin of early Christian Ireland. *Emania*, 13, 33-37.
—— 1995b. False Bay, Co. Galway, in the Bronze Age. *Archaeology Ireland*, 9 (1), 12-13.
—— 1997a. Iona: the archaeology of the Early Monastery, in C. Bourke (ed.) *Studies in the cult of Saint Columba*. Dublin: Four Courts Press. 45-68.
—— 1997b. The animal bones, in M. F. Hurley *et al*. (eds.) *Late viking age and medieval Waterford: excavations 1986-1992*. Waterford: Waterford Corporation, 819-53.
—— 1997c. Farming and Food in Medieval Lecale, in L. Proudfoot (ed.) *Down: History and Society*. Dublin: Geography Publications, 33-46.
—— 1999. Early evidence for wild animals in Ireland, in N. Benecke (ed.) *The Holocene History of European Vertebrate Fauna: Modern Aspects of Research*, Archaeologie in Eurasien, no. 6, Rahden. Verlag Marie Leidorf, 355-71.
—— 2002. The distribution of meat in a Hierarchical Society: The Irish evidence, in P. Miracle and N. Milner (eds.) *Consuming passions and patterns of consumption*. Cambridge: McDonald Institute Monographs, 25-31.
—— 2007. The horse in early Ireland. *Anthropozoologicia*, 42(1), 85-104.
—— 2008. The decline of the cow: agricultural and settlement change in early medieval Ireland. *Peritia*, 20, 210-15.
McCormick, F. & Crone, F. J. 2000. A destroyed enclosure at Site 5, Marshes Upper, County Louth. *Journal of the Louth Archaeological and Historical Society*, 24(4), 553-62.
McCormick, F., & Macdonald, P. 2002:0441. Dunnyneill Islands, Co. Down. www.excavations.ie.
—— 2003:0017. The Bishop's Palace, Kilroot, Co. Antrim. www.excavations.ie.
—— 2003:0443. Dunnyneill Island, Strangford Lough. www.excavations.ie.
—— 2004. Excavations at Dunnyneill Island. *Lecale Review*, 2, 5-10.
—— 2010. Dunnyneill Island: an Early Medieval emporium in Strangford Lough, in E. Murray & P. Logue (eds.) *Battles, Boats and Bones: Archaeological Discoveries in Northern Ireland 1987-2008*. Norwich: TSO; 51-54.
McCormick, F., & Murray, E. V. 1997:0197. Doonloughan, Co. Galway. www.excavations.ie.
—— 2005:0352. Ballywillwill, Co. Down. www.excavations.ie.
—— 2007. *Excavations at Knowth 3: Knowth and the zooarchaeology of early Christian Ireland*. Dublin: Royal Irish Academy.
McCormick, F., Cribbin, G., Robinson, M. E., & Shimwell, D. W. 1995. A Pagan-Christian transitional burial at Kiltullagh. *Emania*, 13, 89-98.
McCormick, F., Gibbons, M., McCormac, F. G. & Moore, J. 1996. Bronze Age to medieval coastal shell middens near Ballyconneely, Co. Galway. *Journal of Irish Archaeology*, 7, 77-84.
McCormick, M. 2001. *Origins of the European Economy*. Cambridge: Cambridge University Press.
—— 2002. New Light on the 'Dark Ages': How the Slave Trade Fuelled the Carolingian Economy. *Past and Present*, 177, 17-54.
McCutcheon, C. 1994. Medieval Pottery, in L. Simpson (ed.) *Excavations at Isolde's Tower, Dublin*. Dublin, 50-77.
—— 1995a. Pottery, in M.F. Hurley & C.M. Sheehan (eds.) *Excavations at the Dominican Priory: St Mary's of the Isle, Cork*. Cork, 85-96.

—— 1995b. Medieval Pottery, in L. Simpson (ed.) *Excavations at Essex Street West, Dublin*. Dublin, 40-53.
—— 1996a. The Pottery, in E. Shee Twohig (ed.) 'Excavations at St Saviour's Dominican Priory, Limerick. *North Munster Antiquarian Journal*, 37, 65-72.
—— 1996b. The Pottery, in M. F. Hurley (ed.) 'Excavations in Cork City: Kyrl's Quay/North Main Street (Part 2). *Journal of the Cork Historical and Archaeological Society*, 101, 43-54.
—— 1996c. Appendix 1: The Medieval and Post-Medieval Pottery, in R. Cleary (ed.) Medieval Graveyard and Boundary Wall at Cove Street, Cork. *Journal of the Cork Historical and Archaeological Society*, 101, 108-9.
—— 1997. Pottery, in M.F. Hurley (ed.) *Excavations at the North Gate, Cork 1994*. Cork, 75-101.
—— 2006. *Medieval Pottery from Wood Quay, Dublin: The 1974-6 Waterfront Excavations*. Dublin: Royal Irish Academy
—— 2010. Current Work on Saxo-Norman Pottery in Ireland. *Medieval Pottery Research Group Newsletter*, 67, 3.
—— 2014. *Saxo-Norman Pottery from Dublin 850-1150.*
McCutcheon, S. W. J. and M. F. Hurley. 1997. Insula North, in M. F. Hurley *et al*. (eds.) *Late Viking age and medieval Waterford: Excavations 1986-1992*. Waterford: Waterford Corporation, 154-63.
McDermott, C. 1998:0488. Frenchgrove, Co. Mayo. www.excavations.ie.
—— 1998:0553. Lemanaghan, Co. Offaly. www.excavations.ie.
—— 2001:1085. Daingean Bog, Ballylennon/Barnaboy/Rathdrum, Co. Offaly. www.excavations.ie.
McDermott, C & La Piscopia, P. 2008. *Discovering the Archaeologists of Europe: Ireland, A report to the Institute of Archaeologists of Ireland*. Unpublished UCD Report for the Leonardo da Vinci Programme and The Heritage Council.
MacDonald, A. 1981. Notes on monastic archaeology and the Annals of Ulster, 650-1050, in D. Ó Corrain (ed.) *Irish Antiquity: Essays and studies presented to Professor M.J. O'Kelly*. Dublin: Four Courts, 304-19.
—— 1997. Adomnán's monastery of Iona, in C. Bourke (ed.) *Studies in the cult of Saint Columba*. Dublin: Four Courts, 24-44.
—— 1999. *Reiclés* in the Irish annals to A.D. 1200. *Peritia*, 13, 259-75.
Macdonald, P. & McIlreavy, D. 2007. Archaeological Investigations at Kilhorne, Moneydorragh, County Down. *Ulster Journal of Archaeology*, 66, 97-119.
McDonnell, J. G. 1995. Slag report on samples from Bofeenaun, Lough More, Co. Mayo, in A. Moloney, N. Bermingham, D. Jenning, M. Keane, C. McDermott and E. O Carroll (eds.) *Blackwater survey and excavations; Artifact deterioration in peatlands; Lough More, Co. Mayo*. Transactions of the Irish Archaeological Wetland Unit Vol. 4, 183-84
McDowell, J. A. 1980-94:0035. Armagh (Corporation td.; 48 Scotch St), Co. Armagh. www.excavations.ie.
—— 1987. Excavation in an ecclesiastical enclosure at Doras, County Tyrone. *Ulster Journal of Archaeology*, 50, 137-54.
—— 2004. *Excavation, Recording and the use of Space at the Early Medieval Site of Deer Park Farms, Co. Antrim*. Unpub'd MPhil, Queen's University, Belfast.
McErlean, T. C. 1980-84:0180. Carr, Co. Tyrone. www.excavations.ie.
—— 2002. Early Medieval Period, *c*. 400-1177, in W. Forsythe *et al*. (eds.) *Strangford Lough: an archaeological survey of the maritime cultural landscape*. Belfast: Blackstaff, 57-90.
McErlean, T. C. & Crothers, N. 2002. The early medieval Mills at Nendrum: An interim statement, in W Forsythe *et al*. (eds.) *Strangford Lough: An archaeological Survey of the Maritime Cultural Landscape*. Belfast: Blackstaff Press, 200–11.
—— 2007. *Harnessing the tides: the early medieval tide mill at Nendrum Monastery, Strangford Lough*. Belfast: TSO.
McGarry, T. 2005. Identifying burials of the Irish Iron Age and Transitional Periods *c*. 800 B.C.- A.D. 600. *Trowel*, 10, 2-18.
—— 2007. Irish late prehistoric burial practices: continuity, developments and influences. *Trowel,* 11, 7-25.
McGowan, L. 2004:0483. Cherryhound, Co. Dublin. www.excavations.ie.
McHugh, R., Bell, J. & MacDonald, P. 2004. Excavations in the vicinity of St Jarlath's Church, Clonfeacle, County Tyrone. *Ulster Journal of Archaeology*, 63, 52-64.
McKeown, M. 2003. Three new souterrains near Dundalk. *Journal of the Louth Archaeological and Historical Society*, 25(3), 271-80.
McLarnen, F., Monk, M. A., & Sexton, R. 2004. 'Burning the biscuit': evidence from the Lisleagh excavations reveals new secrets twenty years on! *Archaeology Ireland*, 18(3), 18-20.
McLoughlin, C. 1999:0610. Mullagharlin/Haggardstown, Dundalk, Co. Louth. www.excavations.ie.
McMahon, M., Collins, B., Buckley, L., & Butler, V. 2002. Early medieval settlement and burial outside the enclosed town: evidence from archaeological excavations at Bride Street, Dublin. *Proceedings of the Royal Irish Academy*, 102C, 65-135.

MacManus, C. 1997:0074. Inch/Ballyrenan, Co. Down. www.excavations.ie.
—— 1998:0114. IDB Development Site, Belfast Road, Downpatrick, Co. Down. www.excavations.ie.
—— 2003:0001. Antrim civic offices, Antrim. www.excavations.ie.
—— 2003:1843. Derryloran, Co. Tyrone. www.excavations.ie.
McNamara, S. 2005. Woodstown 6: the finds, in J. O'Sullivan & M. Stanley (eds.) *Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell, 125–30.
MacNeill, E. 1923. Ancient Irish Law: the law of status and franchise. *Proceedings of the Royal Irish Academy*, 36C, 277-316.
McNeill, T. E. 1975a. Ulster Mottes: a CheckliSt *Ulster Journal of Archaeology*, 38, 49-56.
—— 1975b. Medieval Raths? An Anglo-Norman comment. *Irish Archaeological Research Forum*, 2, 37-39.
—— 1991-92. Excavations at Dunsilly, County Antrim. *Ulster Journal of Archaeology*, 54-55, 78-112.
—— 2002. Lost Infancy: Medieval archaeology in Ireland. *Antiquity*, 76, 552-56.
—— 2007. Recent Research in Irish Mottes. *Beiträge zur Mittelalterarchäologie in Österreich*, 23, 9-20.
MacNiocaill, G. & P. F. Wallace (eds.), 1988. *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney*. Galway: Galway University Press.
McQuade, M. 2006:1254. Athlumney, Co. Meath. www.excavations.ie.
McQuillan, L. 1999:0151. Inch and Ballyrenan 1, Co. Down. www.excavations.ie.
—— 2001:1236. Relough, Co. Tyrone. www.excavations.ie.
—— 2002. Straight and to the point. *Archaeology Ireland*, 16(1), 11.
McQuillan, L & Long, C. 1999:0018. Tullaghgarley, Co. Antrim. www.excavations.ie.
Mac Shamhráin, A. S. 1989. Prosopographica Glindelachensis: the monastic church of Glendalough and its community sixth to thirteenth centuries. *Journal of the Royal Society of Antiquaries of Ireland*, 119, 79-97.
—— 1996. *Church and Polity in Pre-Norman Ireland: The case of Glendalough*. Maynooth: Cardinal Press.
McSparron, J. C. 1998:0002. Killybegs Road, Co. Antrim. www.excavations.ie.
—— 2000:0021. Aughnamullan, Nutts Corner, Co. Antrim. www.excavations.ie.
—— 2001. The excavation of an unenclosed house of the early Christian period at Drumadonnell, County Down. *Ulster Journal of Archaeology*, 60, 47-56.
—— 2001:0014. Markstown, Co. Antrim. www.excavations.ie.
—— 2007. Excavations at Terryhoogan, Co. Armagh. *Ulster Journal of Archaeology* 66, 120-31.
McSparron, J. C. & Williams, B. B. 2004. A brief interim account of excavations at Drumadoon, Co. Antrim, 2003. *The Glynns*, 32, 9-13.
—— 2009. The excavation of an Early Christian rath with later medieval occupation at Drumadoon, Co. Antrim. *Proceedings of the Royal Irish Academy*, 109C, 105-64.

Maas, J. 2008. *Longphort, Dún,* and *Dúnadd* in the Irish Annals of the Viking period. *Peritia*, 20, 213-31
Mallory, J.P. 1995:0010. 'Haughey's Fort', Tray, Co. Armagh. www.excavations.ie.
Mallory, J. P. & McNeill, T. E. 1991. *The archaeology of Ulster from colonization to plantation*. Belfast: The Institute of Irish Studies, Queen's University of Belfast.
Mallory, J. P. & Woodman, P. C. 1984. Oughtymore: an Early Christian shell midden. *Ulster Journal of Archaeology*, 47, 51-62.
Manning, C. 1981-82. Excavation at Kilteel Church, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society*, 16(3), 173-229.
—— 1984. The excavation of the Early Christian enclosure of Killederdadrum in Lackenavorna, Co. Tipperary. *Proceedings of the Royal Irish Academy*, 84C, 237-68.
—— 1986:0031. 'Cahergal', Kimego West, Co. Kerry. www.excavations.ie.
—— 1986. Archaeological excavation of a succession of enclosures at Millockstown, Co. Louth. *Proceedings of the Royal Irish Academy*, 86C, 135-81.
—— 1987. Excavation at Moyne graveyard, Shrule, Co. Mayo. *Proceedings of the Royal Irish Academy*, 87C, 37-70.
—— 1987:0024. 'Killelton Oratory', Killelton, Co. Kerry. www.excavations.ie.
—— 1987-88. The stone-built ringfort entrance at Cahirvagliair, Cappeen, Co. Cork. *Journal of Irish Archaeology*, 4, 37-54.
—— 1988:0030. 'Killelton Oratory', Killelton. www.excavations.ie.
—— 1989:0078. 'Clonmacnois', Clonmacnois, Co. Offaly. www.excavations.ie.
—— 1990:0096. 'Clonmacnoise', Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1990:0067. 'Cahergal', Kimego West, Co. Kerry. www.excavations.ie.
—— 1991:0070. 'Cahergal', Kimego West, Co. Kerry. www.excavations.ie.
—— 1994. *Clonmacnoise*. Dublin: Stationery Office.

—— 1998. Clonmacnoise Cathedral, in H. King (ed.) *Clonmacnoise Studies 1: Seminar Papers 1994*. Dublin: Dúchas, 56-86.
—— (ed.) 1998. *Dublin and beyond the Pale: studies in honour of Patrick Healy*. Bray: Wordwell in association with Rathmichael Historical Society.
—— 2000. References to church buildings in the Annals, in A. P. Smyth (ed.) *Seanchas: Studies in early and medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*. Dublin: Four Courts Press, 37-52.
—— 2002. A Puzzle in Stone: the Cathedral at Glendalough. *Archaeology Ireland*, 16(2), 18-21.
—— 2003. Some early masonry churches and the round tower at Clonmacnoise, in King, H (ed.) *Clonmacnoise Studies 2: Seminar Papers 1998*. Dublin: Stationery Office, 63-96.
—— 2006. The adaption of early masonry churches in Ireland for use in later medieval times, in M. Meek (ed.) *The Modern Traveller to our Past: Festschrift in honour of Ann Hamlin*. Dublin. DPK, 243-48.
—— 2009. A suggested typology for Pre-Romanesque Stone Churches in Ireland, in N. Edwards (ed.) *The Archaeology of the Early Medieval Celtic Churches: Proceedings of a Conference on the Archaeology of the Early Medieval Celtic Churches, September 2004*. Leeds: Maney, 265-79.
Manning, C. & Moore, F. 1991. An Ogham Stone find from Clonmacnoise. *Archaeology Ireland*, 5(4), 10-11.
Mansi, J. D. (ed.) 1902. *Sacrocum Conciliorum Novae et Amplisima Collectio*, Vol XX. Paris: H. Welter.
Marshall, J. W. 2003. *Illaunloughan Island: an early medieval monastic site in County Kerry*. Archaeology Ireland heritage guide 24. Bray: Wordwell.
Marshall, J. W. & Rourke, G. D. 2000a. The secular origin of the monastic enclosure wall of High Island, Co. Galway. *Archaeology Ireland*, 14(2), 30-34.
—— 2000b. *High island: an Irish monastery in the Atlantic*. Dublin. Dublin: Town House & Country House.
Marshall, J. W. & Walsh, C. 1994. Illaunloughan: Life and death on a small early monastic site. *Archaeology Ireland*, 8(4), 25-28.
—— 2005. *Illaunloughan Island: An early medieval monastery in County Kerry*. Bray: Wordwell.
Masser, P. & Dalland, M. 2007:0388. Carnmeen, Co. Down. www.excavations.ie.
May, A. McL. 1943. Portbraddan Cave, County Antrim. *Ulster Journal of Archaeology*, 6, 39-60.
May, A. McL. & May R. L. 1945. Iron Age Pits, Camus, Co. Londonderry. *Ulster Journal of Archaeology*, 8, 60-62.
May, A. McL. & Copper, D. C. 1939. Rock-Hewn Souterrain, Ballintemple, Garvagh, Co. Londonderry. *Ulster Journal of Archaeology*, 2, 82-88.
Meek, M. (ed.) 2006. *The Modern Traveller to our Past: Festschrift in honour of Ann Hamlin*. Dublin. DPK.
Meenan, R. 2003:1447. Posseckstown, Co. Meath. www.excavations.ie.
—— 2004. The excavation of pre-Norman burials and ditch near St Michan's church, Dublin, in S. Duffy (ed.) *Medieval Dublin V: proceedings of the Friends of Medieval Dublin Symposium 2003*. Dublin: Four Courts Press, 91–110.
Megaw, A. H. S. & Jones, R. E. 1983. Byzantine and allied pottery: a contribution by chemical analysis to problems of origin and distribution, *Annual of the British School at Athens*, 78, 235-63.
Meighan, I. G. 2007. Sourcing the Nendrum Millstone Material, in T. C. McErlean & N. Crothers (eds.) *Harnessing the Tides: the Early Medieval Tide Mills at Nendrum Monastery*. Norwich, 204-5.
Meyer, K. 1892. *Aislinge Meic Conglinne, The Vision of McConglinne, a Middle-Irish wonder Tale*. London.
—— 1909. *Tecosca Cormaic*. Todd Lecture Series 15, Dublin.
—— 1912. *Sanas Cormaic – an Old Irish glossary*. Dublin: Hodges & Figgis.
Mitchell, G. F. 1986. *The Shell guide to reading the Irish landscape*. Dublin: Country House.
—— 1989. *Man and environment on Valentia Island*. Dublin: Royal Irish Academy.
Mitchell, G. F., Dickson, C. A., & Dickson, J. H. 1987. *Archaeology and environment in early Dublin*. Dublin: Royal Irish Academy.
Mitchell, G. F. & Ryan, M. 1998. *Reading the Irish landscape*. Dublin: Town House.
Moloney, A. & Keane, M. 1992:0141. Bofeenaun, Co. Sligo. www.excavations.ie.
Moloney, C. 2003:0188. Carrigrohane, Co. Cork. www.excavations.ie.
—— 2003:0989. Cloghabrody, Co. Kilkenny. www.excavations.ie.
Molyneux, T: 1725; *A Discourse concerning the Danish Mounts, Forts and Towers in Ireland*. Dublin: George Grierson – included in G. Boate, T. Molyneux, *et al*. *A Natural History of Ireland in Three Parts*. Dublin: G & A Ewing, 1750.
Mongey, L. 1933. Ring-fort and souterrain at Ballykilmurry, Parish of Kilrossanty, Co. Waterford (note). *Journal of the Royal Society of Antiquaries of Ireland*, 63, 248-50.
—— 1934. Ballykilmurry ring-fort, Co. Waterford, (acknowledgment). *Journal of the Royal Society of Antiquaries of Ireland*, 64, 150.
Monk, M. A. 1981. Post-Roman Drying Kilns and the Problem of Function: Preliminary Statement, in D.

Ó Corrain (ed.) *Irish Antiquity: Essays and Studies Presented to Professor M.J. O'Kelly*. Blackrock: Four Courts Press, 216-30.
—— 1986. Evidence from macroscopic plant remains for crop-husbandry in prehistoric and early historic Ireland: A review. *Journal of Irish Archaeology*, 3, 31-36.
—— 1987. Experimental Archaeology. *Archaeology Ireland*, 1(2), 65-66.
—— 1988. Excavations at Lisleagh Ringfort, north Cork. *Archaeology Ireland*, 2(2), 57-60.
—— 1991:0026. 'Lisleagh II', Lisleagh, Co. Cork. www.excavations.ie.
—— 1995. A tale of two ringforts: Lisleagh I and II. *Journal of the Cork Historical and Archaeological Society*, 100, 105-16.
—— 1998. Early Medieval Secular and Ecclesiastical Settlement in Munster, in M. A. Monk and J. Sheehan (eds.) *Early medieval Munster: archaeology, history, and society*. Cork: Cork University Press, 33-52.
Monk, M. A. & Kelleher, E. 2005. An assessment of the archaeological evidence for Irish corn drying kilns in the light of the results of archaeological experiments and archaeobotanical studies. *Journal of Irish Archaeology*, 14, 77-114.
Monk, M. A. & Sheehan, J. (eds.) 1998. *Early medieval Munster: archaeology, history, and society*. Cork: Cork University Press.
Monk, M. A., Tierney, J., & Hannon, M. 1998. Archaeobotanical Strudies and Early Medieval Munster, in M. A. Monk and J. Sheehan (eds.) *Early medieval Munster: archaeology, history, and society*. Cork: Cork University Press, 65-75.
Monteith, J. 2006:1089. Rossinan, Co. Kilkenny. www.excavations.ie.
Monteith, J. & Wren. J. 2008. Drying the harvest: cereal-drying kilns on the N9/N10. *Seanda*, 3, 28-30.
Montgomery, A. V. 1955. The Bishop's grave at Clonfad. *Ríocht na Mídhe*, 1(1), 41-42.
Moog, B. 1994. *The Horizontal watermill: history and technique of the first primer mover*. The Hague: International Molinological Society.
Moore, D. 1998:0419. Carlingford, Co. Louth. www.excavations.ie.
—— 1998:0468. Mullagharlin and Haggardstown, Co. Louth. www.excavations.ie.
—— 2001:0858. Haggardstown, Dundalk, Co. Louth. www.excavations.ie.
—— 2001:1055. Site 2, Sheephouse, Co. Meath. www.excavations.ie.
Moore, F. 1991:0067. Brackloon, Co. Kerry. www.excavations.ie.
—— 1996. Ireland's Oldest bridge- at Clonmacnoise. *Archaeology Ireland*, 10(4), 24-27.
—— 2007. *Ardfert Cathedral: Summary of Excavation Results*. Dublin: Stationery Office.
Morahan, L. 1998:0474. Aghtaboy, Co. Mayo. www.excavations.ie.
Moran, J. 1999:0852. 17-18 Broad Street, Co. Waterford. www.excavations.ie.
—— 1997:0488. Old Road, Cahsel, Co. Tipperary. www.excavations.ie.
—— 1998:0598. Old Road, Cashel, Co. Tipperary. www.excavations.ie.
Moriarty, C. 2006:1894. Marlhill, Co. Tipperary. www.excavations.ie.
Morris, H. J. 1934. The Muiredach Cross at Monasterboice: a new interpretation of three of its panels. *Journal of the Royal Society of Antiquaries of Ireland*, 64, 203-12.
Morrison, M. 1953. Report on Charcoal and Carbonised Seeds. *Ulster Journal of Archaeology,* 16, 53-54.
Moss, R. (ed.) 2007. *Making and meaning in Insular Art: proceedings of the fifth International Conference on Insular Art held at Trinity College Dublin, 25-28 August 2005*. Dublin: Four Courts Press.
Moss, R. J. 1927. A chemical examination of the crucibles in the collection of Irish antiquities in the Royal Irish Academy. *Proceedings of the Royal Irish Academy*, 37C, 175-193.
Mossop, M. 2002:1335. Marshes Upper, Co. Louth. www.excavations.ie.
—— 2002:1341. Area 16, Marshes Upper, Dundalk. www.excavations.ie.
Mount, C. 1992. Killanully, Co. Cork, in S. Cherry (ed.) *Digging up Cork, Archaeological Excavations in Cork 1992*. Cork: Cork Museum.
—— 1994. From Knoxspark to Tír na nóg. *Archaeology Ireland,* 8(3), 22-23.
—— 1995. Excavations at Killanully, Co Cork. *Proceedings of the Royal Irish Academy*, 95C, 119-57.
—— 2002. The promontory fort, inhumation cemetery and sub-rectangular enclosure at Knoxspark, Co. Sligo, in M. Timoney (ed.) *A celebration of Sligo– First essays for the Sligo Field Club*. Sligo: Sligo Field Club, 103-16.
—— 2010. Excavation of an early medieval promontory fort and enclosed cemetery at Knoxspark, Co. Sligo, in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin, Wordwell, 187-216.
Movius, H. L. 1935. Kilgreany Cave, County Waterford. *Journal of the Royal Society of Antiquaries of Ireland*, 65, 254-96.
Mullins, C. 1999. Archaeological excavation of a mound at Cooldrinagh, Co. Dublin. *Journal of the Royal Society of Antiquaries of Ireland*, 129, 90-104.
—— 1999:0888. Taghmon, Co. Wexford. www.excavations.ie.
Munn, M. L. Z. 1985. A Late Roman kiln site in the Hermionid, Greece. *American Journal of Archaeology*, 89, 342-43.

Murphy, Deirdre. 1998. Archaeological Excavation of a Souterrain at Farrandreg, Dundalk, County Louth. *Journal of the County Louth Archaeological and Historical Society*, 24(2), 261-80.
—— 2000:0990. Shandon, Dungarvan, Co. Waterford. www.excavations.ie.
—— 2001:0045. Balycasey More, Co. Clare. www.excavations.ie.
—— 2001:0055. Clonmoney West, Co. Clare. www.excavations.ie.
—— 2002:1465. Hardwood 2, Co. Meath. www.excavations.ie.
—— 2003:0347. Skahanagh North 3, Co. Cork. www.excavations.ie.
—— 2004:1186. Betaghstown**,** Co. Meath. www.excavations.ie.
—— 2005:1158. Betaghstown**,** Co. Meath. www.excavations.ie.
—— 2008. Hardwood 2, Co. Meath, in Carlin, N. *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Bray: Wordwell, CD Excavation Reports.
Murphy, Donald. 1994:0181. Harristown, Co. Louth. www.excavations.ie.
—— 1995:0200. 30 Peter St, Drogheda, Co. Louth. www.excavations.ie.
—— 2000:0478. Colp West, Co. Meath. www.excavations.ie.
—— 2000:0935. Site A1, Coolaholloga, Co. Tipperary. www.excavations.ie.
—— 2000:0965. Site C1, Solsborough, Co. Tipperary. www.excavations.ie.
—— 2000:0969. Sites T, U, V, W, Tullahedy, Co. Tipperary. www.excavations.ie.
—— 2002:0472. St Peter's Church, Balrothery. www.excavations.ie.
—— 2003. Excavation of an Early Monastic Enclosure at Clonmacnoise, in H. King (ed.) *Clonmacnoise Studies*. Dublin: Stationery Office, 2, 1-33.
Murphy, Donald & Conway, M. 1999:0590. Dromiskin, Co. Louth. www.excavations.ie.
Murphy, Donald & Rathbone, S. 2006. Excavations of an early medieval vertical watermill at Killoteran, County Waterford, in J. O'Sullivan & M. Stanley (eds.) *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 19-28.
Murphy, E. M. & Whitehouse, N. J. (eds.) 2007. *Environmental archaeology in Ireland*. Oxford: Oxbow Press.
Murphy, T. F. & Ó Cuileanáin, C. 1961. A ringfort at Old Court, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 66, 79-92.
Murray, C. 1997:0546. Der54 and DerR56, Killoran, Co. Tipperary. www.excavations.ie.
Murray, E. V. 2002a. The mammal bones from Rathgureen ringfort, in M. Comber (ed.) M.V. Duignan's Excavations at the ringfort at Rathgureen, Co. Galway, 1948-9. *Proceedings of the Royal Irish Academy*, 102C, 186-91.
—— 2002b. Marine molluscan remains from Rathgureen ringfort, in M. (ed.) M.V. Duignan's Excavations at the ringfort at Rathgureen, Co. Galway, 1948-9. *Proceedings of the Royal Irish Academy* 102C, 194-97.
—— 2007. Molluscs and Middens: The Archaeology of 'Ireland's Early Savage Race'?, in E. M. Murphy & N. J. Whitehouse (eds.) *Environmental Archaeology of Ireland*. Oxford. Oxbow, 119-35.
—— 2008a. The mammal bones from Rathgurreen ringfort, in M. Comber, *The economy of the ringfort and contemporary settlement in early medieval Ireland*. BAR International Series, 1773. Oxford, Archaeopress, 285-93.
—— 2008b. Marine molluscan remains from Rathgurreen ringfort, in M. Comber, *The economy of the ringfort and contemporary settlement in early medieval Ireland*. BAR International Series, 1773. Oxford, Archaeopress, 295-300.
Murray, E. V. & Logue, P. 2010. *Battles, Boats and Bones: Archaeological Discoveries in Northern Ireland 1987-2008*. Norwich: TSO.
Murray, E. V., & McCormick, F. 2005. Environmental analysis and the food supply, in J. Marshall & C. Walsh (eds.) *Illaunloughan Island: An early medieval monastery in County Kerry*. Bray, Wordwell, 67-80.
Murray, E. V., McCormick, F. and Plunkett, G. 2004. The food economies of Atlantic island monasteries: The documentary and archaeo-environmental evidence. *Environmental Archaeology*, 9, 179-89.
Murray, H. 1983. *Viking and early medieval buildings in Dublin*. Oxford: Tempus Reparatum.
Murtagh, B. 1993. The Kilkenny Castle archaeological project, 1990–1993: Interim Report. *Old Kilkenny Review* (Second Series), 4(5), 110-17.
—— 1994. Archaeological investigations at Dysart, Co. Kilkenny 1989-1994: an interim report. *Old Kilkenny Review*, 46, 78-94.
Mytum, H. 1992. *The Origins of early Christian Ireland*. London: Routledge.

Neary, P. J. H. 2000:0514. Ardclone, Co. Kilkenny. www.excavations.ie.
Neill, K. 1989:0020. 'Raholp Old Church', Raholp, Co. Down. www.excavations.ie.
—— 2009. *An Archaeological Survey of Co. Armagh*. Belfast: TSO.
Neill, M. 1991. A lost last. *Archaeology Ireland*, 5(2), 14-15.
Nelis, E. 2005:0007. St Patrick's Church, Armoy, Co. Antrim. www.excavations.ie.

Nelson, M. 2005. *The Barbarian's Beverage: A History of Beer in Ancient Europe*. London: Routledge.
Neuman de Vegvar, C. 2003. Romanitas and Realpolitik in Cogitosus's description of the church of St Brigit, Kildare, in M. Carver (ed.) *The Cross goes North: Processes of Conversion in Northern Europe, A.D. 300-1300*. Woodbridge: Boydell and Brewer, 153-70.
Ní Chatháin, P. & Richter, M. (eds.) 1996. *Ireland and Europe in the Early Middle Ages: learning and literature/ Irland und Europa im fruheren Mittelalter: Bildung und Literatur*. Stuttgart: Klett-Cotta.
—— (eds.) 2002. *Ireland and Europe in the Early Middle Ages: texts and transmission/ Irland und Europa im frühen Mittelalter: Texte und Überlieferung*. Dublin: Four Courts.
Ní Ghabhláin, S. 1997:0221. Mainistir Chiaráin, Oghill, Inis Mór, Co. Galway. www.excavations.ie.
—— 1998:0259. Mainistir Chiaráin, Oghill, Inis Mór, Co. Galway. www.excavations.ie.
—— 1999:0306. Mainistir Chiaráin, Inis Mór, Co. Galway. www.excavations.ie.
Ní Ghabhláin, S & Moran, J. 1996:0161. Mainistir Chiaráin, Oghill, Inis Mór, Co. Galway. www.excavations.ie.
Ní Loingsigh, M. 2003:0225. Main Street South, Co. Cork. www.excavations.ie.
—— 2003:0201. Castlewidenham, Co. Cork. www.excavations.ie.
—— 2005:0226. 40-48 Main Street South, Co. Cork. www.excavations.ie.
Nicol, S. 2006:0101. Lissue and Knockmore, Co. Antrim. www.excavations.ie.
Noonan, D. 2001:0115. Ballynacarriga 1, Co. Cork. www.excavations.ie.
—— 2001:0116. Ballynacarriga 2, Co. Cork. www.excavations.ie.
Norman, E. R. & St Joseph, J. K. S. 1969. *The early development of Irish society: The Evidence of Aerial Photography*. Cambridge: Cambridge University Press.

Ó Baoill, R. 1992:0034. Downpatrick, Cathedral Hill, Co. Down. www.excavations.ie.
—— 1994:0040. Cathedral Hill, Downpatrick, Co. Down. www.excavations.ie.
—— 2000:0352. Aghavea Church, Aghavea, Co. Fermanagh. www.excavations.ie.
—— 2000. *Excavations at Aghavea, County Fermanagh*. Centre for Archaeological Fieldwork (CAF) Structure Report No. 046. Queen's University Belfast
—— 2004:0057. Magheralane/Aghalislone/Magheralave, Co. Armagh. www.excavations.ie.
O'Brien, E. 1990:0043. Old Bawn Road, Tallaght, Co. Dublin. www.excavations.ie.
—— 1992. Pagan and Christian burial in Ireland during the first millennium A.D.: continuity and change, in N. Edwards & A. Lane (eds.) *The Early Church in Wales and the West: recent work in Early Christian archaeology, history and place-names*. Oxford: Oxbow Press, 130-37.
—— 1993. Contacts between Ireland and Anglo-Saxon England in the seventh century. *Anglo-Saxon Studies in Archaeology and History*, 6, 93-102.
—— 1995. A tale of two cemeteries. *Archaeology Ireland*, 9(3), 13-15.
—— 1998. The location and context of Viking-age burials at Kilmainham and Islandbridge, Dublin, in H. Clarke *et al*. (eds.) *Ireland and Scandinavia in the early Viking age*. Dublin: Four Courts Press, 203-21.
—— 1999a. *Post-Roman Britain to Anglo-Saxon England: Burial Practices Reviewed*. British Archaeological Report 289, Archaeopress, Oxford.
—— 1999b. Excavation of a multi-period burial site at Ballymacaward, Ballyshannon, Co. Donegal. *Donegal Annual*, 51, 56-61.
—— 2003. Burial practices in Ireland: first to seventh centuries A.D., in J. Downes & A. Ritchie (eds.) *Sea change: Orkney and Northern Europe in the later Iron Age, A.D. 300-800*. Angus: Pinkfoot Press, 63-72.
—— 2009. Pagan or Christian? Burial in Ireland during the 5th to 8th centuries A.D., in N. Edwards (ed.) *The Archaeology of Early Medieval Celtic Churches*. Leeds: Society for Medieval Archaeology Monograph 29, 135-54
O'Brien, R. 1997:0087. Grange Castle Business Park, Kilmahuddrick, Clondalkin, Co. Dublin. www.excavations.ie.
—— 2007. If the shoe fits: a new find from Annaholty Bog, Co. Tipperary. *Seanda*, 2, 47.
—— 2010. Spindle-whorls and hand spinning in Ireland, in M. Stanley, E. Danaher and J. Eogan (eds.) *Creative minds: production, manufacture and invention in ancient Ireland,* Monograph 7, Dublin NRA, 15-26.
O'Brien, R. & Russell, I. 2004. A preliminary note on the archaeological site of Woodstown 6, Co. Waterford. *Decies: Journal of the Waterford Archaeological and Historical Society*, 60, 65-70.
—— 2005. The Hiberno-scandinavian site of Woodstown 6, County Waterford, in J. O'Sullivan & M. Stanley (eds.) *Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell, 111-24.
O'Brien, R., Quinney, P., & Russell, I. 2006. Preliminary report on the archaeological excavations and finds retrieval straegy of the Hiberno-Scandinavian site of Woodstown 6, County Waterford. *Decies: Journal of the Waterford Archaeological and Historical Society*, 61, 13-95.

O'Brien, W. 2002:0238. Barrees, Co. Cork. www.excavations.ie.
—— 2003:0174. Barrees, Co. Cork. www.excavations.ie.
—— 2004. *Ross Island: mining, metal and society in early Ireland*. Galway: NUIG.
—— 2009. *Local Worlds: Upland Farming and Early Settlement Landscapes in Southwest Ireland*. Cork: Collins Press.
O'Brien, W. and M. Comber. 2008. Archaeological investigations at Ross Island Cave, Killarney, Co. Kerry. *Journal of Irish Archaeology*, 17, 19-56.
O'Callaghan, N. 2003:0176. Brigown, Co. Cork. www.excavations.ie.
—— 2004:0753. Glanbane, Co. Kerry. www.excavations.ie.
Ó Carragáin, T. 2003a. The Architectural Setting of the Cult of Relics in Early Medieval Ireland. *Journal of the Royal Society of Antiquaries of Ireland*, 133, 130-76.
—— 2003b. A Landscape Converted: Archaeology and early Church organisation on Iveragh and Dingle, Ireland, in M. Carver (ed.) *The Cross Goes North. Processes of Conversion in Northern Europe, A.D. 300-1300*. York: Woodbridge, 127-152.
—— 2005a. Regional Variation in Irish Pre-Romanesque Architecture. *Antiquaries Journal*, 85, 23-56.
—— 2005b. Habitual masonry styles and the organisation of church building in early medieval Ireland. *Proceedings of the Royal Irish Academy*, 105C, 99-149.
—— 2006. Church buildings and pastoral care in early medieval Ireland, in E. FitzPatrick and R. Gillespie (eds.) *The Parish in Medieval and Post-Medieval Ireland*. Dublin: Four Courts, 95-109.
—— 2009a. The Saint and the Sacred Centre: The Early Medieval Pilgrimage Landscape of Inishmurray, in N. Edwards (ed.) *The Archaeology of the Early Medieval Celtic Churches*. Society for Medieval Archaeology Monograph 29. Leeds: Maney, 207-26.
—— 2009b. The Architectural Setting of the Mass in early-Medieval Ireland. *Medieval Archaeology*, 53, 119-54.
—— 2010a. From family cemeteries to community cemeteries in Viking Age Ireland? in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin, Wordwell, 217-226
—— 2010b. *Churches in Early Medieval Ireland*. London: Yale University Press.
O'Carroll, E. 1996:0327. Lemanaghan, Co. Offaly. www.excavations.ie.
—— 1999. A trek through the bogs. *Archaeology Ireland*, 13(3), 32-33.
—— 1999:0742. Killaghintober Bog, Castlearmstrong, Co.. www.excavations.ie.
—— 1999:0743. Killaghintober Bog, Castlearmstrong, Co. Offaly. www.excavations.ie.
—— 2000:0803. Monettia Bog, Ballinvally, Co. Offaly. www.excavations.ie.
—— 2000:0829. Corhill Bog, Lisdermot, Co. Offaly. www.excavations.ie.
—— 2000:0834. Corhill Bog, Lisdermot, Co. Offaly. www.excavations.ie.
O'Carroll, F. 1999:0544. Haggardstown, Blackrock, Co. Louth. www.excavations.ie.
—— 2002:1284. 28 Castle Street, Ardee, Co. Louth. www.excavations.ie.
O'Connell, A. 2004. Recent archaeological investigations at Kill St Lawrence, Waterford, carried out as part of the Realignment of the R708 airport road. *Decies: Journal of the Waterford Archaeological & Historical Society*, 60, 27-64.
—— 2003:0240. Corrin 1, Co. Cork. www.excavations.ie.
—— 2006. The many lives of Castlefarm. *Seanda*, 1, 19-24.
—— 2009a. Excavations at Castlefarm—director's first findings, in M. Deevy and D. Murphy (eds.) *Places along the way: first findings on the M3*. National Roads Authority Scheme Monograph Series 5. Dublin: National Roads Authority/Wordwell, 43-56.
—— 2009b. Director's first findings from excavations at Lismullin 1, in M. Deevy and D. Murphy (eds.) *Places along the way: first findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell, 21-42.
—— 2009c. Excavations at Church Road and the Early Monastic Foundation at Lusk, Co. Dublin, in C. Baker (ed.) *Axes, Warriors and Windmills: Recent Archaeological Discoveries in North Fingal*. Dublin: Fingal County Council, 51-63.
O'Connor, L. 1966. Faughart investigation, 1966. *Journal of the Louth Archaeological and Historical Society*, 16(2), 125-29.
O'Connor, M. 1944. The excavation of three earthen ring-forts in the Liffey valley (note). *Journal of the Royal Society of Antiquaries of Ireland*, 74, 53-60.
O'Conor, K. 1998. *The Archaeology of Medieval Rural Settlement in Ireland*. Discovery Programme Monograph 3. Dublin: Discovery Programme and Royal Irish Academy.
Ó Corrain, D. 1981. The early Irish churches: some aspects of organization, in D. Ó Corrain (ed.) *Irish antiquity: essays and studies presented to Professor M.J. O'Kelly*. Dublin: Four Courts Press.
—— (ed.) 1981. *Irish Antiquity: Essays and studies presented to M.J. O'Kelly*. London: Tower Books.
—— 1983. Some legal references to fences and fencing in early historic Ireland, in T. Reeves-Smyth & F. Hammond (eds.) *Landscape Archaeology in Ireland*. Oxford: Tempus Reparatum, 247-51.
—— 2005a. The stony Vikings of Cell Belaig, in T. Condit and C. Corlett (eds.) *Above and Beyond: Essays in memory of Leo Swan*. Bray: Wordwell, 341-49.
—— 2005b. Ireland *c.* 800: Aspects of Society, in D. Ó Cróinín (ed.) *A new history of Ireland. Vol. 1*

Prehistoric and early Ireland. Oxford: Oxford University Press, 549-608.
Ó Cróinín, D. 1995. *Early medieval Ireland, c. AD 400 - AD1200*. London: Longman history of Ireland.
—— (ed.) 2005. *A new history of Ireland: Vol. 1 Prehistoric and early Ireland*. Oxford: Oxford University Press.
Ó Cuileanáin, C. 1955. Excavations of a Circular Stone House at Glannafeen, Co. Cork. *Journal of the Royal Society of Antiquaries of Ireland*, 85, 94-99.
Ó Donnabháin, B. 1980-84:0060. Liscahane, Co. Cork. www.excavations.ie.
—— 1983. Liscahane. *Medieval Archaeology*, 27, 217.
—— 2001. A cut above: cranial surgery in medieval Dublin, in S. Duffy (ed.) *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000*. Dublin: Four Courts Press, 216-32.
Ó Donnabháin, B. & Hallgrímsson, B. 2001. Dublin: the biological identity of the Hiberno-Norse town, in S. Duffy (ed.) *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000*. Dublin: Four Courts Press, 65-87.
O'Donnell, M. 1986:0077. Mayfield or Rocket's Castle, Co. Waterford. www.excavations.ie.
—— 1991:0022. 'Lisnacaheragh', Garranes, Co. Cork. www.excavations.ie.
—— 1997:0246. Scrahane, Co. Kerry. www.excavations.ie.
—— 1998:0284. Scrahane 1, Co. Kerry. www.excavations.ie.
—— 1999:0851. Bailey's New Street, Co. Waterford. www.excavations.ie.
O'Donovan, E. 1999:0515. Abbey River, Co. Limerick. www.excavations.ie.
—— 2002:0686. Mount Gamble, Miltonsfields, Swords, Co. Dublin. www.excavations.ie.
—— 2008. The Irish, the Vikings and the English: new archaeological evidence from excavations at Golden Lane, Dublin, in S. Duffy (ed.) *Medieval Dublin VIII: Proceedings of the friends of medieval dublin symposium 2006*. Dublin: Four Courts Press, 36-130.
O'Donovan, J. 1847. *Leabhar na g-Ceart or the Book of Rights*. Edition published by the Adamant Media Corporation (2000).
Ó Drisceoil, C. 2000:0720. Site 1, Whiterath, Co. Louth. www.excavations.ie.
—— 2000:0721.Site 2, Whiterath, Co. Louth. www.excavations.ie.
—— 2002. Recycled ringforts: the evidence from archaeological excavation for the conversion of pre-existing monuments to motte castles in medieval Ireland. *Journal of the Louth Archaeological and Historical Society*, 25(2), 189-201.
Ó Droma, M. 2008. Archaeological investigations at Twomileborris, Co. Tipperary: Roads, in J. O'Sullivan and M. Stanley (eds.) *Rediscovery and Research: Proceedings of a Public Seminar on Archaeological Discoveries on National Road Schemes, August 2007*. Bray: Wordwell, 5, 45-59.
Ó Faoláin, D. 1992:0094. 'Rathnapoura', Rinville West, Co. Galway. www.excavations.ie.
O'Flaherty, B. 1982. Ringfort at Glanturkin, Gyleen, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 87, 128-31.
—— 1985:0034. Loher, Co. Kerry. www.excavations.ie.
Ó Floinn, R. 1977-79:0063. Clonmacnoise, Co. Offaly. www.excavations.ie.
—— 1985:0053. Lurgoe (Derrynaflan), Co. Tipperary. www.excavations.ie.
—— 1986:0070. 'Derrynaflan', Lurgoe, Co. Tipperary. www.excavations.ie.
—— 1987:0044. 'Derrynaflan', Lurgoe, Co. Tipperary. www.excavations.ie.
—— 1995. Sandhills, Silver and Shrines: Fine metalwork of the medieval period in Donegal, in W. Nolan *et al*. (eds.) *Donegal: History and County*. Dublin: Geography Publications, 85-149.
—— 1998a. The archaeology of the early Viking age in Ireland, in H. Clarke *et al*. (eds.) *Ireland and Scandinavia in the early Viking age*. Dublin: Four Courts Press, 131-65.
—— 1998b. Clonmacnoise: art and patronage in the early medieval period, in H. King (ed.) *Clonmacnoise Studies: Seminar Papers Vol. 1*. Dublin: Dúchas, 87-100.
—— 1998c. Two Viking burials from County Wicklow. *Wicklow Archaeology and History*, 1, 29-35.
—— 1999. The date of some metalwork from Cahercommaun reassessed. C. Cotter *Cahercommaun fort, Co Clare: a reassessement of its cultural context.* Discovery Programme Reports 5. Dublin: Royal Irish Academy/ Discovery Programme, 73-79.
Ó Floinn, R. & King, H. 1998. Archaeological invertigations at St Ciaran's National School, in King, H (ed.) *Clonmacnoise Studies 1: seminar papers 1994*. Dublin: Dúchas, 119-132.
O'Hara, R. 2002:1337. Area 6, Marshes Upper, Dundalk, Co. Louth. www.excavations.ie
—— 2002:1423. Balgeen 4 EXT., Co. Meath. www.excavations.ie.
—— 2002:1499. Newcastle 2, Co. Meath. www.excavations.ie.
—— 2005:0315. Ballaghderg, Co. Donegal. www.excavations.ie.
—— 2007. Roestown 2, Co. Meath: an excavation on the M3 Clonee to North of Kells motorway scheme, in J. O'Sullivan & M. Stanley (eds.) *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*. Bray: Wordwell, 141-51.
—— 2008. Newcastle 2, Co. Meath, in Carlin, N. *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Bray: Wordwell, CD Excavation Reports.

—— 2009a. Early medieval settlement at Roestown 2, in M. Deevy and D. Murphy (eds.), *Places along the way: first findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell, 57-82.
—— 2009b. Collierstown 1: a late Iron Age-early medieval enclosed cemetery, in M. Deevy and D. Murphy (eds.), *Places along the way: first findings on the M3*. National Roads Authority Scheme Monograph Series 5. Bray: Wordwell, 83-100.
Ó hÉailidhe, P. 1973. Early Christian grave slabs in the Dublin region. *Journal of the Royal Society of Antiquaries of Ireland*, 103, 51-64.
O'Keeffe, T. 1992. Early Christian hermitage discovered on Omey Island. *Archaeology Ireland*, 6(3), 5.
—— 1994a. Lismore and Cashel: reflections of the beginnings of Romanesque architecture in Munster. *Journal of the Royal Society of Antiquaries of Ireland*, 124, 118-52.
—— 1994b. Omey and the sand of time. *Archaeology Ireland*, 8(2), 14-17.
—— 1998. Architectural traditions of the early medieval church in Munster, in M. A. Monk & J. Sheehan (eds.) *Early Medieval Munster: Archaeology, History and Society*. Cork: Cork University Press, 112-24.
—— 2000. *Medieval Ireland: an archaeology*. Stroud: Tempus.
—— 2003. *Romanesque Ireland: architecture and ideology in the twelfth century*. Dublin: Four Courts Press.
—— 2004. *Ireland's Round Towers*. Stroud: Tempus.
—— 2006. The built environment of local community worship between the late eleventh and early thirteenth centuries, in E. FitzPatrick and R. Gillespie (eds.) *The Parish in Medieval and Early Modern Ireland*. Dublin: Four Courts, 124-46.
O'Kelly, M. J. 1951. Forts, Carrigillihy townland, near Union Hall, Co. Cork. *Journal of the Royal Society of Antiquaries of Ireland*, 81, 71-72.
—— 1952. St Gobnet's House, Ballyvourney, Co. Cork, *Journal of the Cork Historical and Archaeological Society*, 57, 18-40.
—— 1956. An island settlement at Beginish, Co. Kerry. *Proceedings of the Royal Irish Academy*, 57C, 159-94.
—— 1958. Church Island near Valencia, Co. Kerry. *Proceedings of the Royal Irish Academy*, 59C, 57-136.
—— 1962. Béal Ború, Co. Clare. *Journal of the Cork Historical and Archaeological Society*, 67, 1-27.
—— 1963. Two ring-forts at Garryduff, Co. Cork. *Proceedings of the Royal Irish Academy*, 63C, 17-125.
—— 1967. Knockea, Co. Limerick, in E. Rynne (ed.) *North Munster Studies: Essays in commemoration of Monsignor Michael Moloney*. Limerick: Thomond Archaeological Society, 72-101.
—— 1970. Problems of Irish ringforts, in D. Moore (ed.) *The Irish Sea Province in archaeology and history*. Cardiff: Aberystwyth, 50-54.
—— 1975*. Archaeological Survey and Excavtion of St Vogue's Church, Enclosure and other Monuments at Carnsore, Co. Wexford*. Dublin: Electricity Supply Board.
Ó Lochlainn, C. 1940. Roadways in ancient Ireland, in J. Ryan (ed.) *Essays and studies presented to Professor Eoin MacNeill on the occasion of his seventieth birthday May 15th, 1938*. Dublin: Faoi Chomhartha na dTrí gCoinneal, 465-74.
O'Mahoney, T. & Richey, A.G. 1873. *Ancients Laws of Ireland V.3: Or Customary Law and The Book of Aicill*. London: Longmans, Green, Reader and Dyer.
O'Meara, J. 1951. *The first version of the Topography of Ireland*. Dundalk: Dundalgan Press.
Ó Néill, J. 1998:0020. Drummany, Co. Cavan. www.excavations.ie.
—— 1999. A Norse settlement in rural county Dublin. *Archaeology Ireland*, 13(4), 8-10.
—— 1999:0169. Cherrywood Science and Technology Park, Cherrywood. www.excavations.ie.
—— 2000:0205. Ballymount Castle, Ballymount Great, Co. Dublin.www.excavations.ie.
—— 2002:0462. Ballymount, Ballymount Great, Co. Dublin. www.excavations.ie.
—— 2003:0016. The Bishop's Palace, Kilroot, Co. Antrim. www.excavations.ie.
—— 2004. Excavations at Longford Street Little, Dublin: an archaeological approach to Dubh Linn, in S. Duffy (ed.) *Medieval Dublin V: proceedings of the Friends of Medieval Dublin Symposium 2003*. Dublin: Four Courts Press, 73-90.
—— 2004:0008. St Patrick's Church, Glebe, Armoy, Co. Antrim. www.excavations.ie.
—— 2006. Excavaton of pre-Norman structures on the site of an enclosed Early Christian cemetery at Cherrywood, County Dublin, in S. Duffy (ed.) *Medieval Dublin VII: proceedings of the Friends of Medieval Dublin Symposium 2002*. Dublin: Four Courts Press, 66-88.
Ó Néill, J. & Coughlan, J. 2010. An enclosed early medieval settlement at Cherrywood, Co. Dublin, in C. Corlett & M. Potterton (eds.) *Death and Burial in Early Medieval Ireland*. Dublin, Wordwell, 239-50
O'Neill, T. 2002:0079. Balycasey More, Co. Clare. www.excavations.ie.
—— 2004:1080. Dundalk Racecourse, Dowdallshill, Co. Louth. www.excavations.ie.
—— 2006. Parknahown 5: An Extensive Cemetery at the River Goul. *Seanda*, 1, 32.
—— 2007a. The hidden past of Parknahown, Co. Laois, in J. O'Sullivan & M. Stanley (eds.) *New Routes*

to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006. Bray: Wordwell, 133-39.
—— 2007b. Medieval Enclosure, in E. Danaher (ed.) *Monumental beginnings: the archaeology of the N4 Sligo inner relief road: National Roads Authority Monograph 1*. Bray Wordwell
—— 2008. Unearthing the past: discoveries at Parknahown, Co. Laois. *Ossory, Laois and Leinster*, 3, 1-24.
—— 2010. The changing character of early medieval burial at Parknahown 5, Co. Laois, A.D. 400-1200, in C. Corlett and M. Potterton (eds) 2010, *Death and Burial in Early Medieval Ireland in the light of recent archaeological excavations*. Dublin, Wordwell, 251-60.
Ó Riain, P. 1972. Boundary associations in early Irish society. *Studia Celtica*, 7, 12-29.
Ó Ríordáin, B. 1955. Crannog-type structures in Whitewood Lake, County Meath. *Journal of the Louth Archaeological and Historical Society*, 13(3), 289.
—— 1970:0017. High Street/Winetavern Street, Co. Dublin. www.excavations.ie.
—— 1971. Excavations at High Street and Winetavern Street, Dublin. *Medieval Archaeology*, 15, 73-85.
—— 1971:0016. Dublin City, Co. Dublin. www.excavations.ie.
—— 1972:0014. Dublin City, Co. Dublin. www.excavations.ie.
—— 1973:0017. Dublin City, Co. Dublin. www.excavations.ie.
—— 1974:0014. Dublin City, Co. Dublin: Christchurch Place. www.excavations.ie.
—— 1975:0015. Christchurch Place, Co. Dublin. www.excavations.ie.
—— 1976. The High Street excavations, in B. Almqvist & D. Greene (eds.) *Proceedings of the Seventh Viking Congress, Dublin, 15-21 August 1973*. Dublin: Royal Irish Academy for the Viking society for Northern Research, 135-40.
—— 1976:0019. Dublin City: Fishamble Street. www.excavations.ie.
Ó Ríordáin, B. & Rynne, E. 1961. A settlement in the sandhills at Dooey, Co. Donegal. *Journal of the Royal Society of Antiquaries of Ireland*, 91, 58-64.
Ó Ríordáin, S. P. 1936. Excavations in Lissard, Co. Limerick, and other sites in the locality. *Journal of the Royal Society of Antiquaries of Ireland*, 66, 173–85.
—— 1940. Excavations at Cush, Co. Limerick. *Proceedings of the Royal Irish Academy*, 45C, 83-181.
—— 1942a. The excavation of a large earthen ring-fort at Garranes, Co. Cork. *Proceedings of the Royal Irish Academy*, 47C, 77-150.
—— 1942b. *Antiquities of the Irish Countryside*. Cork: Cork University Press.
—— 1947. Roman Material in Ireland. *Proceedings of the Royal Irish Academy*, 51C, 35-82.
—— 1949a. Lough Gur excavations: Carrig Aille and the 'Spectacles'. *Proceedings of the Royal Irish Academy*, 52C, 39-111.
—— 1949b. Lough Gur excavations: three marshland habitation sites. *Journal of the Royal Society of Antiquaries of Ireland*, 79, 126-39.
—— 1950. Lough Gur Excavations: Ballingoola V (note). *Journal of the Royal Society of Antiquaries of Ireland*, 80, 262-63.
—— 1951. Ring-fort, Letterkeen townland, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland*, 81, 71.
—— 1964. *Tara*. Dundalk.
Ó Ríordáin, S. P. & Foy, J. B. 1941. The excavation of Leacanabuile Stone Fort, near Cahirciveen, Co. Kerry. *Journal of the Cork Historical and Archaeological Society*, 46, 85-99.
Ó Ríordáin, S. P. & Hartnett, P. J. 1943. The excavation of Ballycatteen Fort, Co. Cork. *Proceedings of the Royal Irish Academy*, 49C, 1-44.
Ó Ríordáin, S. P. & MacDermott, M. 1952. The excavation of a ring-fort at Letterkeen, Co. Mayo. *Proceedings of the Royal Irish Academy*, 53C, 89-119.
O'Rourke, F. J. 1945. A kitchen-midden at Dog's Bay, Roundstone, Co. Galway (note). *Journal of the Royal Society of Antiquaries of Ireland*, 75, 115-18.
O'Sullivan, A. 1993. An Early Historic period fishweir on the Fergus estuary, Co. Clare. *North Munster Antiquarian Journal*, 35, 52-61.
—— 1998a. *The archaeology of lake settlement in Ireland*. Dublin: Royal Irish Academy.
—— 1998b. Crannogs in contested landscapes. *Archaeology Ireland*, 12(2), 15.
—— 2000. *Crannogs: lake-dwellings of early Ireland*. Dublin: Country House.
—— 2001a. *Foragers, farmers and fishers in a coastal landscape: an intertidal archaeological survey of the Shannon estuary*. Dublin: Royal Irish Academy.
—— 2001b. Crannogs in late medieval Gaelic Ireland, *c.*1350-*c.*1600, in P.J. Duffy *et al.* (eds) *Gaelic Ireland: Land, lordship and settlement, c.1250-c.1660.* Dublin: Four Courts, 397-417.
—— 2003a. The Harvard Archaeological Mission and the politics of the Irish Free State. *Archaeology Ireland*, 17(1), 20-23.
—— 2003b. Place, memory and identity among estuarine fishing communities: interpreting the archaeology of early medieval fish weirs. *World Archaeology*, 35(3), 449-68.
—— 2005. Medieval fish traps on the Shannon estuary, Ireland: interpreting people, place and identity in estuarine landscapes. *Journal of Wetland Archaeology*, 5, 65-77.

—— 2008. Early medieval houses in Ireland: social identity and dwelling places. *Peritia*, 20, 226-56.
—— 2010. Early medieval crannogs and imagined islands, in G. Cooney, K. Becker, J. Coles, M. Ryan and S. Sievers (eds.) *Relics of old decency: archaeological studies in later prehistory. Festschrift for Barry Raftery.* Bray: Wordwell, 79-88.
O'Sullivan, A. & Boland, D. 2000. *The Clonmacnoise bridge: an early medieval river crossing in County Offaly*. Archaeology Ireland Heritage Guide 11, Bray: Wordwell.
O'Sullivan, A. & Breen, C. 2007. *Maritime Ireland: An Archaeology of Coastal Communities*. Stroud: Tempus.
O'Sullivan, A., McErlean, T. C., McConkey, R., & McCooey, P. 1997. Medieval fishtraps in Strangford Lough, Co. Down. *Archaeology Ireland*, 11(1), 36-38.
O'Sullivan, A., Sands, R. & Kelly, E. P. 2007. *Coolure Demesne crannog, Lough Derravaragh: an introduction to its archaeology and landscapes*. Bray: Wordwell.
O'Sullivan, A. & Nicholl, T. 2010. Early medieval settlement enclosures in Ireland: dwellings, daily life and social identity. *Proceedings of the Royal Irish Academy*, 111C, 59-90.
O'Sullivan, A. & Van de Noort, R. 2007. Temporality, cultural biography and seasonality: rethinking time in wetland archaeology, in J. Barber *et al.* (eds.) *Archaeology from the Wetlands: recent perspectives: proceedings of the 11th WARP conference, Edinburgh 2005*. Edinburgh: Society of Antiquaries of Scotland, 67-78.
O'Sullivan, A. & Warren, G. 2004:1844. Templeteenaun, Ballinagee. www.excavations.ie.
O'Sullivan, Ann. & Sheehan, J. 1996. *The Iveragh Peninsula: an archaeological survey of south Kerry = Suirbhé seandálaíochta iíbh Ráthaigh*. Cork: Cork University Press.
O'Sullivan, A. M. 1984-85. Garrylough Mill and the general development of water mills in Co. Wexford. *Journal of the Wexford Historical Society*, 10, 86-94.
O'Sullivan, J. 1998. Nationalists, archaeologists and the myth of the Golden Age, in M. A. Monk & J. Sheehan (ed.) *Early medieval Munster: archaeology, history and society*. Cork: Cork University Press, 178-89.
—— 2002. *Inishmurray: an island off County Sligo*. Bray: Wordwell.
—— 2004:0706. Rahally, Co. Galway. www.excavations.ie.
O'Sullivan, J., Hannan, M., & Tierney, J. 1998. Excavation of Lisnagun ringfort, Darrava, Co. Cork, 1987-89. *Journal of the Cork Historical and Archaeological Society*, 103, 31-66.
O'Sullivan, J. & Ó Carragáin, T. 2008. *Inishmurray: Monks and pilgrims in an Atlantic landscape. Archaeological survey and excavations*. Cork: Collins Press.
O'Sullivan, J. & Stanley, M. (eds.) 2005. *Recent archaeological discoveries on National Road Schemes, 2004: proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell.
—— (eds.) 2006. *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell.
—— (eds.) 2007. *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*. Bray: Wordwell.
O'Sullivan, M. 1990:0100. Ballyvanran, Co. Tipperary. www.excavations.ie.
—— 1991:0115. Ballyvanran, Co. Tipperary. www.excavations.ie.
O'Sullivan, M. & Downey, L. 2007. Ringforts. *Archaeology Ireland*, 21(3), 32-35.

Opie, H. 1993:0221. Portnashangan, Co. Westmeath. www.excavations.ie.
—— 1995:0244. Ballysadare, Co. Sligo. www.excavations.ie.
—— 1995:0246. Carrowgobbadagh, Co. Sligo. www.excavations.ie.
—— 1996:0338. Ballysadare, Co. Sligo. www.excavations.ie.
—— 2000:0458. Ardree, Co. Kildare. www.excavations.ie.
—— 2001:0597. Ardree (Ardreigh), Co. Kildare. www.excavations.ie.
—— 2001:0344. Coldwinter, Co. Dublin. www.excavations.ie.

Papazian, C. 1985. Tobin Street, Cork, *Medieval Archaeology*, 29, 213.
Parkes, H. M. & Mitchell F. J. G. 2000. Vegetation history at Clonmacnoise, Co. Offaly. Biology and Environment. *Proceedings of the Royal Irish Academy*, 100B, 35-40.
Patterson, N. T. 1994. *Cattle-lords and clansmen: the social structure of early Ireland* (2nd Edition). New York: University of Notre Dame Press.
Petrie, G. 1845. *The ecclesiastical Architecture of Ireland, anterior to the Anglo-Norman invasion; comprising an essay on the origin and uses of the round towers of Ireland*. Dublin: Hodges and Smith.
Photos-Jones, E. 2008a. Analysis of metallurgical waste from Johnstown 1 (Appendix 6- Part I), in N. Carlin *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Dublin: National Roads Authority, CD Excavation Reports.
—— 2008b. The technical examination of metallurgical waste for Killickaweeny (Appendix 2), in N.

Carlin *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Dublin: National Roads Authority, CD Excavation Reports.
—— 2008c. Analysis of Metallurgical Waste from Hardwood 3, in N. Carlin *et al*. (eds.) 2008. *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Dublin: National Roads Authority, CD Excavation Reports.
—— 2008d. Analysis of metallurgical waste from Newcastle 2, in N. Carlin *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Dublin: National Roads Authority, CD Excavation Reports.
Picard, J-M. (ed.) 1991. *Ireland and Northern France, A.D. 600–850*. Blackrock: Four Courts Press.
Pinkerton, W. 1855. Contributions Towards a History of Irish Commerce. *Ulster Journal of Archaeology* (1st Series), 3, 177-199
Pirenne, H. 1925. *Medieval Cities: Their Origins and the Revival of Trade*. Princeton: Princeton University Press (translated F. D. Halsey).
Plummer, C. 1910. *Vitae sanctorum Hiberniae partim hactenus ineditae*. Oxford: Clarendon.
Plunkett, G. 2007. Pollen analysis and archaeology in Ireland, in E.M. Murphy and N.J. Whitehouse (eds.), *Environmental archaeology in Ireland*. Oxford: Oxbow Books, 221-40.
Plunket, G. M., Bentley, B., & Collins, B. 2005. Archaeobotanical Remains, Appendix 4, in Marshall, J. W., & Walsh, C. (eds.) *Illaunloughan Island: An early medieval monastery in County Kerry*. Bray: Wordwell.
Power, C. 1994. A demographic study of human skeletal populations from historic Munster. *Ulster Journal of Archaeology*, 57, 95-118.
Power, D. 1980-84:0045. Ballyrobert, Co. Cork. www.excavations.ie.
Power, P. 1941. Ballygarran Cill, near Waterford (note). *Journal of the Royal Society of Antiquaries of Ireland*, 71, 63-64.
Prendergast, E. M. 1946. Togher at Kellysgrove Co. Galway. *Journal of the Galway Archaeological and Historical Society*, 22(1 & 2), 15-18.
—— 1959. Ringfort with souterrain, at Gorteen, Co. Westmeath. *Ríocht na Mídhe*, 2(1), 45-48.
Proudfoot, V. B. 1953. Excavation of a Rath at Boho, Co Fermanagh. *Ulster Journal of Archaeology*, 16, 41-57.
—— 1954. Excavations at the Cathedral Hill, Downpatrick, Co Down. Preliminary report on excavations in 1953. *Ulster Journal of Archaeology*, 17, 97-102.
—— 1956. Excavations at Cathedral Hill, Downpatrick, Co. Down: 1954. *Ulster Journal of Archaeology*, 19, 57-72.
—— 1958. Further Excavations at Shaneen Park, Belfast, Ballyaghagan Townland, Co Antrim. *Ulster Journal of Archaeology*, 21, 18-38.
—— 1959. Note on a rath at Croft Road, Holywood, Co Down. *Ulster Journal of Archaeology*, 22, 102-6.
—— 1961. The economy of the Irish rath. *Medieval Archaeology*, 5, 94-122.
—— 1970. Irish raths and cashels: some notes on chronology, origins and survivals. *Ulster Journal of Archaeology*, 33, 37-48
Proudfoot, V. B. & Wilson, B. C. S. 1961-62. Further Excavations at Larrybane Promontory Fort, Co Antrim. *Ulster Journal of Archaeology*, 24-25, 91-115.
Purcell, A. 2000:0146. Castlelands, Mallow, Co. Cork. www.excavations.ie.
—— 2001:0205. Castlelands, Mallow, Co. Cork. www.excavations.ie.
—— 2003:1882. Kilgrovan, Co. Waterford. www.excavations.ie.
—— 2004:1007. Kilbane, Co. Limerick. www.excavations.ie.
—— 2004:1008. Kilbane, Co. Limerick. www.excavations.ie.

Quinn, B. 2000:0051. Ballynacragga, Co. Clare. www.excavations.ie.
—— 2000:0056. Area 18, Carrigoran, Co. Clare. www.excavations.ie.
—— 2002:0716. Cahernalee, Co. Galway. www.excavations.ie.
Quinn, D. B. 1930. An Early Iron Age Settlement at Malone, Belfast. *Proceedings of the Belfast Natural History and Philosophical Society 1930/31*, 46-49.

Radford, C. A. R. 1970. Devenish. *Ulster Journal of Archaeology*, 33, 55-62.
Raftery, B. 1969. Freestone Hill, Co. Kilkenny: an Iron Age hillfort and Bronze Age cairn; excavation by Gerhard Bersu 1948-9. *Proceedings of the Royal Irish Academy*, 68C, 1-108.
—— 1994. *Pagan Celtic Ireland: the enigma of the Irish Iron Age*. London: Thames and Hudson.
—— (ed.) 1996. *Trackway excavations in the Mountdillon Bogs, Co. Longford 1985-1991*. Dublin: Crannóg Publication.
Raftery, J. 1937. Knocknalappa Crannog, Co. Clare (note). *North Munster Antiquarian Journal*, 1(2), 83.
—— 1941. Long stone cists of the Early Iron Age. *Proceedings of the Royal Irish Academy*, 46C, 299-315.

—— 1942. Knocknalappa Crannóg, Co. Clare. *North Munster Antiquarian Journal*, 3(1), 53-72.
—— 1944. The Turoe Stone and the Rath of Feerwore. *Journal of the Royal Society of Antiquaries of Ireland*, 74, 23-53.
Raftery, J. & Moore, A. 1944. Two prehistoric burials in Co. Mayo (note). *Journal of the Royal Society of Antiquaries of Ireland*, 74, 171-76.
Rathbone, S. 2007:1302. Donacarney Great, Co. Meath. www.excavations.ie.
Reed, S. 2000:1018. Mullingar, Co. Westmeath. www.excavations.ie.
Rees-Jones, S. G. 1971. A souterrain at Sheepland Mor, near Chapeltown, Co Down. *Ulster Journal of Archaeology*, 34, 77-78.
Reeves, W. 1859. Memoir of the Church of St Duilech. *Proceedings of the Royal Irish Academy*, 7C, 141-53.
Reeves-Smyth, T. 1999. *Irish gardens and gardening before Cromwell*. Cork: Barryscourt Trust in association with Cork County Council and Gandon Editions.
Reilly, A. 1998:0113. Old Bridge Court, Ballyvalley, Banbridge, Co. Down. www.excavations.ie.
—— 1998:0099. Magheramenagh, Co. Derry. www.excavations.ie.
—— 1999:0130. Magheramenagh, Co. Derry. www.excavations.ie.
Reilly, F. 1998:0033. Site 20, Carrigoran, Co. Clare. www.excavations.ie.
—— 1999:0047. Carrigoran, Area EX1, Co. Clare. www.excavations.ie.
—— 2000:0055, Carrigoran, Area EX1, Co. Clare. www.excavations.ie.
Reynolds, J.F. 1972:0030. Poulacapple, Co. Antrim [*recte* Co. Tipperary]. www.excavations.ie.
Richey, A. G. 1879. *Ancients Laws of Ireland V.4*. London: Longmans, Green, Reader and Dyer.
Rigoir, J. 1968. Les sigillíes paléochretiénnes grises et oranges, *Gallia*, 26, 177-244.
Riley, J. A. 1981. The pottery from the cisterns, in J. H. Humphrey (ed.) *Excavations at Carthage conducted by the University of Michigan VI*. Ann Arbor, 85-124.
Ritchie, A. 1993. *Viking Scotland*. London: Batsford.
Robinson, M. E. & Coombs, D. G. 1998:0561. Kiltullagh Hill, Kiltullagh, Co. Roscommon. www.excavations.ie.
Rooney, F. 1998:0573. Killaspugbrone, Co. Sligo. www.excavations.ie.
Round, J.H. 1909. *Feudal England*. London.
Rourke, G. D. & Marshal, J. W. 2005. The Drystone Oratories of Western Kerry, in J. W. Marshall & F. Walsh (eds.) *Illaunloughan: an Early Medieval monastery in County Kerry*. Bray: Wordwell, 103-124.
Royal Commission of the Ancient and Historical Monuments of Scotland. 1982. *Argyll: An inventory of the monuments, Voume 4, Iona*, Edinburgh: HMSO.
Roycroft, N. 2005. Around the bay on the Great North Road: The archaeology of the M1 Dundalk Western Bypass, in J. O'Sullivan & M. Stanley (eds.) *Recent archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell, 65-82.
Russell, I. 2001:1052. Shallon 1, Co. Meath. www.excavations.ie.
—— 2003:1915. Newtown/Woodstown/Gracedieu East/Gracedieu West, Co. Waterford. www.excavations.ie.
—— 2005:0127. Mullagh, Co. Cavan. www.excavations.ie.
Russell, I., Mossop, M. & Corcoran, E. 2002. Claristown 2: a cemetery and later cairn; excavations for the Drogheda Bypas- M1 motorway. *Ríocht na Mídhe*, 13, 23-31.
Ryan, F. 1993:0173, Church Island, Co. Mayo. www.excavations.ie.
—— 1999:0875. Ferns Sewerage Scheme, Co. Wexford. www.excavations.ie.
—— 2001:1171. Magheraboy, Co. Sligo. www.excavations.ie.
Ryan, M. 1973. Native pottery in Early Historic Ireland. *Proceedings of the Royal Irish Academy*, 73C, 619-45.
—— 1988. Fine metalworking and early Irish monasteries: the archaeological evidence, in J. Bradley (ed.) *Settlement and Society in Medieval Ireland*. Kilkenny: Boethius, 33-48.
—— 2000. Furrows and browse: some archaeological thoughts on agriculture and population in early medieval Ireland, in A. P. Smyth (ed.) *Seanchas: Studies in early and medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*. Dublin: Four Courts Press, 30-36.
Rynne, C. 2000. Waterpower in medieval Ireland, in P. Squatriti (ed.) *Working with water in medieval Europe*. Leiden: Brill Academic Publishers, 1-50.
—— 2007. Recent archaeological research on early medieval water-mills in Ireland. *International Molinology* ,74, 32-34.
—— 2009. Water-Power as a Factor of Industrial Location in Early M-edieval Ireland: The Environment of the Early Irish Water Mill. *Industrial Archaeology Review*, 31, 85-95.
Rynne, C., Rourke, G. D., & Marshall, J. W. 1996. An early medieval monastic watermill on High Island. *Archaeology Ireland*, 37, 24-27.
Rynne, E. 1956. Excavation of a ring-fort at Ardcloon, Co. Mayo. *Journal of the Royal Society of*

Antiquaries of Ireland, 86, 203-14.
—— 1964. Some destroyed sites at Shannon Airport, County Clare. *Proceedings of the Royal Irish Academy*, 63C, 245-77.
—— 1965. Toghers in Littleton Bog, Co. Tipperary. *North Munster Antiquarian Journal*, 9(4), 138-44.
—— 1967. Excavation of a church-site at Clondalkin, Co. Dublin. *Journal of the Royal Society of Antiquaries of Ireland*, 97, 29-37.
—— 1968. Excavation of a House-site in Fanore Sandhills, Co. Clare. *North Munster Antiquarian Journal*, 11, 7-12.
—— 1971:0018. Grannagh, Co. Galway. www.excavations.ie.
—— 1974. Excavations at 'Madden's Hill', Kiltale, Co. Meath. *Proceedings of the Royal Irish Academy*, 74C, 267-75.

Sampson, G. V. 1802. *Statistical Survey of the County of Londonderry*. Dublin: Graisberry & Campbell.
Scally, G. 1997:0210. High Island, Co. Galway. www.excavations.ie.
—— 1998:0256. High Island, Co. Galway. www.excavations.ie.
—— 1999:0305. High Island, Co. Galway. www.excavations.ie.
—— 1999. The early monastery of High Island. *Archaeology Ireland*, 13(1), 24-28.
—— 2000:0391. High Island, Co. Galway. www.excavations.ie.
—— 2002. The earthen banks and walled defences of Dublin's north-east corner, in S. Duffy (ed.) *Medieval Dublin I: proceedings of the Friends of Medieval Dublin Symposium 2001*. Dublin: Four Courts Press, 11-33.
Schot, R. 2006. Uisneach Midi a medón Érenn: a prehistoric 'cult' centre and 'royal site' in Co. Westmeath. *Journal of Irish Archaeology* 15, 39-71.
Scott, A.B. & Martin, F.X. 1978. *Expugnatio Hibernica: the Conquest of Ireland*. Dublin: Royal Irish Academy.
Scott, B. G. 1970:0034. Urney td., Co. Tyrone. www.excavations.ie.
—— 1971:0034. Urney, Co. Tyrone. www.excavations.ie.
—— 1977. Metallographic study of some early iron tools and weapons from Ireland. *Proceedings of the Royal Irish Academy*, 77C, 301-17.
—— 1978. Iron 'slave-collars' from Lagore crannog, Co. Meath. *Proceedings of the Royal Irish Academy*, 78C, 213-30.
—— (ed.) 1981. *Studies on early Ireland: essays in honour of M.V. Duignan*. Dublin.
—— 1983. An early Irish law tract on the Blacksmith's forge. *Journal of Irish Archaeology*, 1, 59-62.
—— 1984. The status of the blacksmith in early Ireland, in B. G. Scott & H. Cleere (eds.) *The craft of the Blacksmith: Essays presented to R.F. Tylecote at the 1984 symposium of the U.I.S.P.P.* Comité pour la Siderugie Ancienne held in Belfast. Belfast, 153-56.
—— 1991. *Early Irish ironworking*. Belfast: Ulster Museum.
Scully, O. 1997. Domestic architecture: general introduction, in M.F. Hurley *et al*. (eds.), *Late Viking age and medieval Waterford: excavations 1986-1992*. Waterford: Waterford Corporation, 34-39.
—— 1998:0639. Deanery Garden, Co. Waterford. www.excavations.ie.
—— 1999:0850. Bailey's New Street, Co. Waterford. www.excavations.ie.
Scully, O. & McCutcheon, S. W. J. 1997. Peter Street, in M. F. Hurley *et al*. (eds.) *Late Viking age and medieval Waterford: Excavations 1986-1992*. Waterford: Waterford Corporation 53-136.
Seaby, W. A. 1959. Anglo-Saxon hoards and coins found in the north of Ireland. *British Numismatics Journal*, 29, 248-54.
Seaver, M. 2004. From mountain to sea: excavations at Laughanstown/Glebe. *Archaeology Ireland*, 18(1), 8-12.
—— 2005a. From mountain to sea: excavations in the townlands of Glebe and Laughanstown, County Dublin, in J. O'Sullivan & M. Stanley (eds.) *Recent Archaeological Discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*. Bray: Wordwell, 51-64.
—— 2005b. Run of the Mill? Excavation of an early medieval site at Raystown, Co. Meath. *Archaeology Ireland*, 19(4), 9-12.
—— 2006. Through the mill– excavation of an early medieval settlement at Raystown, County Meath, in J. O'Sullivan & M. Stanley (eds.) *Settlement, Industry and Ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*. Bray: Wordwell, 73-87.
—— 2010 Against the grain: Early medieval settlement and burial on the Blackhill: excavations at Raystown, Co. Meath, in C. Corlett and M. Potterton (eds.) *Death and burial in early medieval Ireland, in light of recent archaeological excavations*. Bray: Wordwell, 299-319.
Seaver, M. & O'Sullivan, A. forthcoming. Living with the dead in early medieval Ireland: some observations on burial, cemeteries and settlements, A.D. 400-1100. *Medieval Archaeology*.
Sharpe, R. 1984. Some problems concerning the organization of the church in early medieval Ireland.

Peritia, 3, 230-70.
—— 1992. Church and communities in early medieval Ireland: towards a pastoral model, in J. Blair & R. Sharpe (eds.) *Pastoral Care before the Parish*. Leicester: Leicester University Press, 81-109.
Shee-Twohig, E. 1974:0029. Sluggary, Co. Limerick. www.excavations.ie.
—— 1974:0030. Croom East, Co. Limerick. www.excavations.ie.
—— 1977. Excavation of a ringfort at Croom, Co. Limerick. *North Munster Antiquarian Journal*, 19, 27-37.
—— 1992. A cross-inscribed slab from Laheratanvally, Skibbereen, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 97, 120-23.
—— 2000. Excavation of a ringfort at Sluggary, Co. Limerick. *North Munster Antiquarian Journal*, 40, 1-27.
—— 2002. Context and Chronology of the carved stone at Clonfinlough, County Offaly. *Journal of the Royal Society of Antiquaries of Ireland*, 132, 99-113.
Sheehan, C. 2002:1934. 62–68 Main Street North, Co. Wexford. www.excavations.ie.
Sheehan, J. 1982. The Early Historic church-sites of North Clare. *North Munster Antiquarian Journal*, 24, 29-47.
—— 1987. A reassessment of the Viking burial from Eyrephort, Co. Galway *Journal of the Galway Archaeological and Historical Society*, 41, 60-72.
—— 1998. Early Viking age silver hoards from Ireland and their Scandinavian elements, in H. Clarke *et al*. (eds.) *Ireland and Scandinavia in the early Viking age*. Dublin: Four Courts Press, 166-202.
—— 1998:0268. Caherlehillan, Co. Kerry. www.excavations.ie.
—— 2009. A peacock's tale: excavations at Caherlehillan, Iveragh, Ireland, in N. Edwards (ed.) *The Archaeology of Early Medieval Celtic Churches*. Leeds: Society for Medieval Archaeology Monograph 29, 191-206.
Sheehan, J., Hansen, S. S., & Ó Corrain, D. 2001. A Viking Age maritime haven: A reassessment of the island settlement at Beginish, Co. Kerry. *Journal of Irish Archaeology*, 10, 93-119.
Sherley-Price, L 1965. *A History of the English Church and People.* Revised (1968; 1990; 2003). London: Penguin.
Sherlock, R. 2001:0130. Carrigaline Middle, Co. Cork. www.excavations.ie.
—— 2002:0246. Carrigaline Middle, Co. Cork. www.excavations.ie.
Sikora, M. 2010. The Fingal burial: archaeology and ethnicity in Viking age Dublin, in J. Sheehan and D. Ó Corraín (eds.) *The Viking Age: Ireland and the west*. Dublin: Four Courts Press, 402-417.
Simpson, D.D.A. 1987:0046. 'Lislear', Baronscourt, Co. Tyrone. www.excavations.ie.
Simpson, D. D. A., Conway, M. G. & Moore, D. 1993. The excavation of a shell midden at Minnis North, Co. Antrim. *Ulster Journal of Archaeology*, 56, 114-19.
Simpson, L. 1997:0124. Essex Street West/Lower Exchange Street, Dublin. www.excavations.ie.
—— (ed.) 1999. *Director's findings: Temple Bar west*. Dublin: Temple Bar Properties.
—— 2000. Forty years a-digging: a preliminary synthesis of archaeological investigations in medieval Dublin, in S. Duffy (ed.) *Medieval Dublin I: proceedings of the Friends of Medieval Dublin Symposium 1999*. Dublin: Four Courts Press, 11-68.
—— 2003. Ninth-century Viking burials in Dublin. *Archaeology Ireland*, 17(3), 5.
—— 2004. Excavations on the southern side of the medieval town at Ship Street Little, Dublin, in S. Duffy (ed.) *Medieval Dublin V: proceedings of the Friends of Medieval Dublin Symposium 2003*. Dublin: Four Courts Press, 9-51.
—— 2005a. Viking warrior burials in Dublin: is this the longphort?, in S. Duffy (ed.) *Medieval Dublin VI : proceedings of the Friends of Medieval Dublin Symposium 2004*. Dublin: Four Courts Press, 11-62.
—— 2005b. The ecclesiastical enclosure at Dunshaughlin, Co, Meath; some dating evidence, in T. Condit and C. Corlett (eds.) *Above and beyond: essays in memory of Leo Swan*. Bray: Wordwell, 227-38.
—— 2006. *Dublin City: walls and defences = Chathair Bhaile Átha Cliath: múrtha agus cóir chosanta*. Bray: Wordwell Ltd on behalf of Dublin City Council.
—— 2010. The first phase of Archaeological activity in Ireland: archaeological evidence from Dublin, in J. Sheehan and D. Ó Corraín (eds.) *The Viking Age: Ireland and the west*. Dublin: Four Courts Press, 418-429.
Soderberg, J. 2004. Wild cattle: red deer in the religious texts, iconography, and archaeology of early medieval Ireland. *International Journal of Historical Archaeology*, 8(3), 167-83.
Spence, R. 1972. Examination of slag samples from Mullaghbane. *Ulster Journal of Archaeology*, 35, 43.
Spearman, R. M. & Higgitt, J. (eds.) 1993. *Proceedings of the second International Conference on Insular Art held in the National Museums of Scotland in Edinburgh, 3-6 January 1991*. Stroud.
Stafford, E. 2005:0067. Baunogephlure, Co. Carlow. www.excavations.ie.
Stalley, R. A. 2001. Sex, symbol and myth: some observations on the Irish round Towers, in C. Hourihane (ed.) *Irish art from the early Christian to the late Gothic period and its European context*. Princeton: Princeton University Press, 27-47.

—— 2006. Design and Function: the construction and decoration of Cormac's Chapel at Cashel, in in D. Bracken and D. Ó Riain-Raedel (eds.) *Ireland and Europe in the Twelfth Century: Reform and Renewal*. Dublin: Four Courts,162-75.
Stanley, M., Danaher, E., & Eogan, J. 2010. *Creative Minds: Archaeology and the National Roads Authority Monograph No. 7*. Dublin: National Roads Authority
Start, L. E. 1951-1. The Textiles from Lagore Crannog. *Proceedings of the Royal Irish Academy,* 53C, 201-24.
Stelfox, A. W. 1930-31. Kilgreany Cave, Co. Waterford. *Irish Naturalists Journal*, 3, 118-23.
—— 1938. The Animal Bones, in H. O'N. Hencken (ed.) *Cahercommaun: a stone fort in County Clare*, 75-76.
—— 1942. The Animal Bones from Ballinderry 2, *Proceedings of the Royal Irish Academy*, 47C, 67-74.
Stenberger, M. 1966. A ringfort at Raheennamadra, Knocklong, Co. Limerick. *Proceedings of the Royal Irish Academy*, 65C, 37-54.
Stephenson, A. 2002:0430. Mountaintop–Illistrin, Co. Donegal. www.excavations.ie.
Stevens, P. 1999:0828. 26 Killeenyarda, Holycross, Co. Tipperary. www.excavations.ie.
—— 2000:0572. Ballinacurra (Hart)/Ballinacurra (Weston)/Rossbrien South/Rathbane, Co. Limerick. www.excavations.ie.
—— 2004:1768. Newtown 1, Co. Westmeath. www.excavations.ie.
—— 2005:1529. Clonfad 3, Clonfad, Co. Westmeath. www.excavations.ie.
—— 2006. A monastic enclosure site at Clonfad, Co. Westmeath. *Archaeology Ireland*, 20(2), 8-11.
—— 2007. Clonfad 3: a unique glimpse into early monastic life in county Westmeath. *Seanda*, 2, 42-43.
—— 2010. For whom the bell tolls: the monastic site at Clonfad 3, Co. Westmeath, in M. Stanley *et al*. (eds.) *Creative Minds: Archaeology and the National Roads Authority Monograph No. 7*. Dublin: National Roads Authority, 85-94
Stokes, W. 1862. *Three Irish glossaries: Cormac's glossary Codex A (from a manuscript in the Library of the Royal Irish Academy), O'Davoren's glossary (from a manuscript in the Library of the British Museum), and a Glossary to the Calendar of Oingus the Culdee (from a manuscript in the Library of Trinity College, Dublin)*. London: Williams & Norgate.
Stout, G. 1982a. *Preliminary report of the excavations at Ballymount Great, Co. Dublin 1982*. Dublin: OPW.
—— 1982b. The archaeology of Ballymount Great, Co. Dublin, in C. Manning (ed.) *Dublin and beyond the Pale: Studies in honour of Patrick Healy*, Bray: Wordwell, 145-54.
—— 1984. *Archaeological Survey of the Barony of Ikerrin*. Roscrea Heritage Society.
Stout, G. & Stout, M. 1992. Patterns in the Past: county Dublin 5,000 B.C.-1,000 A.D., in F. H. A. Aalen & K. Whelan (eds.) *Dublin City and County: From Prehistory to Present*. Dublin: Geography Publications, 5-14.
—— 2008. *Excavations of an early medieval secular cemetery at Knowth Site M, County Meath*. Bray: Wordwell.
Stout, M. 1991. Ringforts in the south-west midlands of Ireland. *Proceedings of the Royal Irish Academy*, 91C, 201-43.
—— 1996. Emyr Estyan Evans and Northern Ireland: the Archaeology and Geography of a New State, in J. Atkinson, I. Banks and J. O'Sullivan (eds.) *Nationalism and Archaeology*. Glasgow: Cruithne Press**,** 111-27.
—— 1997. *The Irish ringfort*. Dublin: Four Courts Press (in association with the Group for the Study of Irish Historic Settlement).
—— 2000. Early Christian Ireland: settlement and environment, in T. B. Barry (ed.) *A history of settlement in Ireland*. London: Routledge, 81-109.
Sullivan, E. E. 1997:0424. Athlumney House, Kilcarn, Co. Meath. www.excavations.ie.
Swan, D. L. 1973:0036. Kilpatrick (td. Corbetstown), Co. Westmeath. www.excavations.ie.
—— 1976. Excavations at Kilpatrick Churchyard, Killucan, Co. Westmeath, July/August 1973 and 1975. *Ríocht na Mídhe*, 6(2), 89-96.
—— 1980-84:0199. Corbetstown (Kilpatrick), Co. Westmeath. www.excavations.ie.
—— 1983. Enclosed ecclesiastical sites and their relevance to settlement patterns of the first millenium A.D., in T. Reeves-Smyth & F. Hammond (eds.) *Landscape Archaeology in Ireland*. Oxford: Tempus Reparatum, 269-80.
—— 1985. Monastic proto-towns in early medieval Ireland: the evidence of Aerial Photography, plan analysis and survey, in H. Clarke & A. Simms (eds.) *The comparative history of urban origins in non-Roman Europe: Ireland, Wales, Denmark, Germany, Poland and Russia from the ninth to the thirteenth century*. Oxford: Tempus Reparatum, 77-102.
—— 1994-95. Excavations at Kilpatrick, Killucan, Co. Westmeath, evidence for bone, antler and iron working. *Ríocht na Mídhe*, 9(1), 1-21.
Sweetman, D. P. 1983a. Souterrain and burials at Boolies Little, Co. Meath. *Ríocht na Mídhe*, 7(2), 42-57.
—— 1983b. Reconstruction and partial excavation of an Iron Age burial mound at Ninch, Co. Meath.

Ríocht na Mídhe, 7(2), 58-68.
Swift, C. 1997. *Ogam stones and the earliest Irish Christians*. Maynooth: St Patrick's College, Department of Old and Middle Irish.
—— 1998. Forts and fields: a study of 'monastic towns' in seventh and eight century Ireland. *Journal of Irish Archaeology*, 9, 105-25.
—— 2003. Sculptors and their Customers: A study of Clonmacnoise Grave-Slabs, in H. King (ed.) *Clonmacnoise Studies 2: Seminar Papers 1998*. Dublin: Stationery Office, 105-23.
Swift, C. and Byrne, F. J. 2008. The early history of Knowth, in Byrne, F. J. *et al*. (eds.) Excavations at Knowth 4: historic Knowth and its hinterland. Dublin: Royal Irish Academy, 5-132.

Tarbett. C. & Crone, J. 1986:0014. Cloghlucas South, Co. Cork. www.excavations.ie.
Taylor, K. 2003:0090. Site AR25, Carrowdotia, Co. Clare. www.excavations.ie.
—— 2003:0089. M27, Carrowdotia, Co. Clare. www.excavations.ie.
—— 2004:0141. Site AR128, Cahircalla More, Co. Clare. www.excavations.ie.
—— 2004:0767. Site AR05, Kilmaniheen West, Co. Kerry. www.excavations.ie.
—— 2007. Prehistoric features and an early medieval enclosure at Coonagh West, Co. Limerick, in J. O'Sullivan & M. Stanley (eds.) *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*. Bray: Wordwell, 73-79.
Taylor, K & Ruttle, E. 2005:0975. Coonagh West, Co. Limerick. www.excavations.ie.
Taylor, M. V. 1912. *Liberi Luciani de Laude Cestrie*. Edinburgh & London: Lancashire and Cheshire Record Society.
Tempest, H. G. 1933. Three souterrains. Dundalk Demesne, Mullaboy & Irish Grange. *Journal of the Louth Archaeological and Historical Society*, 8(1), 95-97.
Thomas, C. 1954. Excavations of a Dark Age site at Gwithian, Cornwall: interim report 1953-54. *Proceedings of the West Cornwall Field Club*, 1, 59-72.
—— 1959. Imported pottery in Dark-Age western Britain. *Medieval Archaeology*, 3, 89-111.
—— 1971. *The Early Christian Archaeology of North Britain*. Glasgow: Glasgow University.
—— 1976. Imported Late-Roman Mediterranean pottery in Ireland and western Britain: chronologies and implications. *Proceedings of the Royal Irish Academy*, 76C, 245-65.
—— 1981a. *Christianity in Roman Britian to A.D. 500*. London: Batsford Academic and Educational.
—— 1981b. *A provisional list of imported pottery in post-Roman Western Britain & Ireland*. Cornwall. Redruth: Institute of Cornish Studies Special Report 7.
Tierney, J. 1998:0283. Meanus, Co. Kerry. www.excavations.ie.
—— 2004:0082. Ballinabrannagh/Killeeshal/Raheendoran. www.excavations.ie.
—— 2008. Early medieval iron- and copper-smelting: Area 25, Cooltubrid East TD, in P. Johnston *et al*. (eds.) *Near the Bend in the River: The archaeology of the N25 Klmacthomas realignment: National Roads Authority Monography 3*, Bray: Wordwell, 107-9.
Tierney, J. & Elliot, R. 2008. Early medieval iron smithing and corn drying kiln: Area 16, Ahanagloch TD, in P. Johnston *et al*. (eds.) *Near the Bend in the River: The archaeology of the N25 Klmacthomas realignment: National Roads Authority Monography 3*, Bray: Wordwell, 101-6.
Tierney, M. 1998. Theory and Politics in early medieval Irish archaeology, in M. A. Monk and J. Sheehan (eds.) *Early medieval Munster: archaeology, history, and society*. Cork: Cork University Press, 190-99.
—— 2001:0519. Keeloguesbeg, Co. Galway. www.excavations.ie.
Tobin, R. 2001:0631. Corbally, Co. Kildare. www.excavations.ie.
—— 2002:0899. Corbally, Co. Kildare. www.excavations.ie.
—— 2002:1534. Tobertynan (BGE 1a/35/2), Co. Meath. www.excavations.ie.
—— 2003. Houses, Enclosures and Kilns, Excavations at Corbally, Co. Kildare. *Archaeology Ireland*, 17(3), 32-37.
Trump, D. 1958. Notes on Excavations in the British Isles, 1957. *Medieval Archaeology*, 24, 211-20.
Turrell, S. 2007:1436. Ballykean Bog, Ballintemple, Co. Offaly. www.excavations.ie.
Turrell, S. & Whitaker, J. 2007. Unique early medieval 'bog crannog'. *Archaeology Ireland*, 21(3), 4.
Twohig, D. C. 1975. Excavation of a ringfort at Coolowen, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 80, 74-83.
—— 1975:0010. Cork City, South Main Street, Co. Cork. www.excavations. ie.
—— 1990. Excavation of three ring-forts at Lisduggan North, County Cork. *Proceedings of the Royal Irish Academy*, 90C, 1-33.
Twohig, D. C. & O'Kelly, M. J. 1972. Excavation of two ring-forts at Lisduggan North, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 77, 105-106.

Valante, M. 1998. Reassessing the Irish monastic town. *Irish Historical Studies*, 31(121), 1-18.
—— 2008. *The Vikings in Ireland: Settlement, trade and urbanization*. Dublin: Four Courts Press.

Vroom, J. 2003. *After Antiquity: Ceramics and society in the Aegean from the 7th to the 20th century: A case study from Boeotia, Central Greece*. Leiden.

Waddell, J. 1971. A ringfort at Ballybrit, Co. Galway. *Journal of the Galway Archaeological and Historical Society*, 32, 73-79.
—— 1998. The Prehistoric Archaeology of Ireland. Galway: Galway University Press.
—— 2005*. Foundation myths: the beginnings of Irish archaeology*. Bray: Wordwell.
Waddell, J. & Clyne, M. 1995. M. V. Duignan's excavations at Kiltiernan, Co. Galway, 1950-1953. *Journal of the Galway Archaeological and Historical Society*, 47, 149-204.
Wainwright, F. T. *The Souterrains of Southern Pictland*. London: Routledge and Keegan.
Wakeman, W. F. 1870-71a. Remarks upon three hitherto unnoticed crannogs in Drumgay Lake, near Enniskillen. *Journal of the Royal Society of Antiquaries of Ireland (Journal of the Historical and Archaeological Association of Ireland*, Vol. 1- Fourth Series, 1870-71), 11, 232-35.
—— 1870-71b. Further remarks upon the hitherto unnoticed crannogs in Drumgay Lake, near Enniskillen. *Journal of the Royal Society of Antiquaries of Ireland (Journal of the Historical and Archaeological Association of Ireland*, Vol. 1- Fourth Series, 1870-71), 11, 305-14.
—— 1891: On the Crannog and Antiquities of Lisnacroghera, near Broughshane, Co. Antrim. (Fourth Notice). *Journal of the Royal Society of Antiquaries of Ireland* Fourth Series, 1 (8), 673-75.
Wallace, A. 2000:0328. Maynetown, Co. Dublin. www.excavations.ie.
—— 2004:1324. Ratoath, Co. Meath. www.excavations.ie.
—— 2010. Excavation of an early medieval cemetery at Ratoath, Co. Meath, in C. Corlett and M. Potterton (eds.) *Death and burial in early medieval Ireland, in light of recent archaeological excavations*. Bray: Wordwell. 335-59.
Wallace, A. & Anguilano, L. 2010. Iron-smelting and smithing: new evidence emerging on Irish road schemes, in M. Stanley *et al*. (eds.) *Creative Minds: Archaeology and the National Roads Authority Monograph No. 7*. Dublin: National Roads Authority, 69-84.
Wallace, P. F. 1977-79:0037. Dublin City. www.excavations.ie.
—— 1982a. Carpentry in Ireland A.D. 900-1300- The Wood Quay evidence, in S. McGrail (ed.) *Woodworking techniques before A.D. 1500. Papers presented to a symposium at Greenwich in September, 1980 (BAR) Vol. 129*. Greenwich: Greenwich Museum, 263-99.
—— 1982b. Irish Early Christian 'wooden' oratories—a suggestion. *North Munster Antiquarian Journal*, 24, 19-28.
—— 1985a. The archaeology of Viking Dublin, in H. Clarke & A. Simms (eds.) The comparative history of urban origins in non-Roman Europe: Ireland, Wales, Denmark, Germany, Poland and Russia from the ninth to the thirteenth century. Oxford: Tempus Reparatum, 103-45.
—— 1985b. A reappraisal of the archaeological significance of Woodquay, in J. Bradley (ed.) *Viking Dublin Exposed: The Wood Quay Saga*. Dublin: O'Brien Press, 112-33.
—— 1987a. The economy and commerce of Viking Age Dublin, in K. Duwel *et al*. (eds.) *Untersuchungen zu handel und verkehr der vor- und fruhgeschichtlichen zeit in mittel- und Nordeuropa Vol. 4*. Gottingen, 200-45.
—— 1987b. Wood Quay Now: The Dublin Excavations Project. *Archaeology Ireland*, 1(1), 26-29.
—— (ed.) 1988. *Miscellanea 1*. Dublin: Royal Irish Academy.
—— 1992a. *The Viking age buildings of Dublin*. Dublin: Royal Irish Academy for the National Museum of Ireland and the Royal Irish Academy.
—— 1992b. The archaeological identity of the Hiberno-Norse town. *Journal of the Royal Society of Antiquaries of Ireland*, 122, 35-66.
—— 2001. Ireland's Viking Towns, in A. Larsen (ed.) *The Vikings in Ireland*. Roskilde: The Viking Ship Museum, 37-50.
—— 2005. The Archaeology of Ireland's Viking-Age Towns, in D. Ó Cróinín (ed.) *A new history of Ireland. Vol. 1 Prehistoric and early Ireland*. Oxford: Oxford University Press, 814-41.
—— 2008. Archaeological evidence for the different expressions of Scandinavian settlement in Ireland 840-1100, in S. Brink (ed.) *The Viking World*. London: Routledge, 434-438.
Wallace, P. F. & Ó Floinn, R. (eds.) 2002. *Treasures of the National Museum of Ireland: Irish Antiquities*. Dublin: Gill & Macmillan in association with The Boyne Valley Honey Company.
Walsh, C. 1995:0132. Bray, Valentia Island, Co. Kerry. www.excavations.ie.
—— 1997:0230. Bray, Valentia Island, Co. Kerry. www.excavations.ie.
—— 1997:0187. St Maelruan's, Tallaght, Co. Dublin. www.excavations.ie.
—— 1997a. *Archaeological excavations at Patrick, Nicholas and Winetavern Streets, Dublin*. Dingle: Brandon.
—— 1997b. Sunken buildings, in M.F. Hurley *et al*. (eds.) *Late viking age and medieval Waterford: excavations 1986-1992*. Waterford: Waterford Corporation, 45-52.
—— 2001. Dublin's southern town defences, tenth to fourteenth centuries: the evidence from Ross

Road, in S. Duffy (ed.) *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000*. Dublin: Four Courts Press, 88-127.
—— 2002:0492. The Island/Martin's Row, Chapelizod, Co. Dublin. www.excavations.ie.
—— 2009. An early medieval roadway at Chancery Lane: from Duibhlinn to Áth Cliath?, in S. Duffy (ed.) *Medieval Dublin IX: proceedings of the Friends of Medieval Dublin Symposium 2007*. Dublin: Four Courts Press, 9-37.
Walsh, C. & Hayden, A. 2001:0496. Clonfert Cathedral, Clonfert, Co. Galway. www.excavations.ie.
Walsh, F. 2002:1348. Haggardstown, Co. Louth. www.excavations.ie.
—— 2002:0924. Killickaweeny, Co. Kildare. www.excavations.ie.
—— 2003:1485. Cloughvalley Upper 1, Co. Monaghan. www.excavations.ie.
—— 2008 (with contributions from Neil Carlin). Killickaweeny 1: high-class early medieval living, in N. Carlin *et al*. (eds.) *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4*. Bray: Wordwell, 27-54.
Walsh, F. & Harrison, J. 2003. Early medieval enclosure at Killickaweeny, Co. Kildare. *Archaeology Ireland*, 17(1), 33-36.
Walsh, G. 1992:0146. 'Lislackagh', Lislackagh, Co. Mayo. www.excavations.ie.
—— 1994. Preliminary report on the archaeological excavations on the summit of Croagh Patrick. *Cathair Na Mart*, 14, 1-10.
—— 1994:0186. Glaspatrick, Croagh Patrick, Co. Mayo. www.excavations.ie.
—— 1995. Iron Age settlement in Co. Mayo. *Archaeology Ireland*, 9(1), 7-8.
—— 1995:0224. 'Croagh Patrick', Glaspatrick/Teevenacroagh, Co. Mayo. www.excavations.ie.
Walsh, M. 1964. A souterrain at Annagloor, Co. Cork. *Journal of the Cork Historical and Archaeological Society*, 69, 60-72.
Warner, G. (ed.) 1926. *The Libelle of Englyshe Polycye*. Oxford: Clarendon Press.
Warner, R. B. 1971:0032, Clogher Demesne, Co. Tyrone. www.excavations.ie.
—— 1972:0031. Clogher Demesne, Co. Tyrone. www.excavations.ie.
—— 1973. The Excavations at Clogher and their context. *Clogher Record*, 8(1), 5-12.
—— 1973:0033, Clogher Demesne, Co. Tyrone. www.excavations.ie.
—— 1973:0010. Ballymacpeake Upper, Co. Derry. www.excavations.ie.
—— 1974:0037. Clogher Demesne, Co. Tyrone. www.excavations.ie.
—— 1975:0035. Clogher Demesne, Co. Tyrone. www.excavations.ie.
—— 1977-79:0071. Clogher Demesne, Co. Tyrone. www.excavations.ie.
—— 1979. The Clogher Yellow Layer. *Medieval Ceramics*, 3, 37-40.
—— 1982. Irish Souterrains: Later Iron Age Refuges. *Archaeologia Atlantica* , 3, 81-99.
—— 1986. Comments on 'Ulster and Oriel Souterrains'. *Ulster Journal of Archaeology,* 49, 111-12.
—— 1989. Clogher, Co. Tyrone, in S. Youngs (ed.) *The Work of Angels, Masterpieces of Celtic metalwork, 6th to 9th centuries A.D*. London: British Museum Publications, 186-87.
—— 1994. On Crannogs and Kings (part 1). *Ulster Journal of Archaeology*, 57, 61-69.
—— 1998. Downpatrick, Armagh & Clogher. *Lecale Miscellany,* 16, 21-27.
—— 2000. Clogher: an archaeological window on early Medieval Tyrone and Mid Ulster, in C. Dillon *et al*. (eds.) *Tyrone: History and Society*. Dublin: Geography Publications, 39-54.
Warner, R.B. & Delaney, T. 1970:0014. Gortbrib td., Co. Down. www.excavations.ie.
Waterman, D. M. 1951. Excavations at Dundrum Castle. *Ulster Journal of Archaeology*, 14, 15-29.
—— 1955. Excavations at Seafin Castle and Ballyroney Motte and Bailey. *Ulster Journal of Archaeology,* 18, 83-104.
—— 1956a. The excavation of a house and Souterrain at White Fort, Drumaroad, Co. Down. *Ulster Journal of Archaeology*, 19, 73-86.
—— 1956b. The excavation of a house and Souterrain at Craig Hill, Co. Antrim. *Ulster Journal of Archaeology*, 19, 87-91.
—— 1958a. Note on the discovery of a Rath in Spittle Ballee, Townland, Co Down. *Ulster Journal of Archaeology*, 21, 62-63.
—— 1958b. Excavations at Ballyfounder Rath, Co Down. *Ulster Journal of Archaeology*, 21, 39-61.
—— 1958c. A note on Dundrum Castle, Co. Down. *Ulster Journal of Archaeology*, 21, 63-66.
—— 1959a. White Island: Note on a Recent Excavation. *Ulster Journal of Archaeology*, 22, 65-66.
—— 1959b. Piper's Fort, Farranfad, Co Down. *Ulster Journal of Archaeology*, 22, 83-87.
—— 1959c. Excavations at Lismahon, Co. Down. *Medieval Archaeology*, 3, 139-76.
—— 1960. An early Christian mortuary house at Saul, Co Down, with notes on similar monuments in Ulster. *Ulster Journal of Archaeology*, 23, 82-88.
—— 1963a. A Neolithic and Dark Age site at Langford Lodge, Co. Antrim. *Ulster Journal of Archaeology,* 26, 43-54.
—— 1963b. Excavations at Duneight, co. Down. *Ulster Journal of Archaeology*, 26, 55-78.
—— 1967a. A pair of raths at Glenkeen, Co Derry *Ulster Journal of Archaeology*, 30, 49-52.
—— 1967b. Early Christian churches and cemetery at Derry, Co Down. *Ulster Journal of Archaeology*, 39, 53-75.

—— 1968. Note on a destroyed rath and souterrain at Killyglen, Co Antrim. *Ulster Journal of Archaeology*, 31, 67-70.
—— 1971a. A marshland habitation site near Larne, Co Antrim. *Ulster Journal of Archaeology*, 34, 65-76.
—— 1971b. Romanesque stone-carving from Killyleagh, Co Down. *Ulster Journal of Archaeology*, 34, 110.
—— 1972. A group of raths at Ballypalady, County Antrim. *Ulster Journal of Archaeology*, 35, 29-36.
—— 1973. A second round tower at Devenish, Co Fermanagh. *Ulster Journal of Archaeology*, 36, 100-2.
Waterman, D. M. & Collins, A. E. P. 1952. The Excavations of Two Raths at Ballywillwill, Co Down. *Ulster Journal of Archaeology*, 15, 71-83.
Westropp, T. J. 1901. The Ancient Forts of Ireland: Being a Contribution Towards our Knowledge of their Types, Affinities and Structural Featues; *Transactions of the Royal Irish Academy*, 31, 579-730.
—— 1902. The ancient forts of Ireland: Being a contribution towards our knowledge of their types, affinities and structural features. *Transactions of the Royal Irish Academy* 31(14), 579-730.
—— 1919. Appendix 1 - Notes on several forts in Dunkellin and other parts of southern Co.Galway. *Journal of the Royal Society of Antiquaries of Ireland*. 49 (Series 6(9)), 167-186.
Whitaker, J. 1997:0558. Sharragh, Co. Tipperary. www.excavations.ie.
—— 2000:0808. Killaun Bog, Clonbeale More, Co. Offaly. www.excavations.ie.
—— 2004:0798. Barnaran Bog, Barnaran/Lullybeg, Co. Kildare. www.excavations.ie.
—— 2004:0850. Lullymore East Bog, Lullybeg/Lullymore, Co. Kildare. www.excavations.ie.
—— 2006:1012. Baunmore Bog, Derryfadda/Inchirourke, Co. Kilkenny. www.excavations.ie.
—— 2006:1805. Killeen Bog, Co. Tipperary. www.excavations.ie.
—— 2006:1848. Lanespark, Ballybeg and Derryvella Bogs, Co. Tipperary. www.excavations.ie.
—— 2009. *Peatland excavations 2001-2002: the Mountdillon group of bogs, Co. Longford*. ADS Monograph Series No. 3. Bray: Wordwell.
Wiggins, K. 1991. Strange Changes at King John's Castle. *Archaeology Ireland*, 5(3), 13-15.
—— 2000a. *Anatomy of a Siege: King John's Castle, Limerick, 1642*. Bray: Wordwell.
—— 2000b. A rescue excavation on Rathlin Island, County Antrim. *Ulster Journal of Archaeology*, 59, 47-70.
—— 2004:1486. Abbeytown, Co. Sligo. www.excavations.ie.
—— 2004:1527. Kilboglashy, Co. Sligo. www.excavations.ie.
—— 2006. A tale of two cemeteries. *Seanda*, 1, 33-35.
—— 2006:1172. Killeany, Co. Laois. www.excavations.ie.
Wilde, W. R. 1861. *Catalogue of the antiquities of animal materials and bronze in the museum of the Royal Irish Academy*. Dublin: Royal Irish Academy.
Wilkins, B. & Lalonde, S. 2008. An early medieval settlement/cemetery at Carrowkeel, Co. Galway. *Journal of Irish Archaeology*, 17, 57-83.
Williams, B. B. 1973:0003. Finkiltagh, Co. Antrim. www.excavations.ie.
—— 1975:0018. Kiltierney (Archdall Deerpark), Co. Fermanagh. www.excavations.ie.
—— 1978. Excavations at Lough Eskragh, County Tyrone. *Ulster Journal of Archaeology*, 41, 37-48.
—— 1983. Early Christian landscapes in County Antrim, in T. Reeves-Smyth & F. Hammond (ed.) *Landscape Archaeology in Ireland*. Oxford: Tempus Reparatum, 233-46.
—— 1984. Excavations at Ballyutoag, County Antrim. *Ulster Journal of Archaeology*, 47, 37-49.
—— 1985a. Excavation of a rath at Coolcran, County Fermanagh. *Ulster Journal of Archaeology*, 48, 69-80.
—— 1985b. Excavations at Ballyvollen townland, County Antrim. *Ulster Journal of Archaeology*, 48, 91-102.
—— 1985:0002. Ballyhill Lower, Co. Antrim. www.excavations.ie.
—— 1986. Excavations at Altanagh, Co Tyrone. *Ulster Journal of Archaeology*, 49, 33-88.
—— 1987:0014. Ryan, Co. Down. www.excavations.ie.
—— 1988a. Unexpected Wooden Souterrain: Coolcran Co. Fermanagh, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 30-32.
—— 1988b. Reading the Upland Landscape: Ballyutoag, Co. Antrim, in A. Hamlin & C. J. Lynn (eds.) *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986*. Belfast: HMSO, 36-38.
—— 1991:0011. Turnarobert, Co. Antrim. www.excavations.ie.
—— 1993:0105. Derryhowlaght East, Co. Fermanagh. www.excavations.ie.
Williams, B. B. & Yates, M. J. 1984. Excavations at Killylane, County Antrim. *Ulster Journal of Archaeology*, 47, 63-70.
Williams, H. 2007. *Death and Memory in Early Medieval Britain*. Cambridge: Cambridge University Press.
Wood-Martin, W. G. 1886. *The lake dwellings of Ireland*. Dublin: Hodges, Figgis & Co.

Wooding, J. M. 1996. *Communication and Commerce along the Western Sealanes A.D. 400-800*. Oxford: Tempus Reparatum.
Woodman, P.C. 1974:0011. Mount Sandel, Co. Derry. www.excavations.ie.
—— 1976:0015. Mount Sandel, Co. Derry. www.excavations.ie.
——1980-84:0026. Lemnalary Mt., Lough-na-Trosk, Co. Antrim. www.excavations.ie.
Wren, J. 1994:0229. Wexford Town, Co. Wexford. www.excavations.ie.
—— 1995:0287. Wexford Main Drainage, Co. Wexford. www.excavations.ie.
—— 1998:0638. 9 Arundel Square, Co. Waterford. www.excavations.ie.
—— 2000:1006. Lady Lane, Co. Waterford. www.excavations.ie.
—— 2001:1254. Lady Lane, Co. Waterford. www.excavations.ie.
—— 2002:1813. Lady Lane, Co. Waterford. www.excavations.ie.
—— 2006:0993. Ballykeoghan, Co. Kilkenny. www.excavations.ie.

Yates, M. J. 1983. Preliminary excavations at Movilla Abbey, County Down, 1980. *Ulster Journal of Archaeology*, 46, 53-66.
Young, T. P. 2007. Analysis of metallurgical residues from Aghaloo Church, Rousky, County Tyrone (Appendix 2), in N. Carver, Excavations at Aghaloo Church, Rousky, County Tyrone. *Ulster Journal of Archaeology*, 66, 94-96.
Youngs, S. 1989. Fine metalwork to *c.* A.D. 650, in S. Youngs (ed.) *The Work of Angels, Masterpieces of Celtic metalwork, 6th to 9th centuries AD*. Texas: University of Texas Press, 20-23.
—— (ed.) 1989. *The Work of Angels, Masterpieces of Celtic metalwork, 6th to 9th centuries A.D*. London: British Museum Publications.
Youngs, S., Clarke, J., & Barry, T. B. 1983. Medieval Britain in 1982. *Medieval Archaeology*, 27, 161-229.
Youngs, S., Clarke, J. & Barry, T. 1984. Medieval Britain and Ireland in 1983. *Medieval Archaeology*, 29, 214.

Zajac, S. 1999:0653. Castlegar, Co. Mayo. www.excavations.ie.
—— 2002:1382. Carrowkeel, Co. Mayo. www.excavations.ie.
—— 2003:1307. Carrowkeel, Co. Mayo. www.excavations.ie.
Zajac, S. & Scully, F. 2004. Excavations on an Enclosure at Castlegar, County Mayo. *Journal of the Galway Archaeological and Historical Society*, 56, 22-36.
Zimmer, H. 1909. Der Wienhandel Westgalliens nach Irland im 1 bis 7 Jahrhundert n Chr und sein Niederschlag in irischer Sage und Sprache. *Sitzungsberichte der Königlich Akademie der Wissenschaften*, *1909*, 430-76.

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