UCD School of Archaeology

Early Medieval Ireland: Archaeological Excavations 1930-2004

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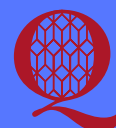# Early medieval Ireland, Archaeological excavations 1930-2004

by

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Executive Summary

- The Early Medieval Archaeology Project (EMAP) was funded in 2008 by the Heritage Council Irish National Strategic Archaeological Research (INSTAR) 2008 programme and the Heritage Council Archaeological Research Grants 2008

- EMAP's database analysis has revealed that 2,208 early medieval sites were excavated (using 3,047 excavations) between 1930-2004. EMAP has shown that there has been immense research capacity building in the commercial sector, although the resources devoted to research and interpretation of this data in the Universities, Museum and State sectors have not seen a similar expansion.

- However, despite a general perception of a 'crisis' of non-publication in Irish archaeology, EMAP has shown that the problem may not be quite of the scale hitherto believed. EMAP suggests that of the 2,208 early sites, (where excavations were undertaken both on and in vicinity of), between 1930-2004; only 95 would be considered to be 'Highly Significant'; 307 'Significant'; 485 'General Significant', 302 'Uncertain' while 1,019 site excavations were of 'No Archaeological Significance'. Irish archaeology, through well-funded collaborative research programmes such as EMAP (and other projects for other periods) could easily cope with the publication and dissemination of this new archaeological evidence.

- EMAP has demonstrated that a wide range of new early medieval settlement types have been identified, with significant insights available into the wider settlement landscape. Of the EMAP site categories investigated, a total of 346 sites were 'settlement enclosures'; 101 were 'settlement landscapes'; 129 were 'unenclosed' habitation sites, 12 were 'settlement/cemeteries and 216 were earth agricultural/industrial structures or features. A total of 89 sites were in Viking/Hiberno-Norse towns.

- EMAP has demonstrated that an astonishing range of evidence has been uncovered for the role of the church in the Irish landscape. Of EMAP's site categories, a total of 225 sites excavated were Church/Ecclesiastical'. This can be used to trace the function of ecclesiastical sites and how they related to settlement/cemetery sites, unenclosed cemeteries and to settlement, travel and the economy.

- EMAP has shown that there is significant diversity and variety in burial rites and contexts in early medieval Ireland, AD 400-1200. This includes changing practices and beliefs from the Iron Age to the end of the early Middle Ages, and this report reveals the range of archaeological evidence that provides immense potential for future research.

- EMAP has revealed that there has been a significant amount of discoveries of archaeological evidence for agriculture in early medieval Ireland, particularly in recent years with the discovery of fields, corn-drying kilns, mills and other features, that will require significant rethinking of early medieval agriculture and economy. EMAP has also tabulated and analysed the evidence for early medieval crafts and industry and trade and exchange, providing the basis for a wide range of future research and publication.

- This EMAP report concludes with a preliminary outline of future research challenges and opportunities.

Chapter 1. Introduction

Introduction

The Early Medieval Archaeology Project (EMAP) aims to investigate one of the most significant periods of social, ideological, environmental and economic change in Ireland (c. A.D. 400-1100), when the landscape of Ireland went through a series of extraordinary changes. This included population growth and social and demographic developments that saw the expansion and intensification of settlements and dwellings; radical innovations in agricultural practices (i.e. new plough technology and the earliest horizontal water mill technology in medieval Europe); in crop production and in livestock management (i.e. introduction of dairying).

Early medieval society changed radically too, as developments in political power and territorial organisation led to transitions from tribal-based chiefdoms and local kin-based social polities to regional dynastic lordships. A socio-economic system that was based on reciprocity and clientship was gradually transformed into one that was based on feudal labour services to a lord. Emerging urban markets (both monastic and Hiberno-Norse) and expanding networks of re-distribution brought an increase in international trade and exchange with Britain, Scandinavia, western Europe and beyond. In Ireland, the slow conversion from paganism to Christianity transformed people's religious beliefs, ideologies of personhood and burial practices and saw significant developments in the landscape (e.g. in cemetery organisation and the growth of monastic centres and estates).

The Early Medieval Archaeology Project (EMAP)

In recent years, an extraordinary range of entirely new, and still largely untapped, archaeological evidence has been uncovered for all these changes, thus presenting an unparalleled opportunity to create new understandings of the dynamics of historical change as experienced by the early medieval peoples of Ireland, within their wider European context. Entirely new types of sites have emerged that do not fit with traditional explanatory models (e.g. settlement/burial complexes; non-ringfort type enclosures; industrial iron-working sites; unenclosed dwellings; complexes of field-systems and enigmatically-isolated corn-drying kilns and mills). The excavation of both rural and urban 'classic' early medieval settlements and burial grounds has produced vast amounts of objects, plant and animal remains and human skeletons. Unfortunately, the Irish professional archaeological community – understandably focused mostly on the imperatives of rescue and development-lead excavations – has been largely unable to develop research opportunities offered by these new sites and landscapes.

Most recent Irish archaeological policy statements (by the UCD Foresight group; the Royal Irish Academy vision for Irish archaeology seminar; and the Heritage Council's research frameworks) recognise that the failure to transform 'data into knowledge' is the single-most problematic issue in modern Irish archaeology, almost unique in European terms. What Irish archaeology needs are good examples of collaborative research between the academy and the commercial archaeological sector, and more importantly, works of academic synthesis and publication that begin to interpret this new data. In the early medieval period, this is particularly so as the most recent works of synthesis are either out of date or have not sufficiently considered the newly discovered material (e.g. Edwards 1990, 2005; Laing 2006).

Aims and objectives of EMAP

The Early Medieval Archaeology Project (EMAP) is an INSTAR-funded research consortium, operating to an ongoing 3-year research project design, which aims to investigate and analyse the history, character and results of early medieval archaeological excavations in Ireland, to enable new understandings of the landscapes, settlements and economy of early medieval Ireland, AD 400-1170. EMAP will publish a series of books, peer-reviewed papers and website

with an online database of early medieval sites to help transform unpublished 'data into knowledge' and to support all researchers investigating this iconic period in Ireland's past.

EMAP is a collaborative, inter-institutional and North/South initiative with staff from UCD School of Archaeology and the School of Geography, Archaeology and Palaeoecology, QUB working closely with archaeologists from the state and private sector, particularly Cultural Resource Development Services (CRDS); Archaeological Consultancy Services (ACS), and Margaret Gowen & Co (but also with a range of other companies, particularly in 2009/2010). EMAP is also supporting PhD and MA scholarships for 2 professional archaeologists, supporting their careers and graduate research in the archaeological profession.

The Heritage Council Archaeological Research Grants 2007 and UCD Seed Funding Scheme 2007 provided generous funding to establish a pilot project to review the potential of the early medieval archaeological material. The report of this project has now been updated and ambitiously expanded for the investigation of early medieval archaeological excavations in Ireland, 1930-2004, but with a particular focus on the main period of discovery in recent times, 1970-2004.

This EMAP report is based both on literature research and on the compilation and analysis of a substantial database that can now be used was to rapidly quantify and synthesise the number, type, form, character, significance and results of excavations of early medieval (c. A.D. 400-1200) sites, structures and artefacts between 1970-2002. The principal resource for the compilation of this database has been the online published excavation bulletin reports (1970-2002) located at excavations.ie and a review of selected relevant published monographs and articles.

Scope of EMAP report

The scope of EMAP research has been wide-ranging as it has involved reviewing all forms of excavated early medieval settlement, ecclesiastical, industrial, agricultural and burial evidence in both rural and urban contexts excavated from 1930-2004. The accession to the EU, the redevelopment of urban centres, the construction of an extensive infrastructural network of road and pipeline schemes and the urban sprawl of Irish towns and cities across the Irish landscape has had a profound effect on the Irish landscape and also on the heritage management and legislative framework protecting the Irish landscape, and thus has transformed the face of Irish archaeology.

However, as is well-known, infrastructural and residential developments, particularly since the latter phases of the 'Celtic Tiger' years, have placed a serious strain on Irish archaeological organizations with the effect that most resources have been devoted singly towards field recording rather than research. This imbalance between excavated information and the resources available to access this data has raised a number of critical issues which are essential to understanding both a) the nature and practice of early medieval archaeological research and discovery today and b) the character of early medieval Ireland in the past.

This EMAP report will initially examine a number of key issues concerning the character and practice of early medieval archaeological excavations from 1930-2004:
- What is the approximate number of annual excavations between 1930-2004 that concern early medieval related material?
- What is the distribution of these excavations and excavated sites across the country?
- Who has been responsible for these excavations (e.g. University units, government and commercial sectors) and how has patterns changed over time?
- What is the balance of types of excavation between 1930-2004 carried out across the country (e.g. testing, rescue, research) and how has the character of these changed over time?
- How significant is the early medieval archaeological evidence recovered from these excavation types and how have patterns changed over time?

- Why have excavations been undertaken and what has been the impact of different infrastructural and development schemes and projects on the early medieval archaeological resource?

The EMAP report will then move on to analyse and discuss the character of the archaeological evidence recovered from excavations mainly from the period 1930-2004, although use will also be made of available published or emerging archaeological evidence discovered prior to (e.g. 1930-1969) or after these dates. It is hoped that this information can be used by scholars to further understand and examine early medieval landscape and society in the past. It will also seek to identify potential research areas in early medieval archaeology.

Sources of information for EMAP report

EMAP's long-term principal objective is to publish a series of reports and to establish an online database of excavated early medieval evidence that can be used by scholars and the interested public alike. Stray finds, metal-detecting discoveries, survey work and evidence from antiquarian investigations were excluded from this project and are beyond the immediate focus of the EMAP project. However, ultimately it is intended that every scientifically undertaken excavation since 1930 that been accorded an excavation license or emergency license across Ireland will be examined by EMAP.

Excavations Bulletin

The objectives of this EMAP report were a rapid quantification and synthesis of early medieval excavations in Ireland. The Excavations Bulletin at www.excavations.ie was singled out as the single-most important resource to achieve this immediate aim. Excavations.ie provides succinct reports about every single excavation undertaken across the island from 1970-2004.

EMAP initially decided to focus on excavated material from 1970-2004, as this was the only complete material available on the online bulletin when data was being collected in mid-2008. Archaeological excavations from the period 1930-1969 were then also included for this 2008 review even though (i.e. less than 50) many are relatively well published in such journals as PRIA, JRSAI, the Ulster Journal of Archaeology and other regional/local publications (e.g. the Hencken excavations at Lagore, Balllinderry crannog No. 1, Ballinderry crannog No. 2; Ó Ríordáin's excavations at Garranes, Ballycatteen etc; O'Kelly's excavations at Church Island, etc). Excavation bulletin reports from excavations from 2005-2008 are not currently available for review. The reports held in the archives of the relevant development (e.g. the NRA), governmental, academic and Museum authorities have only briefly been examined by EMAP as this work will form part of 2009 research.

It is well known that the excavations bulletin, although it is an extremely valuable database in itself for early medieval archaeology, is not sufficient. The excavations bulletin reports are often provisional by nature – usually written only some months after excavations and also often represent reports which are submitted when excavation is still ongoing. It is likely then in some cases that interpretations of the sites and other data may have changed subsequently. As these reports are interim by nature, radiocarbon determinations are often pending for undated archaeology such as ironworking furnaces or kilns and specialist reports may not have been received. This is and will remain a major issue for the EMAP database until more detailed research in the unpublished reports is achieved. It was therefore decided that any undated sites that appeared to be early medieval would be described as 'uncertain' in terms of their significance in the EMAP database. More detailed research in 2009 may enable some – but not all – of these uncertain sites to be reclassified.

The quality of the information itself within the bulletin reports also varies quite significantly often because different archaeologists were responsible for writing them (and not always the site director). In some cases, detailed information will be supplied about the number, type and character of monuments and structures like buildings for example while in other instances no

such data is forthcoming. There can also be lack of consistency in including information such as SMR numbers or excavation license numbers within the reports.

The other issue with the excavations bulletin is that there is no standardization of terminology employed in the site type or site name descriptions. It is then very difficult to search the excavations.ie database for site types as they can be described in multiple ways (such as 'ecclesiastical', ecclesiastical enclosure', ecclesiastical site' and 'ecclesiastical remains' etc). Similarly, there is no standardisation in terms of the use of townland or place names.

The excavations bulletin is then principally a database of summary excavation reports written by numerous different archaeologists rather than one of discrete entities of information compiled and organized through a central authority. It is however the most significant archaeological resource in Ireland whose shortcomings are only described here to highlight the issues with the dataset that EMAP has dealt with. The 'best is the enemy of the good' and it is considered here that Excavations bulletins, despite their limitations, can be used to rapidly assess to consider the character of excavated early medieval archaeological evidence in Ireland. Future EMAP research can make better use of unpublished excavations reports, journal articles and monographs to build on this preliminary picture.

Other Published Information

Published material concerning excavations of early medieval evidence from 1930-2004 was another important resource consulted for compiling the database. The Excavations Bulletin was incorporated into the Irish Journal of Archaeology between the years 1977-1984. Excavations bulletin reports for those years in particular often only contained the name of the published article associated with the excavation. The associated published article was tracked down in these instances to discover information about the excavations at these sites.

Medieval Archaeology also contains concise yearly synopses written by various authors about important excavations undertaken in Ireland over several years. This source was also consulted when no information could be established from the excavation bulletin report about an excavated early medieval site.

Particular journals that were consulted when compiling the database included the *Ulster Journal of Archaeology*, *Journal of Irish Archaeology*, *Medieval Archaeology*, *Proceedings of the Royal Irish Academy* and *Journal Royal Society of Antiquaries of Ireland.* Published monographs were also a valuable source of information – particularly for the significant archaeological excavations that have been conducted in Cork. Of particular importance were works by Rose Cleary and Maurice Hurley for urban excavations in Cork (1997 & 2003), by Hurley, Scully and McCutcheon (1997) for urban excavations in Waterford and Heather King's (1994 & 1998) edited Clonmacnoise Studies monographs. A wide range of other sources was consulted such as, for example, Wallace's (1992) publication on Viking Buildings in Dublin when dealing with specific monuments or structures for the EMAP database.

The Unpublished Archaeological Excavations Survey (Doyle *et. al* 2002) commissioned for the Heritage Council also provides a comprehensive review of all the unpublished and published archaeological reports from 1930-1997 in the Republic of Ireland. It provided additional important information about the changing character of excavations in this period while its appendices of unpublished sites were invaluable as a source of information for locating previously unknown sites and identifying excavation license numbers.

Other useful Sources

The Internet proved to be a valuable resource for this project. It was often necessary to consult online maps to establish the location of townlands and excavated sites along urban streets. Both online and published national maps provided valuable information in tracking down excavations along road schemes. The NRA (NRA.ie) and Bord Gáis websites were particularly valuable in this regard. Information about archaeological projects was also often made available on web pages such as the NRA's Archaeology Leaflets and Poster Series. Commercial

archaeological company websites like that, for example, hosted by Margaret Gowen & Co. Ltd. also proved very useful as they contained information about excavations and projects conducted by companies.

EMAP also decided that some amount of historical research of ecclesiastical sites was also required to identify the early medieval origins of these sites. It was difficult to sometimes establish which ecclesiastical sites could have an early medieval origin as the excavation bulletin often described these sites under multiple ecclesiastical terms including 'ecclesiastical site', 'ecclesiastical enclosure' 'church and graveyard', 'burial-ground' and 'cemetery' etc. with no information given or provided about their dates or origin. A number of sources particularly Gwynn & Hadcock's (1970) comprehensive study of Irish Religious Houses as well as local historical books and articles, local web pages and County Library web sites were consulted in order to try to establish the antiquity of these ecclesiastical sites. The information allowed the database to collect information about ecclesiastical sites with known early medieval historical origins; medieval ecclesiastical sites whose early medieval origins could not be established and undated ecclesiastical sites.

The History and Legacy of Early Medieval Archaeological Excavation in Ireland

Introduction

Archaeology is a relatively recent discipline, and reliable excavation techniques and dating technology were only widely adopted in Ireland in the latter half of the twentieth century. The changing interpretation of the role and function of early medieval monuments reflect the history of the development of archaeological science in Ireland, a scholarly overview of which is found in '*Foundation Myths*' (Waddell 2005). Political, historical and regional factors have also been important in framing research agendas and selecting excavation sites, and their impact on the overall development of early medieval archaeology in Ireland must be acknowledged. This chapter will outline how early medieval archaeology developed in the island of Ireland, and then will examine how this has impacted upon the interpretation of the major archaeological site-types from this period.

Antiquarians

Through the seventeenth, eighteenth and nineteenth centuries, Irish archaeology was the remit of interested amateurs. These were drawn predominantly from the professional classes, with a smattering of clergymen like Richard Pococke (1704-1765), severally Bishop of Ossory, Elphin and Meath; landed gentry in the vein of Thomas Westropp (1860-1922); and ex-military figures such as Major-General Charles Vallancey (*c*. 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) provided vehicles by which like-minded individuals could meet and disseminate their ideas and collections of Irish antiquities. Much of this work was theoretical rather than practical, with arguments based on often spurious historiographical writings, and not on actual physical evidence. The origin and function of upstanding prehistoric monuments, such as portal tombs, cairns, dolmens and cromlechs, provided the subject of much early discussion. James Ware's (1594-1666) '*Antiquities and History of Ireland*' (translated and published by Walter Harris in 1705) was the first comprehensive survey of Irish antiquities, and was primarily concerned with ecclesiastical sites. Early church sites, and especially round towers, remained the source of much discussion – indeed the irreconcilable differences between the Nordic model and the Scytho-Celtic model for the origin of these sites ultimately caused the collapse of the Hibernian Antiquarian Society in 1783 (Love 1962). These discussions evolved over the subsequent century and, for example, George Petrie (1790-1866), Hodder Westropp (1802-1885), Richard Brash (1817-1876) and

Margaret Stokes (1832-1900) all developed theories into the provenance of the Irish round tower, that ranged from pagan phallic symbols, to sun clocks, to Phoenician constructions.

Where it existed, archaeological 'fieldwork' tended to take on the form of surveys of monuments. Walter Harris (1686-1761) undertook work in Co. Down in 1744, and Charles Smith (*c.* 1715-1762) also produced surveys of the history, topography and antiquities of counties Waterford, Cork and Kerry in 1746, 1750 and 1756. Ireland's first comprehensive provincial surveys were undertaken by the artists Gabriel Beranger (1729-1817) and Angelo Maria Bigari (*fl.* 1772-1779) in 1779 under the auspices of the recently formed - and soon to be defunct - Hibernian Antiquarian Society. Harbison (2002) has recently provided a detailed reconstruction of the journey of these artists on one of their earliest tours across Connacht in the same year. A further regional survey undertaken by John James Barralet (1747-1815) and Gabriel Beranger was commissioned by William Burton Conyngham for the counties of Wexford and Wicklow in 1780 (Harbison 2004).

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, not only to map the island, but also 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 was too large – the only Ordnance Survey Memoir to be published contemporaneously was that for the parish of Templemore in Co. Londonderry (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 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 to include other site-types, such as ringforts 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 more on site-types, rather than 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*' (1886). Thomas Westropp produced a series of papers cataloguing the 'ancient forts' of Ireland in the late-1890s and early-1900s that, for the first time, attempted to deal systematically with the single most prevalent archaeological site type in Ireland.

Some early excavations were undertaken during the nineteenth century. The majority of these were little more than treasure-hunting expeditions – e.g. the dynamiting of the walls of Dun Ceithern, Co. Londonderry in 1837 in search of gold (McCaughan 1988) – 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 (Getty 1855; Getty 1856; Getty 1857) uncovered quantities of human skeletal remains, but little of archaeological value. 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 in Munster, but none of these were sufficiently written up. With the exception of the excavations in and around these round towers during the mid-nineteenth century, very little physical archaeology was undertaken on Early Medieval sites in Ireland. The British Israelites' excavations in search of the Ark of the Covenant at Tara, Co. Meath between 1899 and 1902 were driven by pseudo-mythological imperatives and were eventually curtailed by the Royal Irish Academy (Carew 2003).

Preservation by reconstruction also seems to have formed the basis for antiquarian or amateur archaeologist projects. Between 1874 and 1878, Walter Bernard, a medical doctor from

Londonderry City, undertook and oversaw the fanciful reconstruction of large portions of the former McLaughlin capital, the Grianan of Ailech, Co. Donegal (Bernard 1870-9).

The disestablishment of the Church of Ireland on 1 January 1871 under the *Irish Church Disestablishment Act* (1869) also 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. This raised other problems, for example, the rather fanciful reconstruction/conservation work undertaken on 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.* 2002, 201), and the resultant conservation work was of dubious value.

The Nendrum excavations were to be the last major amateur archaeological project in Ireland. Archaeology had undergone a phase of evolution in the early-twentieth century, and was rapidly developing into a complex, professional discipline. For this reason, but perhaps also because of burgeoning 'political self-consciousness' (Evans 1968, 7) both north and south of the new border, the archaeological heritage was removed from the purview of the amateur, and placed under the remit of state-controlled organisations.

The earliest University Excavations

University academics assumed a leading role during the formative years of controlled archaeological excavation in Ireland. The principal early excavator in the south of Ireland, and latterly the Irish Free State, 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 large number of excavations in Ireland. Most of these were focused on prehistoric sites, but his unpublished excavations at Rathcroghan, Co. Roscommon in 1913, and his excavation at Uisneach, Co. Westmeath in 1925 (Macalister & Praeger 1928) investigated high status Iron Age/Early Medieval transition period sites. Sean P. Ó Ríordáin (1905-1957) from University College, Cork, further developed Early Medieval archaeology in the Irish Free State with his excavations in the 1930s and 1940s at sites such as Cush, Co. Limerick (1940) and Garranes, Co. Cork (1942). At around the same time, the South African, Oliver Davies (1905-1986), Lecturer in Ancient History at Queen's University, Belfast, undertook a number of Early Medieval excavations in the counties of south Ulster (Davies 1947). The Harvard Archaeological Mission to Ireland in the 1930s, under Hallam Movius (1907-1987) and Hugh O'Neill Hencken (1902-1981), was also a leading influence in large-scale excavations, such as Ballinderry I crannog (O'Sullivan 2003, 20-23; Waddell 2005, 217-220). Ó Ríordáin's student, Michael J. O'Kelly (1915-1982), also from University College, Cork, helped develop Early Medieval archaeology in the Republic of Ireland with excavations at sites like Garryduff, Co. Cork (1962-4).

University research excavations tended to focus on substantial upstanding monuments, such as Garranes and Garryduff. This dual emphasis on excavating known archaeological sites and excavating substantial (presumably high status) sites meant that a high proportion of early university excavations on Early Medieval sites could either be classified as 'Significant' or 'Highly Significant'. For similar reasons later university-based excavations show a predominance towards 'Significant' or 'Highly Significant' sites.

The emergence of State-funded Excavations

'Political self-consciousness' (Evans 1968, 7) played an important role in defining the way in which the archaeological heritage was interpreted in Ireland post-partition. In Northern Ireland, the care of ancient monuments was entrusted to the Ministry of Finance, and although civil defence was a budget priority, an Advisory Committee (later an Advisory Council) was

established in 1926 to deal with the state of archaeology. The result of this was the creation in 1934 of the first regional archaeological survey in Ireland. In 1940 '*A Preliminary Survey of the Ancient Monuments of Northern Ireland*' (PSAMNI) was produced by D. A. Chart, which would form the basis for future archaeological surveys.

State-funded excavations became an increasingly important aspect of archaeology in Northern Ireland from the 1950s onwards. There was a sustained phase of Early Medieval excavation in the 1950s, 1960s and through into the early 1970s by the archaeologists of the Historic Monuments Branch of the Ministry of Finance (N.I.). These excavations focused on Co. Down (in preparation for the production of the *Archaeological Survey of Co. Down* (1966)), and although a similar series of excavations was planned for the production of the *Archaeological Survey of Co. Armagh* (forthcoming), only a handful of these were undertaken.

The excavations in the late-1960s and early-1970s were focused on the roadwork's associated with the creation of the M2 motorway in south Co. Antrim, and in this sense were prescient of the bulk of archaeological enquiries that would be undertaken thirty years later. In the 1980s, farm improvement grants from the European Economic Community meant that a number of highly significant sites were fully excavated by the Historic Monuments and Buildings Branch, Department of Environment (N.I.). Department of Environment archaeologists continued to play an important role in excavations in Northern Ireland until 1993 when the excavation unit was privatised and the Environment and Heritage Service archaeologists adopted a more supervisory role. The Ulster Museum also undertook a large number (34) of excavations on Early Medieval sites in the 1970s and 1980s. Many of these government-funded excavations were subsequently published in *UJA* and other journals.

In a similar way to university excavations, government-funded excavations tended to focus on upstanding, substantial sites, and thus tended to identify 'Significant' or 'Highly Significant' sites.

The development of Legislation and Protected Sites and Monuments

Archaeological monuments have been accorded protection by the state on the island of Ireland through a whole string of enactments dating back to the disestablishment of the Church of Ireland in 1869.

It was not till the early 20th century that records or 'Schedules', in the case of Northern Ireland, began to be compiled of archaeological monuments in private ownership across the island. The National Monuments Act 1930 was the first enactment to truly make provision for the protection of archaeological monuments and objects in *Saorstát Eireann*. Not only did it create a forum for archaeological excavation but it also established the Archaeological Survey of Ireland, which set up the Sites and Monuments Record in the 1980s. A similar SMR record exists in Northern Ireland. Archaeologists in both jurisdictions have continuously updated these two inventories since then.

The great majority of protected SMR sites in both jurisdictions encompass traditional easily identifiable monuments like ringforts, cashels and ecclesiastical sites that have been the focus of antiquarian and archaeological surveyors since the early twentieth century. Since then both lists have grown incrementally over time as new monument classes have been discovered and more importantly recorded over the history of the archaeological surveys
See http://www.archaeology.ie/ArchaeologicalSurveyofIreland/#d.en.87.

To date, the Sites and Monuments Record has established a list of over approximately 120,000 monuments while a further 800 major archaeological sites are in state care in the Republic. Approximately a further 15,000 sites are recorded in the Northern Ireland SMR. In total then, at least 135,000 monuments are listed in the records of archaeological authorities in Ireland. As discussed below, some of these protected monuments were the focus of salvage excavations in the 1970's and 1980's due to farm improvement schemes or residential developments. In more recent years, both the National Monuments Amendment Act 1994 in the Republic as well other

enacted legislation such as the EU Valletta Convention 1992 have introduced new forms of archaeological investigation such as environmental impact statements (EIS), testing and monitoring which have provided further protection of archaeological landscapes and monuments across the island. The Urban Archaeological Survey of Ireland has also delineated areas of archaeological potential in the historic cores of Irish towns and cities further protecting the archaeological resource in these areas.

It is evident then that both these base-line inventories of Irish monuments, compiled by surveyors with vastly different methods and interests since the early 20th century as well as transforming legislative protection of Irish archaeological sites and monuments have informed the origins, quality and quantity of excavations over different periods of time since the early 20th century.

The origins of commercial or pre-development Excavations

The *Valletta Convention on the Protection of the Archaeological Heritage* (1992) has had a major impact on the nature of archaeology on the island of Ireland. This sought to protect the archaeological heritage by legislation throughout the European Union, and was adopted by both the United Kingdom and the Republic of Ireland. Although the licensing of archaeological excavations had been employed earlier than this, one of the major impacts of the adoption of Valletta was the standardisation of the licensing process in both Northern Ireland and the Republic of Ireland, and the establishment of uniform codes of practice and conduct.

In Northern Ireland, archaeology is currently controlled under the 'Historic Monuments and Archaeological Objects (NI) Order 1995', and is supervised by the Northern Ireland Environment Agency (formerly the Environment and Heritage Service). Archaeological excavation in the Republic of Ireland is subject to the 1997 National Monuments Act, and is supervised by the National Monuments Service, Dept of the Environment in consultation with the National Museum of Ireland.

Undoubtedly, the greatest impact of Valletta on archaeology in Ireland, however, has been the legislative incorporation of archaeology into the planning and pre-planning process. In Northern Ireland this is currently covered by PPS16 (Planning Policy Statement 16), and in the Republic of Ireland, by the Planning Acts and National Monuments Acts. The next Chapter will review the scale and scope of pre-development archaeology in Ireland.

The impact of the history of Early Medieval Excavations in Irish archaeology

It is evident then that the character of early medieval excavations has been informed by archaeological legislation protecting state surveyed sites and monuments across the island and by developing approaches to early medieval archaeology as a whole. Many early excavations of early medieval monuments in the Ireland, as elsewhere, were undertaken under the auspices of research bodies, often sponsored by the state sector. The Harvard Archaeological Mission excavation in the 1930's at significant crannogs at Ballinderry crannog No. I, Co. Westmeath; Ballinderry crannog No. II, Co. Offaly and Lagore crannog, Co. Meath as well as Sean P. Ó Ríordáin's excavations of a series of ringforts in the Cork/Limerick area in the 1940/50's were the principal highlights of this formative period.

It is well-known that these key excavations have tended to shape the academic and popular imagination of the landscapes of early Ireland; principally leading to the dominance of the 'ringforts and monasteries' model of early medieval settlement. It is also the case that perceptions of early medieval society itself were shaped by the results of excavations at such sites as the early medieval crannog of Lagore, Co. Meath or of the classic early medieval 'ringfort' excavated by Ó Ríordáin – which fitted with interests in the 1930s in the self-sufficient

early medieval farmer, suspiciously like the 20th century farmer that both governments north and south were trying to create.

Up until the 1960s, in the public imagination and in the planners' minds, early medieval archaeology was about the significant monuments of mythical or real kings and the monastic treasures of the Saints and Scholars. There were very few excavations of less impressive and identifiable monuments like unenclosed settlements or agricultural and industrial sites as these sites tended not to have the aura of extraordinary wealth and quality of evidence which royal sites like Lagore or Garranes had to offer to the under equipped archaeological community. Most importantly however, they were no real reason for these sites to be excavated, as no legislation existed to protect and test for archaeology beyond the bounds of identified archaeological monuments.

An increasing number of rescue excavations were undertaken particularly from the 1960-80's across the island in advance of EU-grant inspired farm improvement initiatives and development-led excavations in both rural and urban contexts. Archaeologists from the Northern Ireland Historic Monument's Branch including A.E.P. Collins, David Waterman, Chris Lynn and Brian Williams undertook a series of important excavations of ringforts and raised ringforts. State bodies in the Republic such as the National Museum and OPW also continued to provide the initiative and were involved in significant excavations in Viking Dublin although there were a series of important research excavations undertaken by University academics at sites like Lisleagh ringfort, Co. Cork and Knowth, Co. Meath.

The effects of EEC (subsequently EU) membership had a significant impact on the island from the 1980's onwards in particular. European funding provided the financial support for a number of important large-scale infrastructural projects such as the Bord Gáis Cork-Dublin Gas Pipeline and more recent NRA roadway development schemes. Along with excavations in advance of large-scale urban and rural development projects, a whole collection of previously unknown archaeological evidence has been discovered beyond the bounds of the cartographic circles protecting SMR and Scheduled monuments. The most important effects of this is the shift away from excavations focused on traditional surveyed monuments such as ringforts and ecclesiastical sites towards new forms of archaeological evidence such as isolated ironworking hearths, unenclosed settlements and settlement/cemetery sites. The emergence of a large independent commercial sector of archaeologists to cope with the increasing demands of these large-scale redevelopment projects has been a parallel phenomenon in this later period.

EU membership also placed the Irish archaeological resource under the protection of tighter planning legislation. During the 1990's, new forms of archaeological investigation have required excavations to be undertaken both on and significantly *near* protected SMR and Scheduled monuments in advance of any form of development initiative. Archaeological Surveys have also delineated the boundaries of areas of archaeological potential within the historic core of urban towns and cities while the protection of archaeological landscapes has also received some recognition. These tighter planning requirements have increased the number of excavations being undertaken on or near particular protected SMR monuments. To conclude then, both tighter legislation as well as a simultaneous massive increase in development-led excavation has transformed the character of Irish archaeological excavations in recent years.

Conclusions

In the formative years of Irish archaeology, excavations were few in number and focused on significant early medieval monuments/sites. Excavations in the early years were largely undertaken as part of research projects with the intention of maximizing the generation of knowledge of early medieval landscape and society.

From the mid twentieth century onwards, increasing number of excavations were also undertaken as part of rescue/salvage operations of important recorded monuments and also tended to generate significant archaeological knowledge.

During the 1980′s and 1990′s and early twenty first century, large-scale development-led rescue projects and EU funded infrastructural schemes have revealed a whole new character of previously unidentified archaeological evidence as excavations have moved beyond the boundaries of protected SMR and Scheduled sites/monuments towards the investigation of entire landscapes.

Simultaneously, the rights of archaeological SMR monuments, landscapes and areas of archaeological potential have been accorded extra protection through the introduction of new types of archaeological excavations which are more about complying with tighter planning requirements than generating meaningful knowledge about past landscapes and societies.

Chapter 2. The Character of Early Medieval Excavations in Ireland, 1930-2004

Introduction

Our knowledge of the archaeology of early medieval Ireland, and particularly this island's people's life ways, dwelling practices and material culture, derives largely from archaeological excavation carried out in the period 1930-2004 (the results of excavations 2005-2008 are still difficult to access, although occasional use can be made of a few publications). However, across the last seventy years or so, there are distinct trends and patterns in the history of archaeological excavation in Ireland, that all heavily influence the ranges and types of data that has been recovered. There is then a range of questions that need to be asked involving the background to, the practice of, and the character of early medieval- related excavations over time. It is well known that archaeological excavations have increased dramatically in Ireland in recent years. Major infrastructural schemes, urban and rural development-led projects and new planning legislation have all transformed the sheer number and character of excavations undertaken annually. They have also dramatically altered the shape, face and make-up of the Irish archaeological organisations dealing with these recent spectacular changes. Furthermore and perhaps most importantly, they have radically changed the character of archaeological evidence recovered in recent years. These developments have yet to be fully worked out to understand their implications and potential in transforming our knowledge of past societies in Ireland.

EMAP has sought to examine some of these key developments through a rapid assessment of the excavated evidence available principally on the online excavations bulletin (currently available for the period, 1970-2004). The EMAP database includes data on **2,208 archaeological sites** at the present, containing information about excavations on, and near, early medieval or potentially early medieval sites, monuments and structures – and as it well known in archaeology, the meaning of the word 'site' remains ambiguous in practice, being variously applied in the past to isolated single ringforts, to groups of ringforts with fields or even to entire monastic complexes (e.g. Clonmacnoise, Co. Offaly might thus be described as an 'archaeological site'). A total of **3,047 archaeological excavations** were used for excavating those 2,208 sites. The larger number of excavations than sites can be explained by the occasional fact of multiple licences being used year-by-year. Most 'sites' typically contain only one excavation license, a good example being an excavation of an isolated ironworking site discovered along a road scheme. It is also unlikely that further excavation will be undertaken at such sites. However, there is always the potential that a number of different excavation licenses may be undertaken on a large monument such as a ringfort or ecclesiastical site. An extreme example is Clonmacnoise, Co. Offaly where over 27 excavation licenses were issued for that 'site' from 1930-2004.

Key research questions of this chapter's assessment of the character of early medieval excavations in Ireland include those aiming to establish:

- What is the approximate number of annual excavations from 1930-2004 that concern early medieval-related material?
- What is the distribution of these excavations and excavated sites across the country?
- Who has been responsible for these excavations (i.e. Universities, government and commercial sectors) and how have patterns changed over time?
- What is the approximate number of excavation types (e.g. Testing, rescue, research) and how has the character of these excavation types changed over time?
- How significant is the early medieval archaeological evidence recovered from these excavation types and how has patterns changed over time?

- Why have excavations been undertaken and what have been the impacts of different infrastructural and development schemes and projects?

Early Medieval Excavations 1930-2004

Early Medieval Excavations Annually 1930-2004

Under Irish system of licensing, a site excavation can often continue from one year to the next. This was particularly the case in the 1970's and 1980's when excavations, often research-based, may have been undertaken at the same site over a number of seasons. To describe an extreme example, the same excavation license was used for excavations at Knowth, Co. Meath for 32 years from the 1970's-1990's. In more recent years, new excavation licenses tend to be issued more frequently. As excavation licenses can continue from one year to the next, it is then evident that the number of excavations licenses (a total of 3,047 on early medieval sites) is likely to be less than the *number of excavations* undertaken annually; probably exceeding the above number by hundreds if not thousands.

Table 2:1 and Figure 2:1 below describe the amount of excavations undertaken annually from 1930-2004 (*not* the number of excavations licenses issued or undertaken), which dealt with early medieval or potential early medieval archaeological evidence. It was felt that examining the amount of excavations undertaken annually rather than the amount of excavations licenses issued each year would better demonstrates the increase in excavation activity from 1970-2002. The graphics illustrate in particular the huge increase in excavations undertaken annually, particularly from 1993/1994 onwards. The exponential increase in archaeological excavations in the final years of the 20th century/early 21st century can also be clearly seen. No data is currently available on excavations carried out 2005-07, but there is no reason to suppose that the increase rate has changed dramatically from the 2004 figures.

Table 2:1: Early Medieval Excavations Annually 1930-2004

Year	Total	-	Year	Total	-	Year	Total
1930	2	-	1955	9	-	1980	21
1931	4	-	1956	7	-	1981	24
1832	5	-	1957	7	-	1982	25
1933	5	-	1958	9	-	1983	25
1934	8	-	1959	11	-	1984	18
1935	7	-	1960	10	-	1985	24
1936	3	-	1961	6	-	1986	28
1937	6	-	1962	4	-	1987	22
1938	12	-	1963	5	-	1988	33
1939	10	-	1964	7	-	1989	39
1940	8	-	1965	3	-	1990	55
1941	3	-	1966	3	-	1991	51
1942	6	-	1967	5	-	1992	66
1943	3	-	1968	5	-	1993	73
1944	4	-	1969	7	-	1994	76
1945	3	-	1970	15	-	1995	85
1946	5	-	1971	21	-	1996	109
1947	4	-	1972	19	-	1997	131
1948	2	-	1973	20	-	1998	176
1949	3	-	1974	17	-	1999	242
1950	4	-	1975	21	-	2000	254
1951	6	-	1976	14	-	2001	293
1952	2	-	1977	16	-	2002	417
1953	11	-	1978	16	-	2003	408
1954	6	-	1979	18	-	2004	487
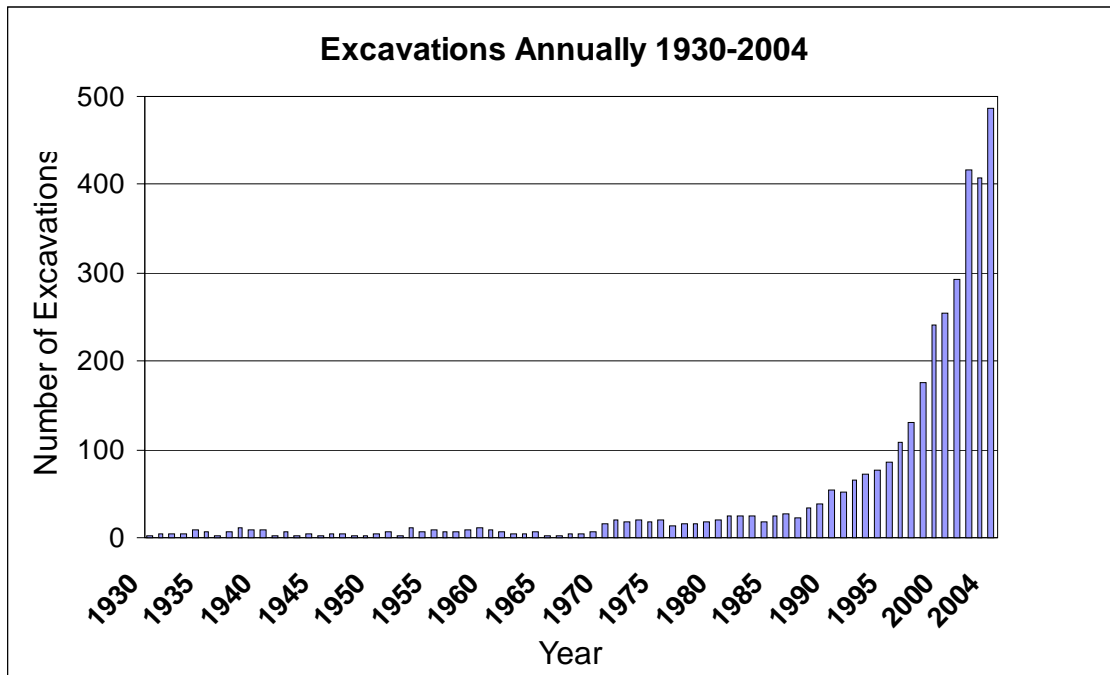
Figure 2:1 Early Medieval Excavations Annually 1930-2004

Excavated Sites per County

The database contained entries for 2,208 sites. Table 2:2 and Figure 2:2 illustrate the distribution of these excavations across the 32 counties. The highest number of counties in which excavations were undertaken on or in proximity to early medieval sites occurred in the Northern Leinster, west and southwest Munster and the northeast Ulster. The counties of Meath, Louth, Dublin and Kildare, have a high proportion of the excavations, undoubtedly because of their proximity to Dublin city, with all its development pressures. Elsewhere, Antrim and Down have been the principal focus in the northeast, while fewer excavations have been undertaken in the northwest and west though parts of Munster, particularly Kerry and Cork, have clearly received extensive attention.

Table 2:2 Early Medieval Excavated Sites Per County 1930-2004

Antrim	104	-	Leitrim	30
Armagh	20	-	Limerick	99
Carlow	12	-	Longford	20
Cavan	35	-	Louth	108
Clare	96	-	Mayo	83
Cork	203	-	Meath	145
Derry	25	-	Monaghan	16
Donegal	35	-	Offaly	39
Down	65	-	Roscommon	82
Dublin	147	-	Sligo	96
Fermanagh	17	-	Tipperary	95
Galway	93	-	Tyrone	25
Kerry	127	-	Waterford	63
Kildare	89	-	Westmeath	75
Kilkenny	47	-	Wexford	45
Laois	31	-	Wicklow	41

Excavated Sites Per County 1930-2004
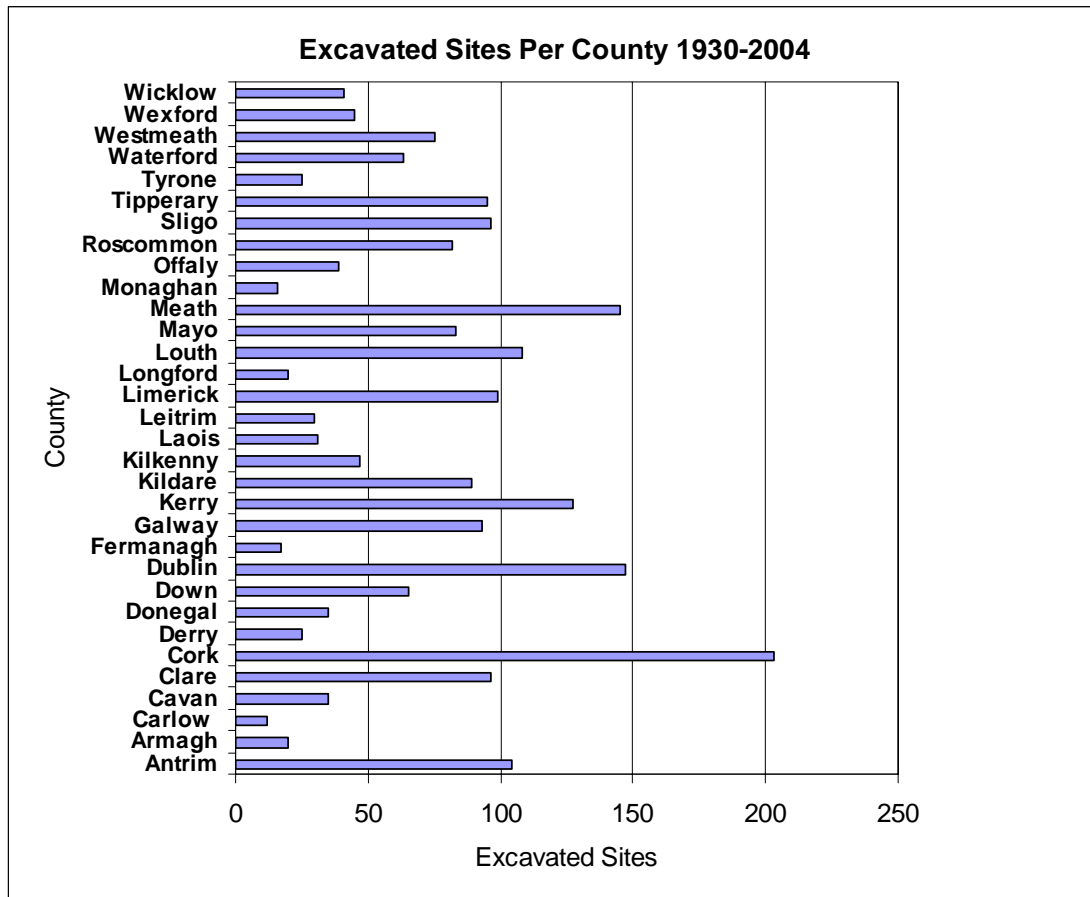
Figure 2:2 Early Medieval Excavated Sites Per County 1930-2004

Early Medieval Excavations per County

The database contains 3,047 excavations within the 2,208 EMAP defined 'sites'. The distribution of the excavations have a similar pattern to the evidence for early medieval excavated 'sites' across the country with notable concentrations again in Northern Leinster, Eastern Ulster and the south-western counties of Ireland.

The current database also collected information about whether the excavation within an EMAP defined 'site' was or was not of early medieval archaeological significance. Table 2:3 below and Figures 2:3 & 2:4 indicate that 51% of the excavations were of no archaeological significance. Counties in Connacht, the northwest and parts of the midlands contained a higher percentage of excavations of no archaeological significance in comparisons to those particularly in Northern and to a lesser extent to the counties in northern Leinster.

*T*able 2:3 Significance of Early Medieval Excavations Per County 1930-2004

County	Archaeologically Significant	No Archaeological Significance	Total
Antrim	99	15	114
Armagh	27	9	36
Carlow	6	10	16
Cavan	6	33	39
Clare	63	68	131
Cork	108	125	233
Derry	29	10	39
Donegal	15	32	47
Down	70	14	84
Dublin	190	87	277
Fermanagh	11	7	18
Galway	52	59	111
Kerry	70	84	154
Kildare	66	102	168
Kilkenny	38	36	74
Laois	20	17	37
Leitrim	0	36	36
Limerick	61	68	129
Longford	7	15	22
Louth	86	84	170
Mayo	39	64	103
Meath	113	93	206
Monaghan	6	16	22
Offaly	38	40	78
Roscommon	21	89	110
Sligo	32	86	118
Tipperary	46	76	122
Tyrone	27	1	28
Waterford	56	34	90
Westmeath	47	53	100
Wexford	20	55	75
Wicklow	33	27	60
Total Excavations	1502	1545	3047
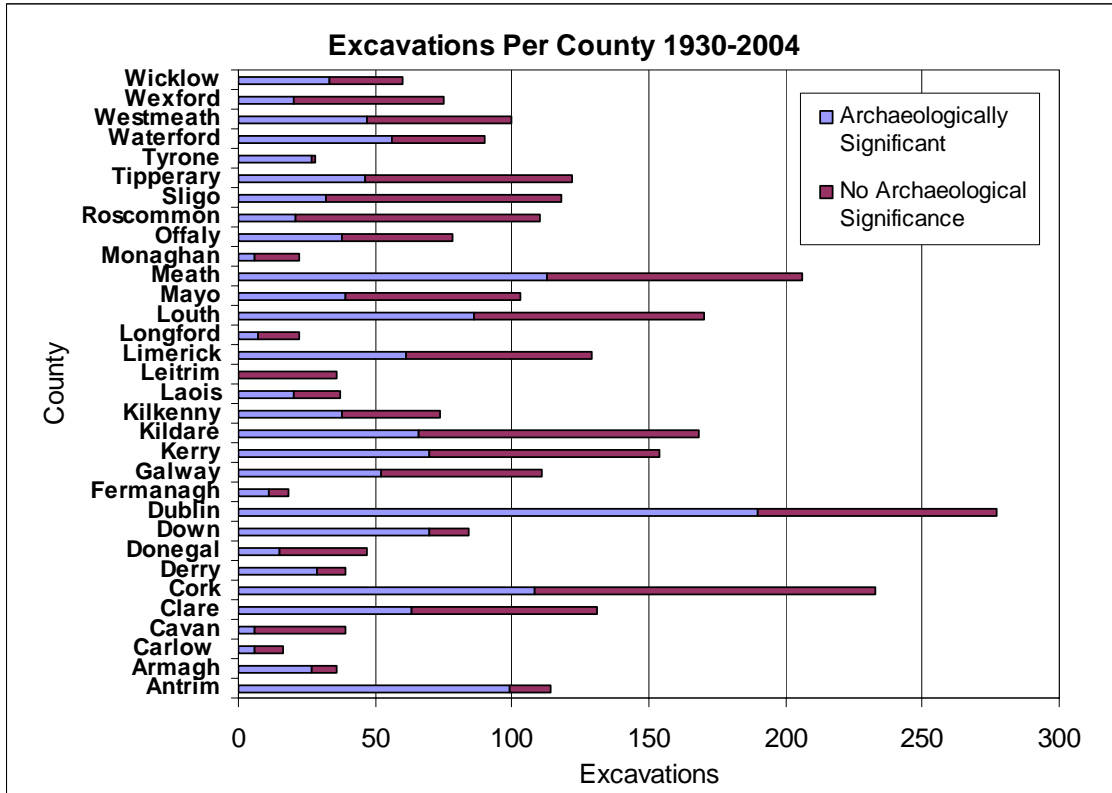
Figure 2:3 Significance of Early Medieval Excavations Per County 1930-2004
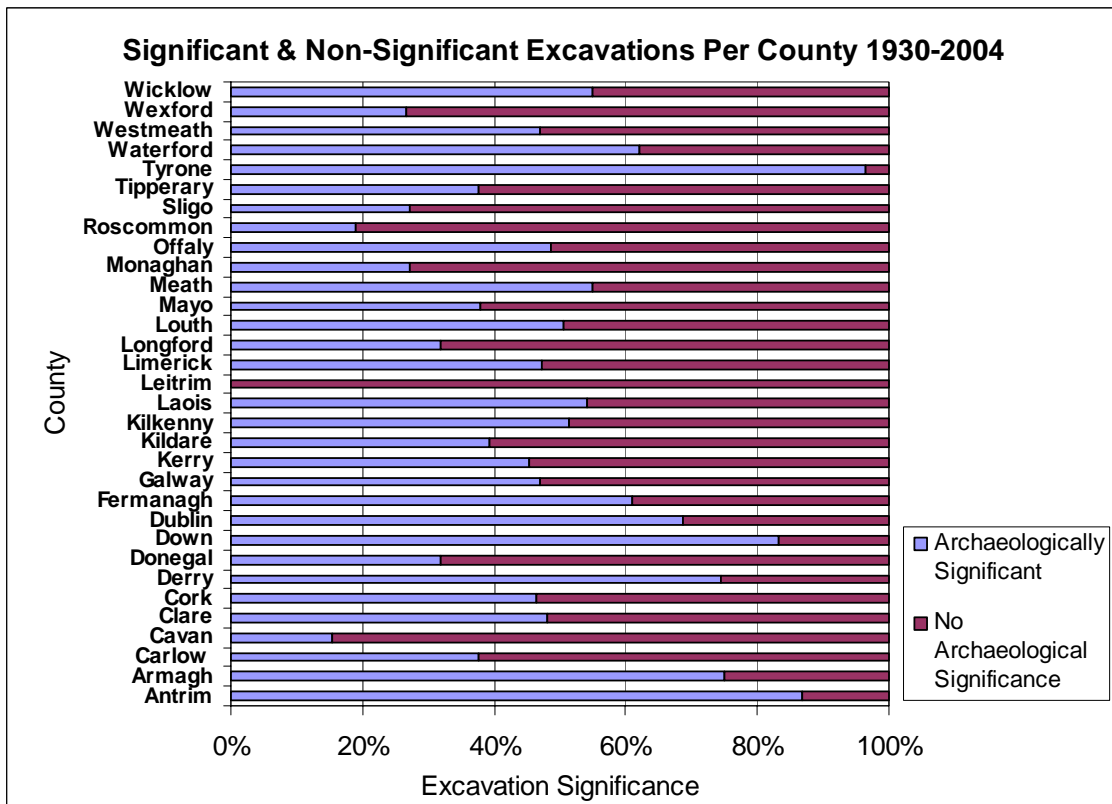
Figure 2:4 % of Significant & Non Significant Excavations Per County 1930-2004

Excavations annually in the Republic of Ireland and Northern Ireland 1930-2004

Different jurisdictions on the island of Ireland have traditionally approached archaeology in different ways; whether it has been archaeological survey, museums collections or excavation licensing.

Table 2:4 and Figure 2:5 below comparatively illustrates the difference in the amount of excavations undertaken annually on or in close proximity to early medieval sites in both the Republic of Ireland and Northern Ireland from 1930-2004. EMAP statistics indicate that a proportionally high amount of excavations were undertaken by both governmental and academic institutions in Northern Ireland from the 1930's to 1980's. This was particularly the case for the years between 1950-80's when a number of important research excavations (e.g. Archaeological Survey of Down) and farm improvement schemes were undertaken in Northern Ireland. The amount of excavations in these intervening decades (1930-1980) slowly but consistently increased.

The statistics also shows that there has been a sizeable increase in excavations from the 1980's but particularly for the early years in the twenty first century reflecting both the introduction of tighter legislation concerning excavation licensing on and particularly in close proximity to early medieval sites. This is particularly the case for the Republic of Ireland where stringent planning legislation and the 'Celtic Tiger' phenomenon have transformed the amount of excavations being undertaken annually across the country. The figures for Northern Ireland however only exhibit a very gradual increase, imitating the pattern from earlier decades. The economic boom in the Republic of Ireland in the latter years of the 1990's and early 2000's is likely to have played a fundamental part in this development. Equally the application of different planning legislation on and in close proximity to early medieval monuments as well as differences in the number and type of protected monuments in both jurisdictions is likely to have played a fundamental role in the disproportionate number of excavations in the Republic of Ireland in recent years. Many of these excavations in recent years in the Republic of Ireland were of no archaeological significance and were undertaken as part of pre-development testing in close proximity to early medieval monuments.

Table 2:4: Excavations Annually 1930-2004 in Republic of Ireland and Northern Ireland

	Republic of Ireland	**Northern Ireland**	**Total**	**%**
1930-1939	32	11	43	26%
1940-1949	25	9	34	26%
1950-1959	36	28	64	44%
1960-1969	28	21	49	43%
1970-1979	60	54	114	47%
1980-1989	129	56	185	30%
1990-1999	740	68	808	8%
2000-2004	1653	80	1733	5%
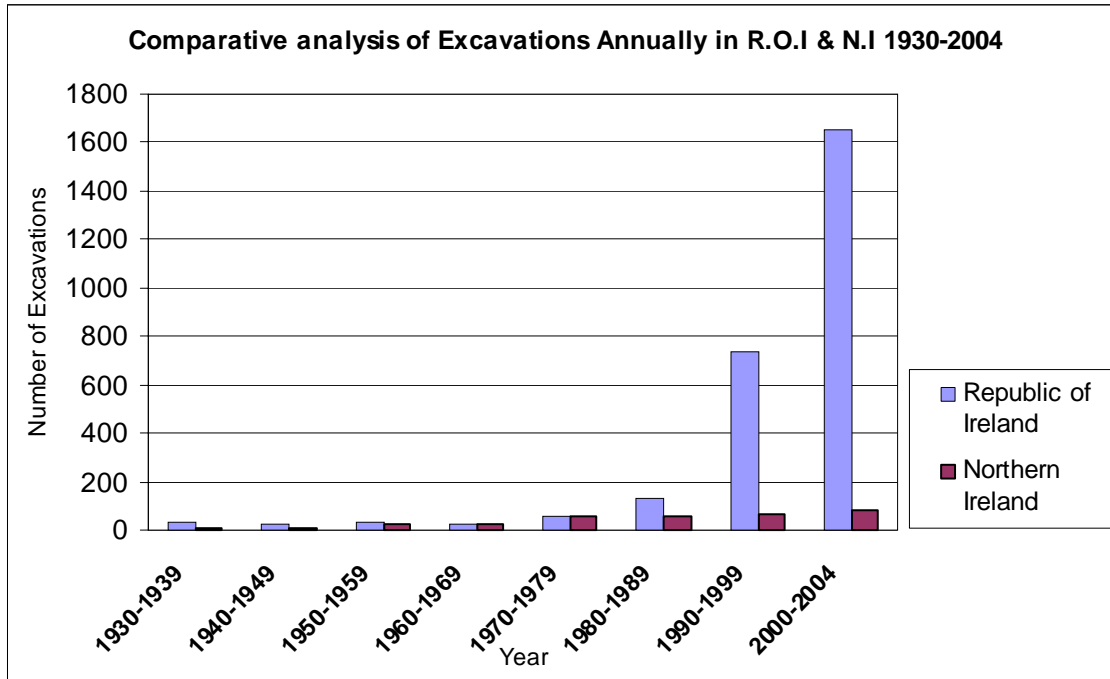
Figure 2:5: Excavations Annually 1930-2004 in R.o.I. and Northern Ireland

Significance of Excavated Early Medieval 'Sites'

Excavations in the EMAP database are currently on described in terms of whether they are or are not of early medieval archaeological significance. As demonstrated above, a total of 51% of excavations were of no archaeological significance. When all excavations can be comprehensively consulted, it is intended to grade all excavations in terms of the character of their early medieval archaeological significance. The significance of the EMAP defined 'sites' have however been graded in terms of 'No Significance', 'Uncertain', 'General', 'Significant' & 'Highly Significant'. The criteria concerning how a site was described in terms of its archaeological significance is outlined in the methodology in the appendix.

Table 2:5: Early Medieval Significance of EMAP Site 1930-2004

Significance	Number	Percent
Uncertain	302	14
No Significance	1019	46
General	485	22
Significant	307	14
Highly Significant	95	4
Total	**2208**	**100**

Current statistics indicate 46% of excavated sites were of "no early medieval archaeological significance". The vast majority of this set of sites was undertaken as part of test excavation or monitoring works in close proximity to early medieval monuments such as ringforts, ecclesiastical sites. It is evident that testing and monitoring excavations are the principal excavation types that are proving to produce a result of "no archaeological significance" (See Figures 2:11 & 2:22 below). A high proportion of sites (14%) were classified as 'Uncertain'. These sites are of archaeological significance but it is often not clear if the archaeology was early medieval in date. Typical examples include ironworking or kilns sites which could conceivably date from the Iron Age to Post-Medieval period. Radiocarbon dates and detailed stratigraphical analysis of these excavated sites were still pending when their reports were

submitted to the excavations bulletin so it is hoped that future research may clarify whether some can be positively associated with the early medieval period.

22% or 485 excavated sites can be described as being of 'general' archaeological significance. The quality and quantity of these excavated early medieval evidence was somewhat limited at these sites. A typical example comprises a partially excavated ringfort which uncovered a small quantity of early medieval artefacts. It is interesting then, that only 18% of the sites within the database could be considered as significant or highly significant. This is encouraging as it shows that the 'crisis' in Irish archaeology viz. the non-publication of excavations is not as serious as suspected, and that a structured programme of research and publication could easily make a very significant contribution.

Early Medieval Significance of EMAP Sites 1930-2004

Legend:
- Uncertain
- No Significance
- General
- Significant
- Highly Significant

Values shown: 302, 14%; 1019, 46%; 485, 22%; 307, 14%; 95, 4%
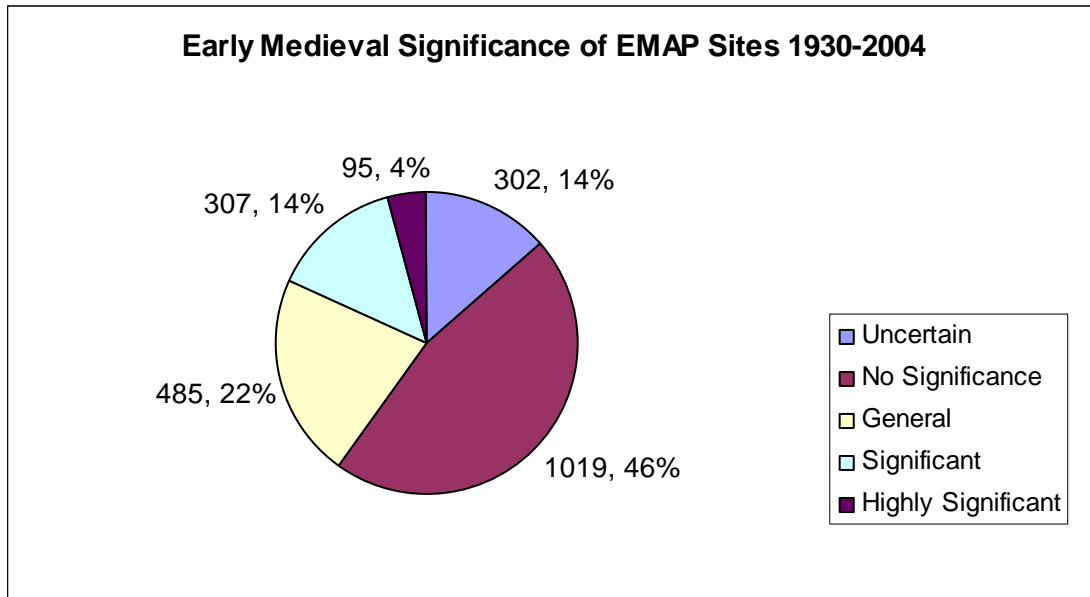
Figure 2:6: Early Medieval Significance of EMAP Sites 1930-2004

Significance of Sites per County

The 2,208 defined sites in the different counties were next analyzed in terms of their significance. Table 2:6 and Figures 2:7 & 2:8 illustrate the results.

Table 2:6: Significance of Excavated Early Medieval Sites Per County 1930-2004

County	Uncertain	No Significance	General	Significant	Highly Significant	County (Total)
Antrim	10	10	43	39	2	104
Armagh	0	2	11	6	1	20
Carlow	4	6	2	0	0	12
Cavan	1	29	5	0	0	35
Clare	19	50	16	9	2	96
Cork	27	105	40	27	4	203
Derry	2	4	13	4	2	25
Donegal	4	20	7	3	1	35
Down	2	10	33	16	4	65
Dublin	24	25	40	37	21	147
Fermanagh	0	6	6	5	0	17
Galway	14	50	15	12	2	93

County	Uncertain	No Significance	General	Significant	Highly Significant	County (Total)
Kerry	12	72	19	19	5	127
Kildare	17	47	12	11	2	89
Kilkenny	9	21	12	5	0	47
Laois	11	13	2	5	0	31
Leitrim	0	30	0	0	0	30
Limerick	24	48	14	10	3	99
Longford	1	14	4	0	1	20
Louth	9	42	36	17	4	108
Mayo	12	49	14	7	1	83
Meath	26	50	30	20	19	145
Monaghan	2	10	3	1	0	16
Offaly	3	19	10	5	2	39
Roscommon	6	65	6	4	1	82
Sligo	7	69	14	5	1	96
Tipperary	12	52	19	9	3	95
Tyrone	4	0	13	6	2	25
Waterford	10	21	15	13	4	63
Westmeath	5	39	20	4	7	75
Wexford	8	29	4	3	1	45
Wicklow	17	12	7	5	0	41
Total Site Significance	**302**	**1019**	**485**	**307**	**95**	**2208**

Table 2:6 above and Figures 2:7 & 2:8 below demonstrate that Northern Counties like Antrim, Armagh, Derry, Down, Fermanagh and Tyrone contained high percentages of sites described as 'general', 'significant' and 'Highly Significant'. A disproportionately high number of significant rescue and research early medieval excavations were undertaken from staff from Northern Ireland's Ancient Historic Monuments Branch, its successor the Historic Monuments Branch and the Archaeological Survey of Northern Ireland from the 1940's-1980's.

In the Republic of Ireland, large number of excavated 'sites' described as 'general', 'significant' and 'Highly Significant' were located in Waterford, Cork, Kerry, Limerick and Tipperary, Galway to the west and Dublin, Meath, Louth and Westmeath in Leinster. The northern Leinster counties of Dublin, Meath, Louth and Waterford in Munster contained high percentages of sites described as 'general', 'significant' and 'Highly Significant' in terms of their respective excavated totals, though not at the scale of their Northern counterparts.
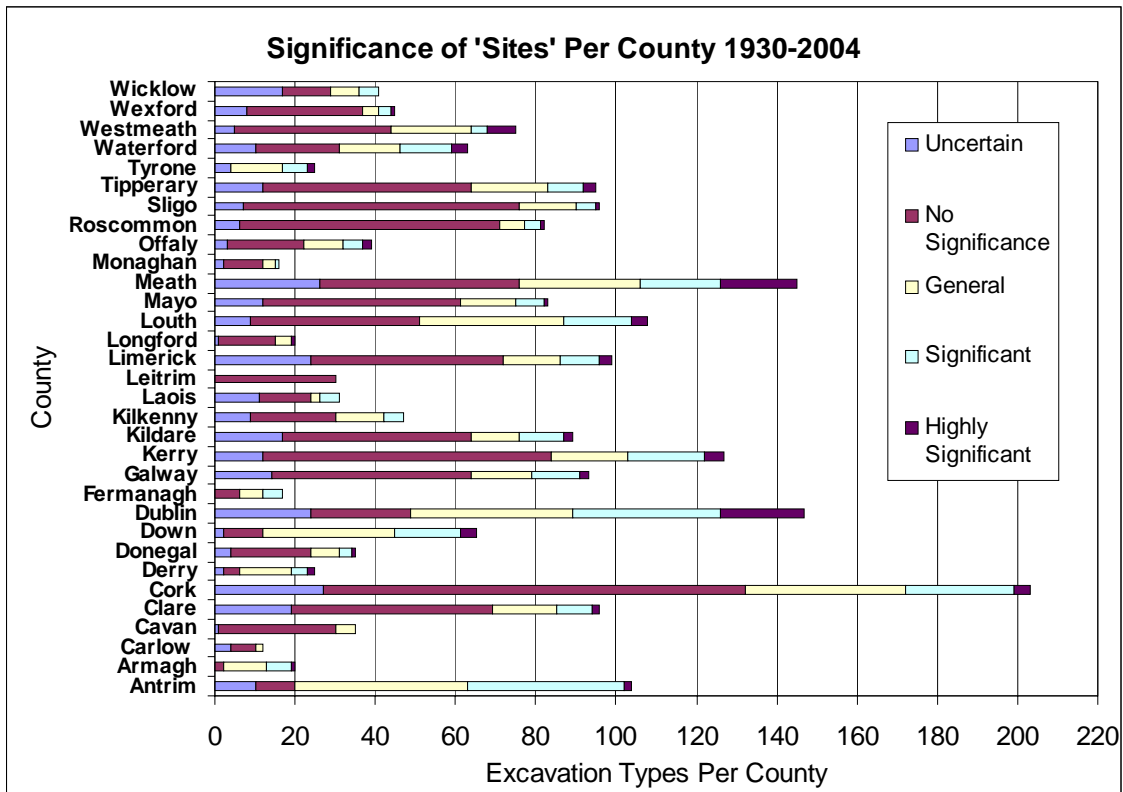
Figure 2:7: Early Medieval Significance of Excavated Sites Per County 1930-2004
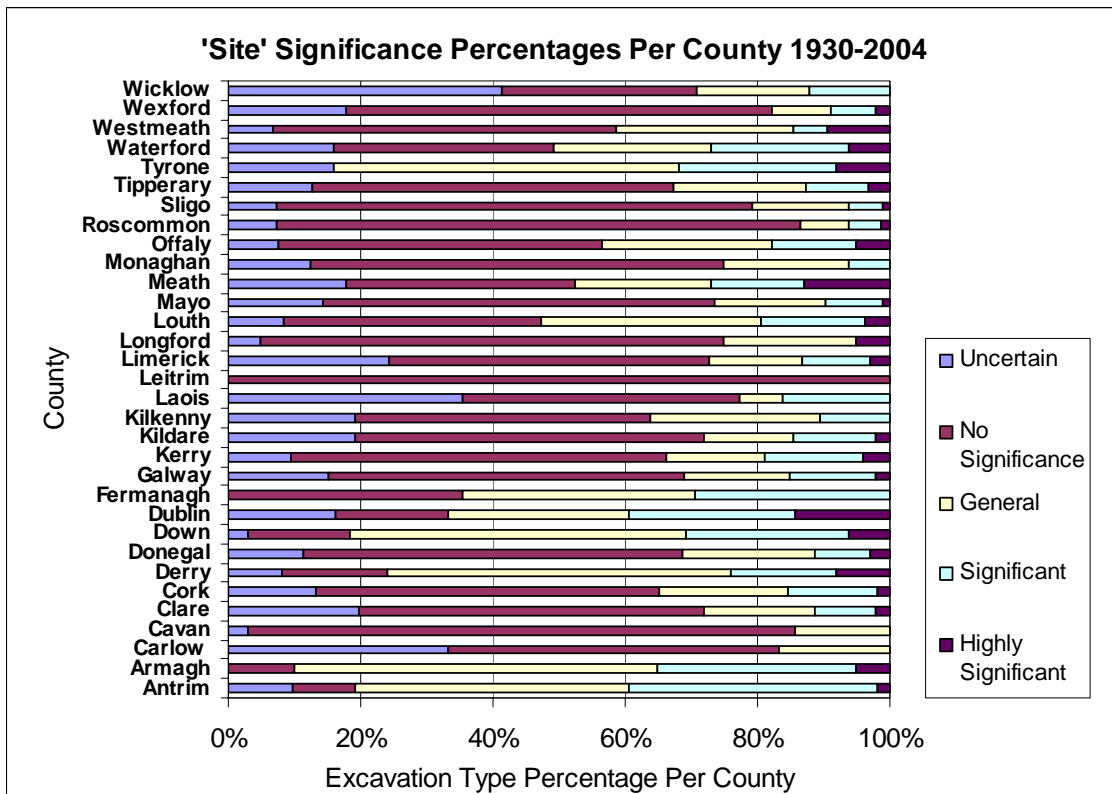
Figure 2:8: Significance Percentages of Excavated Sites Per County 1930-2004

It is evident however that counties in Northern Ireland contain a small percentage and number of excavated 'sites' of No Significance; a development which, as discussed above, may have been partially related to the application of different planning legislation, the scheduling and protection of archaeological monuments and the economic boom in the Republic of Ireland in recent years. In contrast, the number of excavations undertaken annually within counties from the Republic of Ireland in recent years have continued to surpass that of the figures from Northern Ireland; a development which has been intimately related to the surge in excavations of no archaeological in this jurisdiction.

It is instructive to note that counties across the west and northwest region of Ireland like Cavan, Leitrim, Donegal, Monaghan, Roscommon, Galway and Mayo have a high proportion of No significance sites. These counties have witnessed dramatic increases in the amount of excavations being undertaken annually (Figure 2:4 above) and it is evident that these excavations of No Significance are related to tighter legislation concerning development, particularly residential, in rural contexts in recent years.

Excavations Annually and Sites of Different Significance

Sites were graded in terms of Significance as described above. Excavations at EMAP defined 'sites' were not graded into categories of significance but were simply described as being of early medieval archaeological significance or not. The results from the graph below does not describe the amount of excavations of varying significance being undertaken annually. It does however describe figures for the amount of excavations being undertaken annually on EMAP designated 'Sites' of different Significance.

Figures 2:9 and 2:10 show that a high proportion of excavations were being undertaken on Sites of "High archaeological significance" in the mid and later decades of the twentieth century, particularly in the 1930's, 70's & 80's. The Harvard Archaeological expeditions undertook a number of important excavations in the 1930's at a number of early medieval sites including Ballinderry 1 & 2 and Cahercommaun Fort while Sean P. Ó Riordáin's, of UCC and latterly UCD undertook a number of significant excavations at Carraig Aille I & 2 & the Spectacles in Limerick in this period. Long term research excavation projects at Clogher, Co. Tyrone; Knowth, Co. Meath; Deer Park Farms, Co. Antrim; Lisleagh, Co. Cork; Iniscealtra, Co. Clare and Kilpatrick, Co. Westmeath from the 1970's also revealed vast quantities of archaeological evidence that transformed people's understandings of early medieval Ireland in this period.

These projects were also complemented by important rescue excavations undertaken both in advance of farm improvement schemes and urban redevelopment projects in the major cities from the 1960's to 1990's. Important excavations were undertaken on rural ringforts like Tully, Seacash, Ballyhenry, Dunsilly and Ballywee, Co. Antrim, Ballylessant, Crossnacreevy, Gransha and Rathmullan Lower, Co. Down, Big Glebe, Bowling Green, Co. Tipperary, Dunbell Big 6, Co. Kilkenny, Sluggary, Co. Limerick, Simonstown, Co. Meath, Millockstown, Co. Westmeath and Lisduggan North, Co. Cork. In contrast, few excavations of no archaeological significance were undertaken on or near early medieval sites in this period as excavations were either research or rescue focused.

Important urban redevelopment projects in the medieval cores of cities in the 1970's and 1980's also had the effect of revealing significant archaeological evidence in the Hiberno-Norse towns of Dublin and Waterford in particular as well as at ecclesiastical sites such as Armagh and Downpatrick, Co. Down. Excavations tended then to be research-driven and located on important archaeologically sensitive areas with the consequence that there were few excavations of no significance in this period.

The advent of stricter legislation protecting the archaeological heritage and the Celtic Tiger economic boom had the effect of shifting this relationship from one being formerly of a large amount of excavations being undertaken annually on significant sites towards a disproportionate number of excavations revealing no archaeological evidence on or near early

medieval sites in the 1990's. The advent of stricter legislation and the economic boom from the mid 1990's also had the effect of exposing new sets of archaeological evidence such as ironworking sites, kilns and burnt pits which were less easily identifiable and dateable than the previous typical site type (e.g. crannog, ringfort & ecclesiastical site). Potentially a significant number of these sites could be early medieval in date though fortunately this cannot be clearly established at the moment as many still await complete publication or lacked any datable archaeological finds or deposits. Future work by EMAP project will seek to resolve this 'uncertain' category.
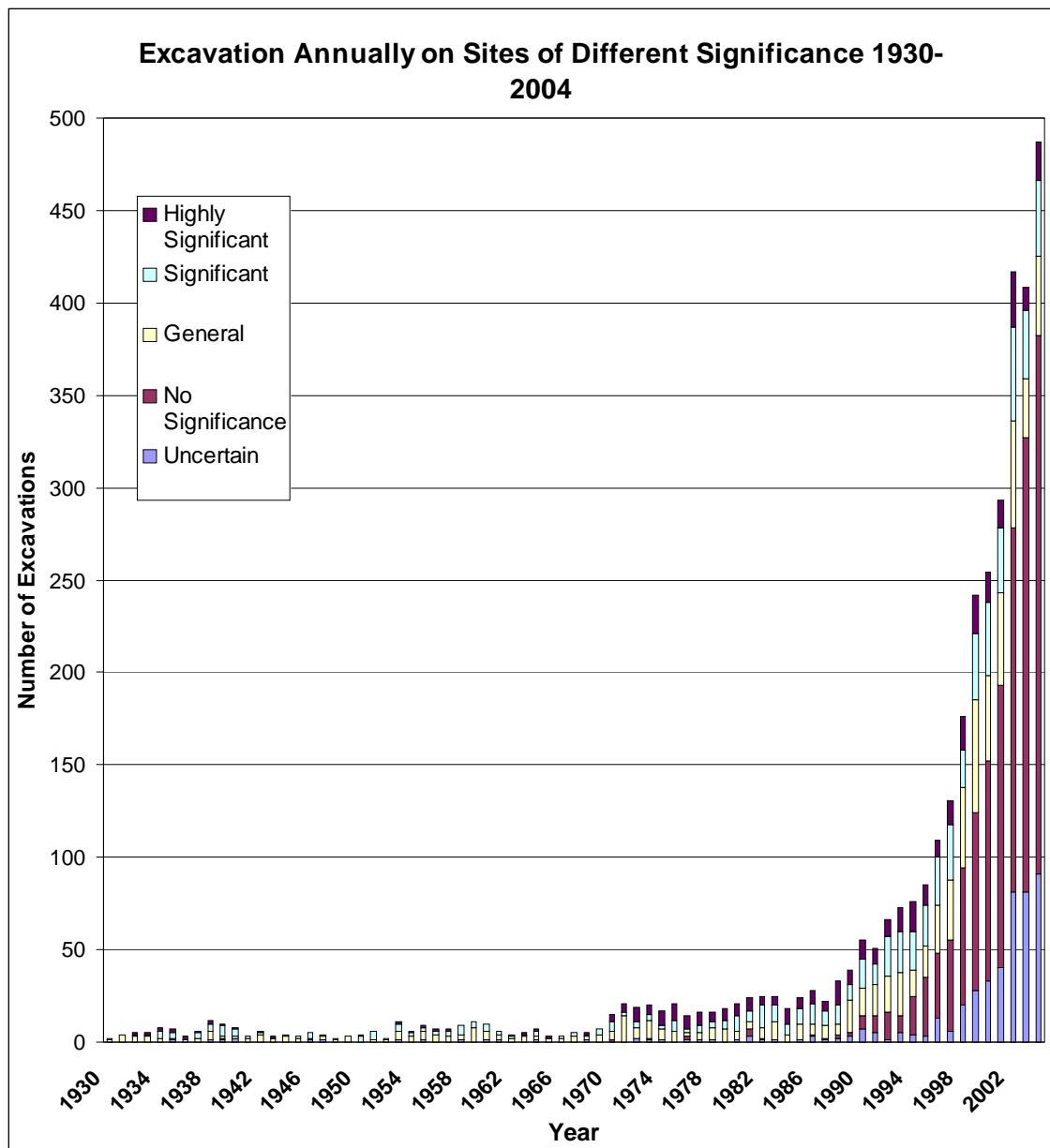
Figure 2:9: Excavations Annually on Sites of Different Significance 1930-2004

The figures from the percentage graph in Figure 2:10 below reveal the transforming character of archaeological excavations during this period. Excavations on 'significant' and 'highly significant' sites constituted between 30-70% of total excavations annually from the 1930's to early 1990's. This percentage gradually declined to 38/176 excavations (22%) in 1998, 50/293 (17%) in 2001 to 62/487 (13%) in 2004 though the number of excavations on significant and highly significant sites in these years was greater than year in the 1970's or 1980's. The graph also illustrates the growth in excavations at sites described as 'No Significance' from 1990 onwards. Excavations at 'No Significance' Sites constituted 197/417 or 47% of the total excavations in 2002 and 291/487 sites (60%) of excavations in 2004. Indeed Fig. X demonstrates that 2004 comprised a large number of test excavations in the proximity of early medieval monuments which revealed no archaeology of any significance. As is well known, there is then a strong relationship between the growth of testing and monitoring as forms of archaeological excavations and the increase in the number of excavations at or near site that are revealing no archaeological evidence. This is an issue that should perhaps be debated by professional archaeology in Ireland.
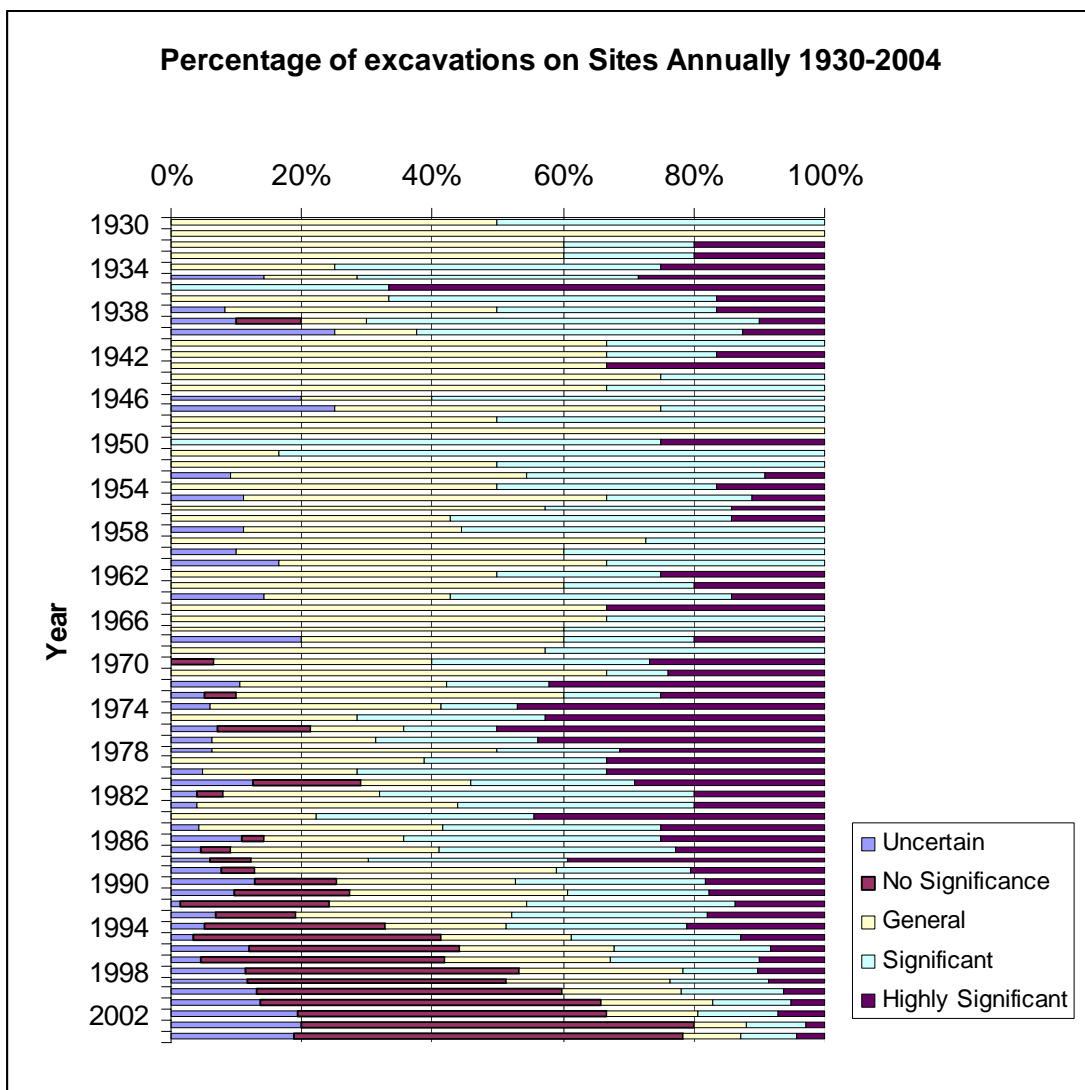
Figure 2:10: % of Excavations Annually on Sites of Different Significance 1930-2004

Excavation Type

There are 2,208 defined sites and 3,047 excavations from 1930-2004 within the EMAP database. Table 2:7 and Figure 2:11 illustrate the excavation types.

Table 2:7: Excavation Types 1930-2004

Excavation Type	Number	%
Conservation	119	4
Monitoring	607	20
Not Excavation	29	1
Rescue	775	25
Research	162	5
Testing	1353	45
Uncertain	2	0
Total	**3047**	**100**
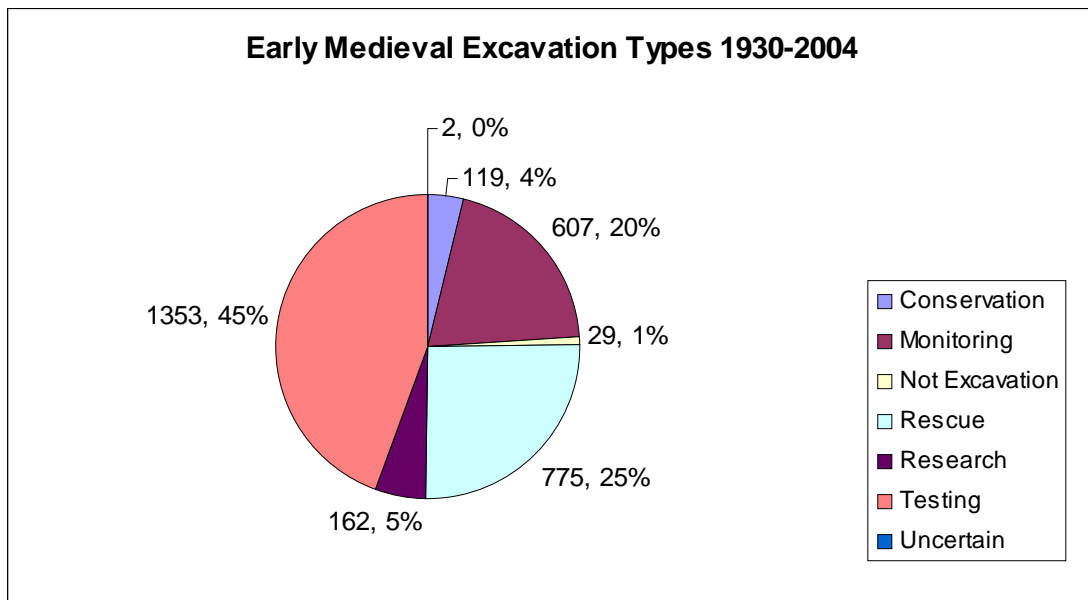
Figure 2:11: Excavation Types 1930-2004

The statistics indicate that testing was the most favourable form of archaeological investigation at or most commonly in close proximity to early medieval recorded monuments during the period. Rescue and monitoring type excavations followed it. The excavation bulletin reports as well as a range of published sources (e.g. journal articles) were the principal resource consulted for this survey. The type of excavation at or near these early medieval sites was not systematically recorded nor described in these sources. The figures for the excavation types above were also then partially a product of a subjective judgement by the EMAP team based on the written evidence in the consulted resources. It is evident then that there is undoubtedly a small error in the actual amount of excavation types described above. EMAP should, at a later stage in the project, be able to establish more accurate figures for the number of different excavation types that were undertaken on and near early medieval monuments and structures for this period.

Excavation Types Annually

It was decided to establish the amount of different excavation types undertaken annually from 1930-2004. As excavations can continue from year to year, these figures revealed the amount of the excavations types undertaken annually and *not* the number of issued

excavation types. The figures then total more than the 3,047 excavations whose types are listed and graphically represented immediately above. Non-destructive methods like geophysical survey or underwater diving for survey purposes (a licensed activity) which received excavation licenses were listed under the Non Excavation heading. Two excavations were of unknown status were excluded from the graph.
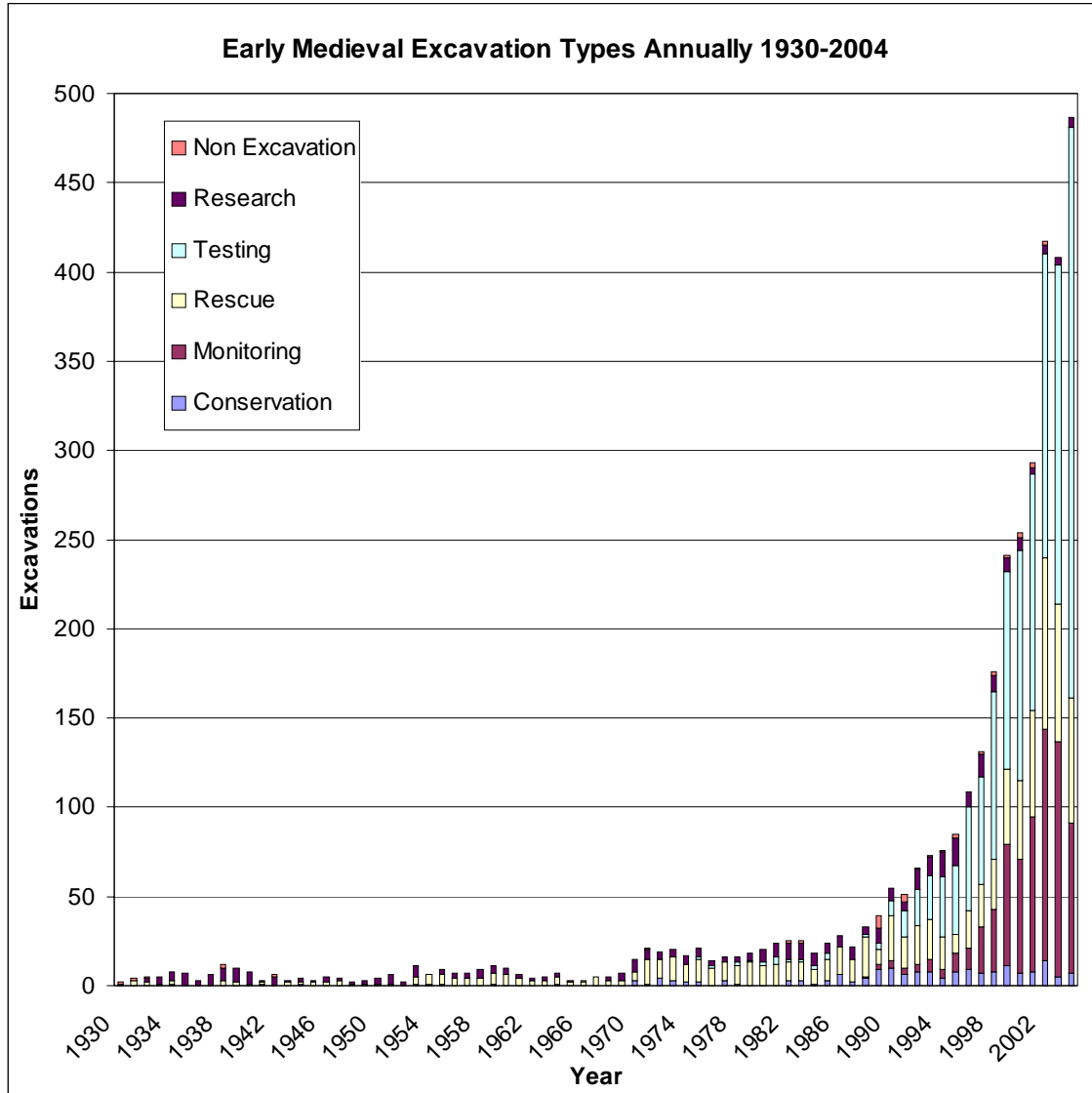
Figure 2:12: Excavation Types Annually 1930-2004

The results demonstrate a well known pattern in which research and rescue excavations were predominant throughout the period until in the 1990's till the introduction of new forms of archaeological investigation comprising testing and monitoring. These research and rescue excavations were generally undertaken by governmental bodies like the OPW in the Republic of Ireland; the Northern Ireland Ancient and latterly Historic Monuments Branch; the National Museum of Ireland and the Ulster Museum and by the university sector typically as long-term research projects. There was no tradition of testing or monitoring during this period as legislation did not demand these forms of excavation. When rescue excavations tended to occur, they were usually undertaken by government bodies, typically for agricultural reasons and farm improvement initiatives that from the 1970's were supported by EEC agricultural funding. Farm improvement schemes were particularly responsible for the large number of excavations on ringforts across the island but with an unusually high number in the North of Ireland. Conservation projects equally tended to be undertaken by governmental

organizations and were often ran as FAS employment schemes on ecclesiastical sites in particular. By the early 1990s, testing, monitoring and rescue excavations tended to increase in number - both due to the Valetta Convention on the Protection of the Archaeological Heritage (1992) and the surge in development-led projects. Testing excavation became the dominant form of excavation by 1994 reflecting the impact of stricter legislation. The surge has remained constant throughout the 1990's and 2000-2004 with Testing, Monitoring and Rescue excavations constituting the vast majority of excavations today.
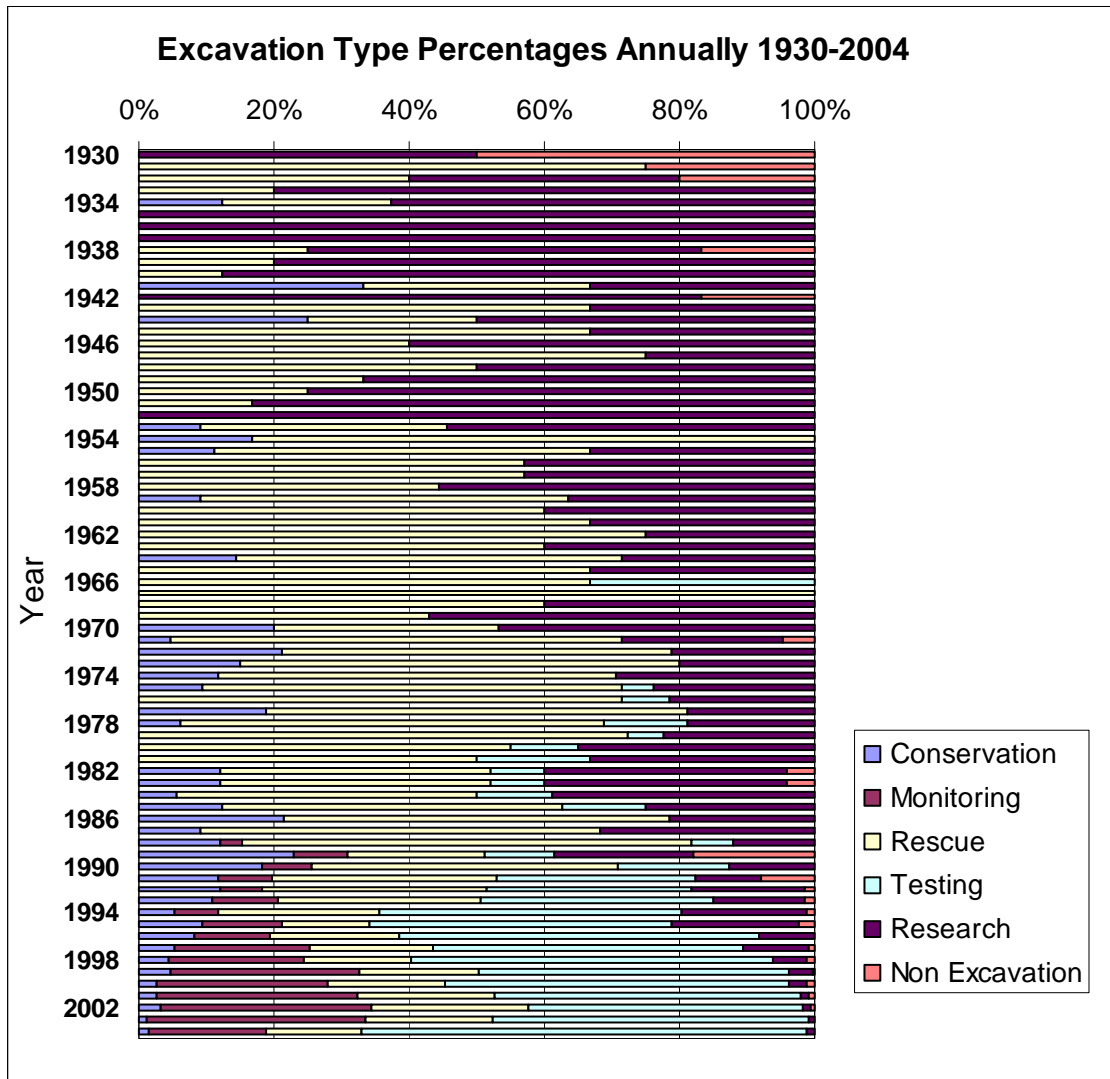
Figure 2:13: Excavation Type Percentages Annually 1930-2004

The percentage graph above demonstrates that research excavations constituted a high percentage of excavations undertaken annually in the mid twentieth century. The vast number of significant excavations undertaken by M.J. O'Kelly and Sean P. Ó Ríordáin were particularly important in this period. Though research excavations still play an important role in Irish archaeology, the number of this type of excavation has fallen to less than 1% of excavations at or near early medieval sites in 2004. This development does not suggest any decrease in research excavations undertaken annually but simply reflect the disproportionate amount of excavations undertaken in advance of development-led projects in more recent years. In fact the number of research projects has increased very slightly in recent years and perhaps reflects the emerging role of new centres for archaeology such as the Centre for Maritime Archaeology at the University of Ulster at Coleraine (UUC).

Excavation Types per County

Table 2:8 Figure 2:14 below demonstrate that the number of excavation types undertaken across the island was quite varied. It is evident that there have been fewer testing or monitoring excavations in Northern Ireland, perhaps reflecting the application of different planning legislation. In contrast these counties have had a high percentage of rescue excavations which were of valuable early medieval archaeological significance. It is also evident that western and north-western counties in the Republic of Ireland have a high proportion of pre-development testing. A number of other counties including Down, Antrim, Cork, Kerry and Westmeath have, in contrast, witnessed a high proportion of research excavations during this period.

Table 2:8: Excavation Types Per County 1930-2004

County	Conservation	Monitoring	Rescue	Testing	Research	Non Excavation	Uncertain	Total (County
Antrim	6	16	59	19	11	3	0	114
Armagh	0	4	14	9	3	6	0	36
Carlow	2	4	1	9	0	0	0	16
Cavan	0	12	2	23	2	0	0	39
Clare	8	27	35	56	5	0	0	131
Cork	10	37	58	112	16	0	0	233
Derry	3	4	18	9	5	0	0	39
Donegal	0	13	6	26	2	0	0	47
Down	3	10	36	12	23	0	0	84
Dublin	6	45	94	128	4	0	0	277
Fermanagh	1	3	6	4	3	1	0	18
Galway	14	17	17	55	7	1	0	111
Kerry	11	35	27	64	17	0	0	154
Kildare	6	37	32	90	3	0	0	168
Kilkenny	5	14	18	35	1	0	1	74
Laois	2	7	13	14	1	0	0	37
Leitrim	0	14	0	22	0	0	0	36
Limerick	3	41	29	43	12	1	0	129
Longford	0	2	2	13	3	2	0	22
Louth	2	32	43	86	1	6	0	170
Mayo	5	21	15	57	5	0	0	103
Meath	7	37	70	86	6	0	0	206
Monaghan	0	4	3	15	0	0	0	22
Offaly	2	15	22	35	2	2	0	78
Roscommon	7	15	4	77	5	2	0	110
Sligo	1	25	19	70	3	0	0	118
Tipperary	6	40	31	40	4	1	0	122
Tyrone	1	2	12	4	5	3	1	28
Waterford	4	13	35	35	3	0	0	90
Westmeath	1	26	24	41	7	1	0	100
Wexford	1	18	10	46	0	0	0	75
Wicklow	2	17	20	18	3	0	0	60
Total (Exc. Type)	**119**	**607**	**775**	**1353**	**162**	**29**	**2**	**3047**
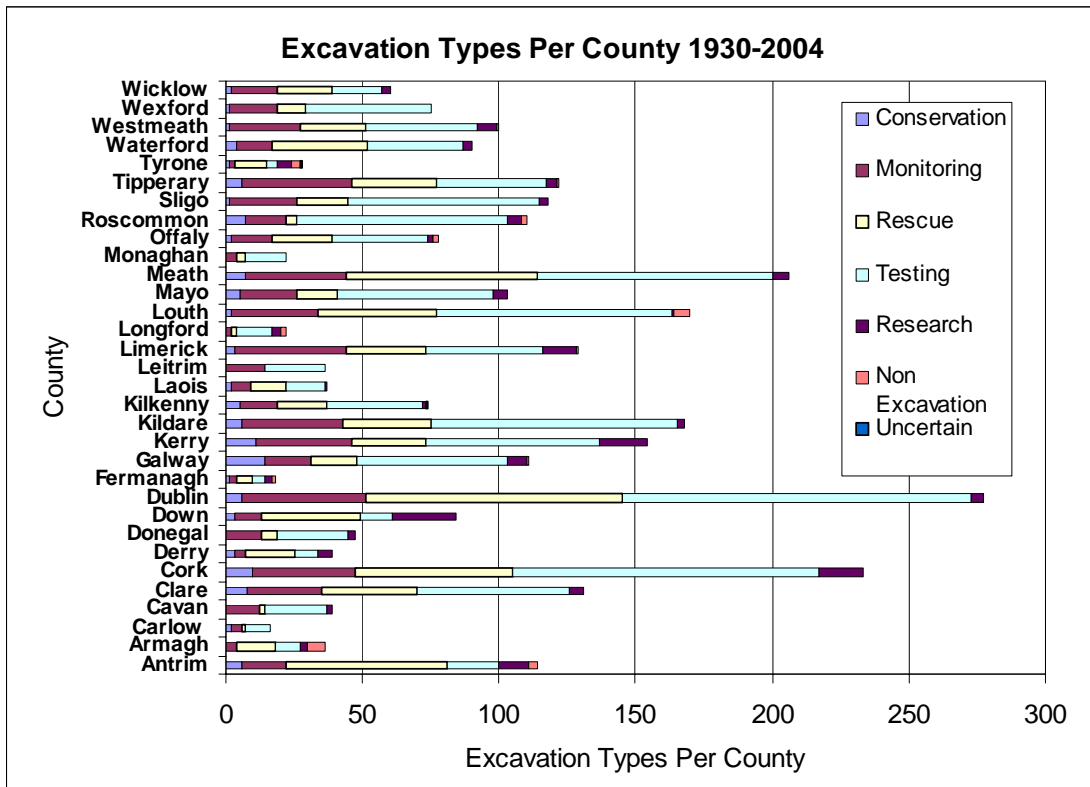
Figure 2:14: Excavation Types Per County 1930-2004
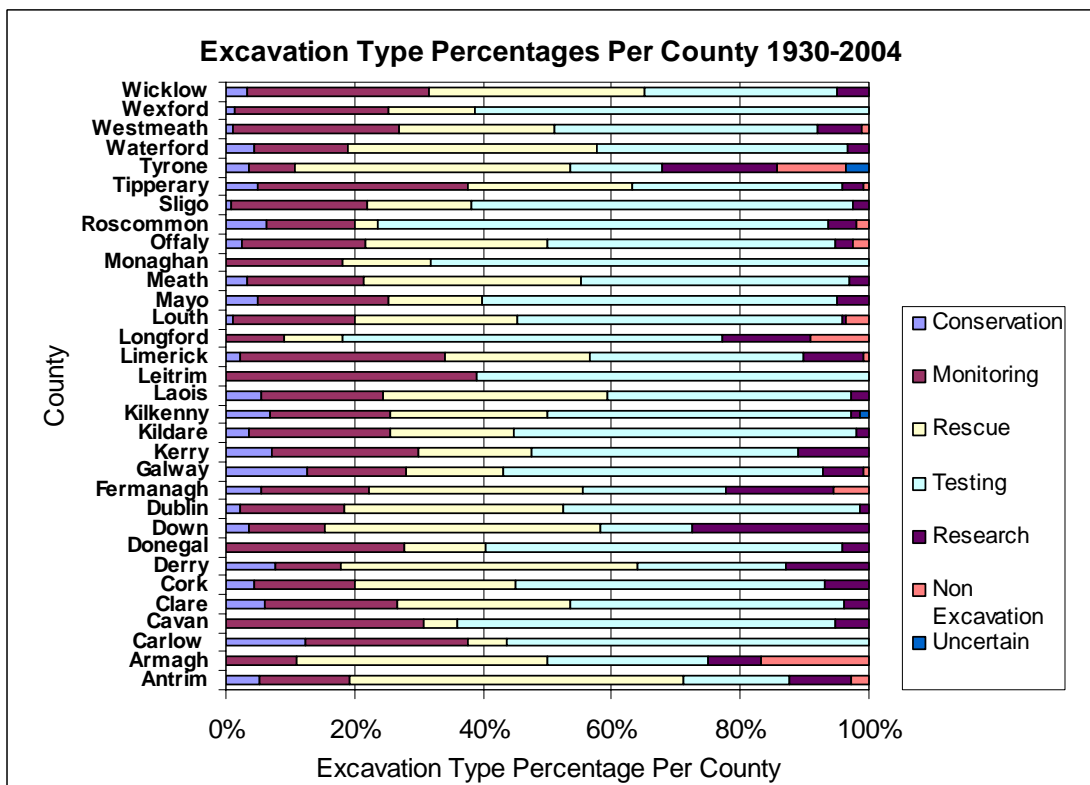
Figure 2:15: Excavation Type Percentages Per County 1930-2004

Archaeological Institutions and Early Medieval Excavations

Different governmental, academic and commercial organizations have been responsible for these excavations from 1930-2004. The number of excavations undertaken annually by different governmental, academic and commercial organizations was first established. These figures do not describe the number of excavations associated with these particular institutions but highlight the number of excavations undertaken annually by these different groups (excavations can continue for a number of years).

Table 2:9: Excavations Annually Per Archaeological Institution 1930-2004

Year	University	Government	Commercial		Year	University	Government	Commercial
1930	1	0	0	-	1968	2	3	0
1931	1	1	0	-	1969	3	4	0
1932	3	0	0	-	1970	7	8	0
1933	2	0	0	-	1971	7	14	0
1934	6	2	0	-	1972	5	14	0
1935	6	1	0	-	1973	6	14	0
1936	3	0	0	-	1974	6	11	0
1937	5	1	0	-	1975	7	14	0
1938	8	2	0	-	1976	4	10	0
1939	6	1	0	-	1977	5	11	0
1940	5	3	0	-	1978	1	15	0
1941	1	2	0	-	1979	3	14	0
1942	5	0	0	-	1980	4	16	0
1943	2	1	0	-	1981	10	12	0
1944	0	2	0	-	1982	7	15	2
1945	3	0	0	-	1983	5	19	0
1946	3	2	0	-	1984	5	11	1
1947	2	2	0	-	1985	3	18	2
1948	2	0	0	-	1986	4	18	5
1949	3	0	0	-	1987	5	15	2
1950	4	0	0	-	1988	4	17	11
1951	3	3	0	-	1989	8	22	9
1952	1	1	0	-	1990	8	32	15
1953	4	6	0	-	1991	9	26	16
1954	2	4	0	-	1992	11	30	25
1955	2	7	0	-	1993	12	31	30
1956	2	5	0	-	1994	13	22	41
1957	2	4	0	-	1995	11	19	55
1958	7	2	0	-	1996	8	17	84
1959	1	8	0	-	1997	14	20	97
1960	4	6	0	-	1998	13	19	144
1961	1	5	0	-	1999	15	14	212
1962	1	3	0	-	2000	9	13	230
1963	1	3	0	-	2001	16	13	262
1964	1	6	0	-	2002	19	17	381
1965	2	1	0	-	2003	19	9	380
1966	0	3	0	-	2004	16	15	455
1967	3	2	0	-				
Total	108	89			Total	304	592	2459
Overall Total	**412**	**681**	**2459**					

The figures clearly reveal that the rate of excavations undertaken by both university and governmental companies remained relatively constant though were generally slightly greater for the post 1970 years than those previously. It also clearly illustrates the huge increase in excavations undertaken annually by commercial companies. The number of excavations undertaken annually by the Universities amounted to 412 with those by government and commercial organizations numbering 681 and 2459 respectively. The institution associated with a very small number of excavations could not be established with a further small collection being affiliated directly to none of these institutions. The figures for the universities included

that of the Archaeological Services Unit in UCC, QUB centre for Archaeological fieldwork and the UCD Archaeological Wetland Unit.
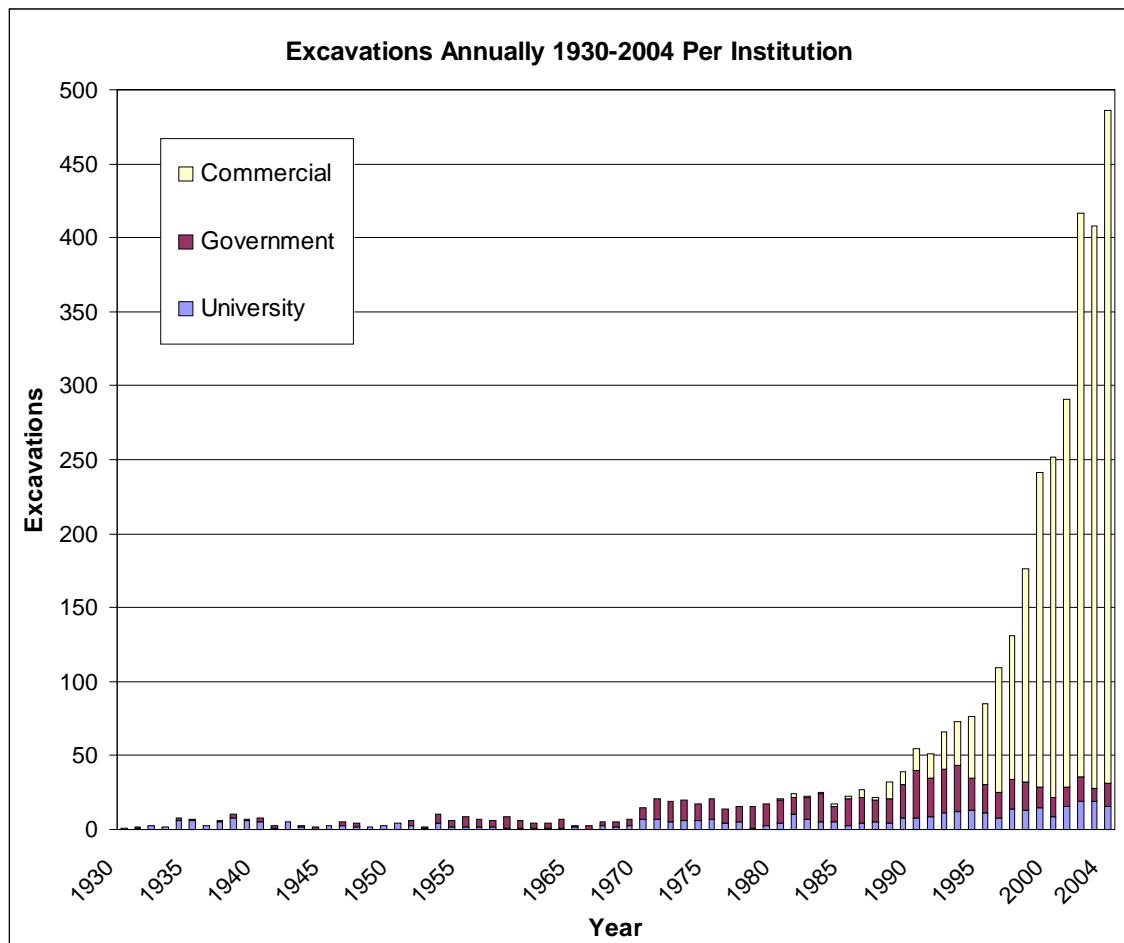
Figure 2:16: Excavations Annually Per Archaeological Institution 1930-2004

University Excavations and associated Excavations

EMAP has reviewed the number of early medieval excavation issued to university, governmental and commercial organizations from 1930-2004. It has established that the University College Cork has accounted for the largest number of Irish early medieval excavations 1930-2004 by any university body. A significant number of these excavations were undertaken by staff from the Archaeological Services Unit, based in UCC accounting for 72/138 licenses or 65/127 sites). However it is worth noticing that a sizeable remainder (66 licenses & 62 Sites) were also undertaken by UCC staff principally as part of research excavations by staff through the decades. The Dept. of Archaeology (now UCD School of Archaeology) at University College Dublin (UCD) undertook in total 31 excavations at 29 sites. Of these, the UCD-based and National Monuments service-funded Irish Archaeological Wetland Unit (IAWU), undertook 9 excavations at 9 early medieval wetland archaeology sites. Staff at Queen's University Belfast and its associated Centre for Archaeological fieldwork conducted 49 excavations at 43 sites. The majority were undertaken as part of research excavations through a small number (10 excavations at 9 sites) in recent years were undertaken by the affiliated Centre for Archaeological fieldwork. The Dept. of Archaeology at University College Galway (then UCG, now NUIG) undertook 11 excavations at 11 sites. Excavations by other Irish Universities included five excavations by University of Ulster and its associated Centre for Maritime Archaeology at 3 sites, one excavation undertaken by Leo Swan then of St. Patrick's College, Drumcondra at Corbetstown in Westmeath and one excavation by Prof. Terry Barry of Trinity College Dublin at Dunbeg Promontory Fort, Co. Kerry. Finally, a growing corpus of foreign based Universities has also undertaken excavations at early medieval sites from 1930-2004.

Five excavations were conducted by Hugh O'Neill Hencken at five important early medieval sites as part of the 1930's Harvard Archaeological Expeditions to Ireland. Staff from a range of other universities including those of Glasgow, Birmingham, York, Manchester and Cambridge from Britain, Stockholm and Uppsala from Sweden and Cornell University, Ithaca (New York), City University of New York (CUNY), University of California (Berkeley) and University of Pennsylvania have undertaken a number of other important investigations at early medieval Irish sites.

Table 2:10: Excavation and Sites Excavated Per University unit 1930-2004

University	No. of Excavations	No. of Excavated Sites
City University of New York	1	1
Harvard University	5	5
Queen's University Belfast	49	43
St. Patrick's College Drumcondra	1	1
Trinity College Dublin	1	1
Unidentified University	1	1
University College Cork	138	127
University College Dublin	31	29
University College Galway	11	11
University of Bermingham	3	3
University of California, Berkeley	3	3
University of Cambridge	1	1
University of Glasgow	7	7
University of Ithaca, Cornell	1	1
University of Manchester	2	1
University of Pennsylvania	1	1
University of Stockholm	1	1
University of Uppsala	1	1
University of York	1	1
University Ulster	5	3
Total	**264**	**242**

The EMAP survey revealed that approximately 242 sites containing early medieval and potential early medieval evidence has been excavated by archaeologists in the university sector, of which 264 excavation licenses were issued for this purpose. The number of 'season's of excavations undertaken by the University sector amounted however to 412 (See Table 2:9) indicating that a significant number of these excavations were issued for long-term research projects, as were the case at George Eogan UCD excavations at Knowth, Co. Meath or Mick Monk's UCC investigations at Lisleagh ringfort, Co. Cork.

State-funded Excavations and associated Excavations

EMAP established that 444 sites were excavated by state or governmental organizations, with a total of 497 excavations/excavation licenses issued for this purpose. A proportionally high amount of excavations have been undertaken by the Northern Ireland state bodies at early medieval site during this period. Many of these were subsequently published in UJA and other journals.

Table 2:11: No. of Excavations and Excavated Sites Per Government Body 1930-2004

Government Organisation	No. of Excavation	No. Exc. Sites
Archaeological Survey of Northern Ireland	20	20
Birmingham Museum	1	1
British Museum	1	1
County Council/Corporation Sponsored Excavation	59	46
County Museums	8	8
Discovery Programme	11	11
N.I. Ancient Monuments Branch	14	14
N.I. Environment & Heritage Service, Belfast	15	13
N.I. Historic Monuments Branch	103	91
R.O.I. CPW/OPW	128	108
R.O.I. National Monuments and Historic Properties, Dúchas	39	36
R.O.I. National Museum of Ireland	82	81
Ulster Museum	15	13
Urban Archaeological Survey of Ireland	1	1
Total	**497**	**444**

The number of excavations undertaken annually by different government bodies amounted to 681 for the years between 1930-2004. The number of excavation issued and undertaken for the same time frame was somewhat smaller at 497 indicating also that a sizeable number of these excavations were undertaken over a number of years.

Commercial Excavations and associated Excavation Licenses

However, as is well known (see Fig. XXX above), the great majority of the archaeological excavations undertaken on or near potential early medieval sites or monuments in 1930-2004, were carried out by commercial archaeological companies and consultancies. Beginning in the early 1990s, both urban development and rural infrastructural development begin in earnest, as the Irish economy began to be transformed. Archaeological companies were being established (although some, such as Valerie J. Keeley Ltd, Margaret Gowen & Co Ltd and Archaeological Development Services were companies already operating at the time) and these began to carry out more and more excavations as part of mitigation of archaeological disturbance as required by the planning process. By the late 1990s, these developments were in full flood, codes of practice were being established with the NRA, Bord Gáis and other state agencies and a growing number of commercial archaeological companies and individuals were active in the field. By 2002, Irish archaeological practice had been utterly transformed.

The situation in Northern Ireland was not dissimilar to that in the Republic of Ireland, although the impact of the Valletta Convention was less immediate than that experienced in the Republic. This was partly because Northern Ireland did not fully benefit from the economic expansion of the 'Celtic Tiger', and also because the 'Troubles' (and their immediate aftermath) were serious brakes on internal investment. Although companies such as Archaeological Development Services Ltd and Northern Archaeological Consulting had been in operation in Northern Ireland since the mid-1990s, large-scale commercial excavations only really occurred in the late-1990s and early-2000s. These companies still tend to dominate the commercial sector in Northern Ireland - although Gahan & Long established themselves by the mid-2000s.

Table 2:12 below comprises the number of excavation licenses in ascending order associated with different commercial archaeological companies from 1930-2004. In a number of rare cases, two companies appear to have been associated with the same excavation license and in these cases, a number was added to both companies. The figures below therefore do not reflect then an accurate number of excavation licenses issued but the number of excavation licenses associated with different companies.

Table 2:12: Excavations undertaken Per Commercial Company 1930-2004

Commercial Company	No. of Exc.	-	Commercial Company	No. of Exc.
Achill Archaeological Summer School	1	-	Headland Archaeology	16
AOC Archaeology Group	1	-	Tobar Archaeological Services	16
Archaeological Diving Company	1	-	Archaeology Company	18
Archaeology Underwater Ltd.	1	-	TVAS Ireland	19
Carlingford Lough Heritage Trust	1	-	Stafford McLoughlin Archaeology	20
CFA Archaeology, East Lothian	1	-	Archaeological Projects	23
Dagda Archaeological Projects	1	-	Northern Archaeological Consultancy	29
Dublin Archaeological Research Team	1	-	Archaeological Consultancy Ltd.	35
GeoArc	1	-	Arch-Tech	37
Gregory Consultant Archaeology Ltd	1	-	Moore Arch. and Environ. Services	40
Insight Archaeology	1	-	Judith Carroll	42
John Purcell Archaeological Consultancy	1	-	Dominic Delany	46
Neil O'Flanagan	1	-	CRDS	49
Roscrea Archaeological Survey Team	1	-	Oranmore Arch. Services Unit	54
South Eastern Archaeology	1	-	Aegis Archaeology	65
AML Archaeology	2	-	Mary Henry Archaeological Services	65
ArchCor	2	-	IAC	66
Barrow Archaeological Services	2	-	Sheila Lane	76
IUART	2	-	Valerie J Keeley	110
ArchaeoGrafix	3	-	Eachtra	115
GAC Ltd.	3	-	North West Archaeological Services	115
Kilkenny Archaeology	5	-	ADS	187
Byrne Mullins & Associates	6	-	ACS	224
John Channing	9	-	Margaret Gowen	228
National Archaeological Services, Ard Solas	9	-	Freelance	520
Total	**2273**			

The principal single archaeological companies responsible for excavations of early medieval sites are:
- Margaret Gowen (228 excavations)
- ACS (224 excavations)
- ADS (187 excavations)
- Eachtra (115 excavations)
- Valerie J Keeley Ltd (110 excavations)

Undoubtedly, these company's archives and expert archaeologists comprise potentially the greatest resource for research and publication on early medieval archaeology.

However, it is interesting that 'Freelance' excavations (i.e. completed by site directors not explicitly linked with an institution or company) were in fact responsible for the most excavations undertaken. These excavations typically involved testing near or on an archaeological monument and rarely revealed any early medieval archaeology of any significance. Some of these freelance directors have formed individual owned companies (e.g. North West Archaeological Services) and have undertaken extensive testing, particularly in their own particularly counties or regions. The total number of excavation licenses associated with different commercial companies then amounted to 2,273.

The provisional EMAP survey then identified that
- 264 excavation licenses (9%) associated with Universities
- 497 excavation licenses (16%) associated with government bodies
- 2,273 excavations (75%) associated with commercial companies.
- Unidentified (1%)

These numbers total 3,034 and refer to the number of <u>excavation licenses</u> associated with different university, government and commercial bodies. The body responsible for a further 13 excavation licenses could also not be established or belonged to miscellaneous groups.

Schemes and Infrastructural Projects

The above graphs have illustrated the changing character and scale of excavations and role of different archaeological groups across the island from 1930-2004. To further comprehend the changing distribution and character of excavations across the island, it is necessary to consider the role of development-led schemes and projects within these trends. There are currently 2,208 sites and 3,047 accompanying excavations within the database. A total of 2,575 or 84% of licenses issued for excavations on or near early medieval sites or structures from 1930-2004 were in advance of infrastructural, development and rural schemes/projects.

Table 2:13: Excavations along Schemes and Projects 1930-2004

Scheme/Project	Number of Excavation	%
Commercial Development	669	22%
Drainage/Dredging Scheme	31	1%
Electrical	27	1%
Farm Improvement	85	3%
Gas Scheme	98	3%
Peat Production	23	1%
Quarry/Mine/Landfill	73	2%
Residential Development	988	32%
Road Scheme	420	14%
Sewerage & Water Supply	131	4%
Telecommunications & Wind Development	17	1%
Tram & Rail	4	0%
Unidentified Service Pipeline	9	0%
Total Exc. Licenses	*2575*	*84%*
Other Excavation Reasons		
None	412	14%
Uncertain	60	2%
Total Exc. Licenses	*472*	*16%*
Total Exc. Licenses	**3,047**	**100%**

Residential developments were responsible for 998 (32%) of the total excavations within the database. It was followed by 669 (22%) excavations in advance of commercial developments (Shop extensions, Industrial Units etc.). The extensive road scheme infrastructural developments (420 or 14%) undertaken principally by the NRA in the Republic of Ireland have also been a major force behind the boom in archaeological investigations in recent years.

2,575 excavations were issued in advance of schemes or projects from 1930-2004. The remaining 472 excavation licenses were issued for a number of different reasons. The heading None (412 or 14%) referred to those which were issued for conservation or research purposes as well as other miscellaneous forms of excavation (cemetery extensions, government employment initiatives or excavations in advance of coastal erosions or sporting developments e.g. golf courses) which were not part of a development scheme or any of the headings listed above. The reasons why the remaining 60 excavations (2%) were undertaken were not established and will require further investigation.
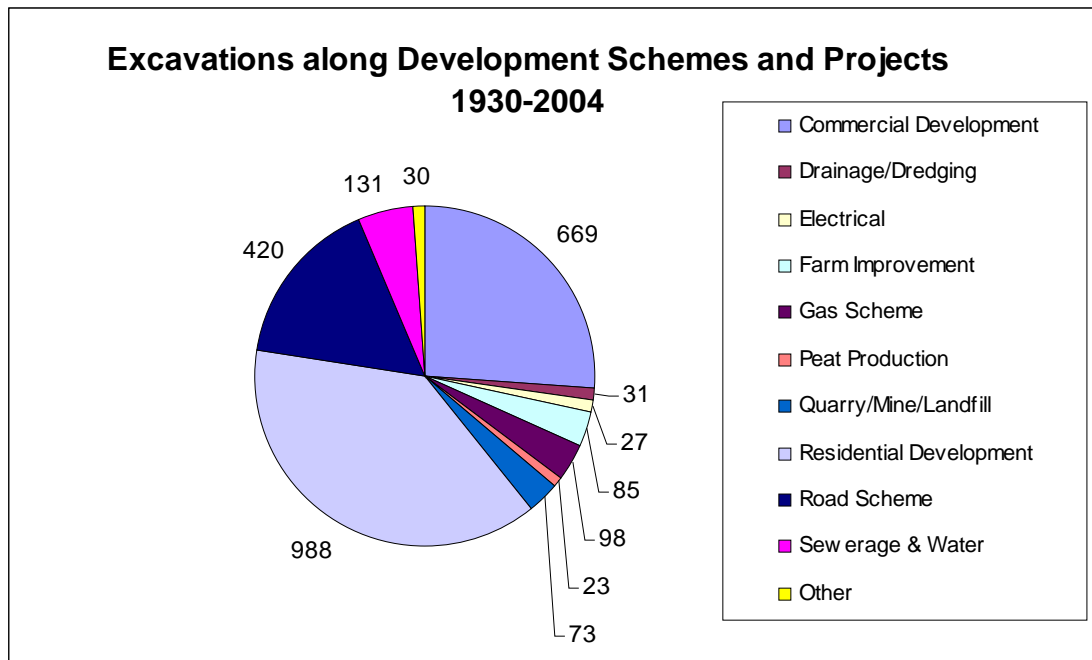
Figure 2:17: Excavations along Schemes and Projects 1930-2004

Significance of Sites in which excavations were undertaken along Schemes/Projects

The database, as described above, graded excavated 'sites' in terms of the archaeological significance uncovered during the excavation(s) at that particular site. The criteria used to interpret the significance of a site are outlined in the methodology. The individual excavation licenses were not graded in terms of their archaeological significance. At this stage of the project, the EMAP database can only appraise the archaeological 'significance' of excavated sites in which excavations were undertaken/issued for different schemes and Projects.

Table 2:14: Significance of Sites excavated along Schemes and Projects 1930-2004

Scheme/Project	Uncertain	No Significance	General	Significant	Highly Significant	Total
Development	72	281	127	117	72	669
Drainage/Dredging	5	7	13	6	0	31
Electrical	6	16	1	4	0	27
Farm Improvement	4	5	49	22	5	85
Gas Scheme	38	19	16	13	12	98
Peat Production	1	0	14	8	0	23
Quarry/Mine/Landfill	15	16	23	14	5	73
Res. Development	76	731	90	69	22	988
Road Scheme	142	65	110	69	34	420
Sewerage/Water	24	70	30	6	1	131
Total (Significance Type)	**383**	**1210**	**473**	**328**	**151**	**2545**
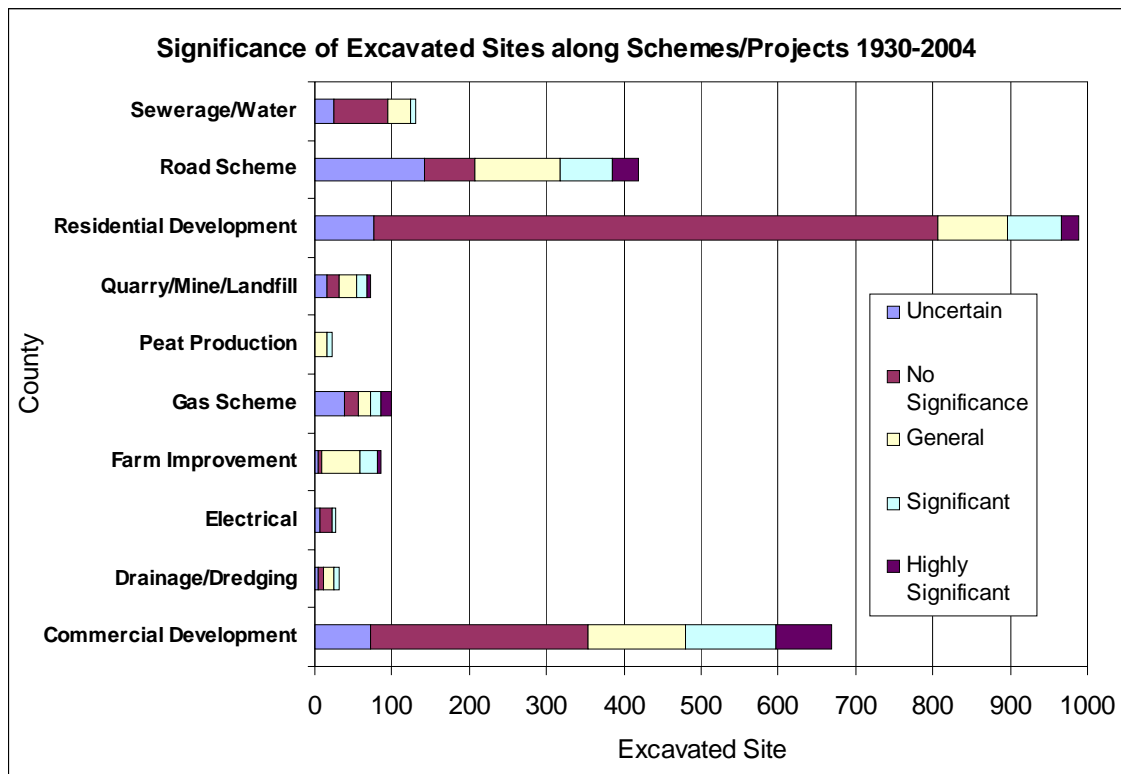
Figure 2:18: Significance of Sites excavated along Schemes & Projects 1930-2004

Some interesting patterns do emerge from the data gathered. It is instructive to note that excavations in advance of residential developments had a tendency to be described as Sites of 'No archaeological Significance'. It was found that these excavations were usually undertaken near an early medieval monument (e.g. ringfort) in advance of the construction of a dwelling house. Excavations in advance of large commercial/infrastructural developments and road schemes tended to reveal a higher proportion of important, highly important and significant sites. This was likely due to the scale of excavations undertaken along these projects. It was also likely due to the fact that excavations tended to be undertaken on early medieval monuments or areas with the intention of complete excavation in contrast to testing excavations being undertaken near an early medieval monument to comply with planning legislation for an isolated dwelling.

Both farm improvement schemes and excavations in advance of quarry/mining or landfill activities also contained a higher proportion of sites of importance. These excavations were typically undertaken in the mid-late twentieth century, often particularly in the 1970's/80's as part of government supported EEC initiatives. It is also instructive to note that sites excavated along road and Gas schemes projects contained a higher proportion of sites described at this stage as 'Uncertain'. This set of excavations moved beyond the boundaries of the traditional early medieval site type (ringforts, souterrains, crannogs and churches) and into the landscape uncovering, as discussed above, a whole new and less readily dateable set of early medieval archaeological evidence including ironworking hearths and pits, field systems and cereal-drying kilns. The date of these sites cannot be completely established at the present as many still await complete publication or lack any diagnostic archaeological evidence to help provide a concise date for their time of use.

Excavations Types along Schemes/Projects

These characteristics of the archaeological excavations undertaken along the different schemes or projects supports the trends outlined above.

Table 2:15: Excavation Types along Schemes and Projects 1930-2004

Scheme/Project	Non Exc.	Rescue	Monitoring	Testing	Conservation	Research	Total (Scheme)
Commercial Development	0	161	119	387	1	1	669
Drainage/Dredging	11	9	8	3	0	0	31
Electrical	0	7	12	7	1	0	27
Farm Improvement	4	75	0	6	0	0	85
Gas Scheme	0	52	30	16	0	0	98
Peat Production	0	20	3	0	0	0	23
Quarry, Mine & Landfill	0	48	11	14	0	0	73
Residential Development	0	84	271	632	1	0	988
Road Scheme	0	205	61	154	0	0	420
Sewerage/Water	0	20	50	61	0	0	131
Total (Exc. Type)	**15**	**681**	**565**	**1280**	**3**	**1**	**2545**

Farm Improvement schemes, as mentioned above, were particularly common in the 1970s and 1980s when the EEC agricultural grants were readily available. With the advent of CAP and the large Butter and Cereal Mountains in Brussels, EU agricultural policy shifted from maximisation to diversification. The archaeological heritage also secured important protection in this period at the EU Valletta Convention 1992 whose acts were subsequently ratified by Ireland in 1997. These developments have ensured that few farm improvement schemes date to this later period under study. It is interesting to note that excavations in advance of farm improvement schemes have tended to be rescue in form. This was due to the fact that testing excavations were not a legislative requirement before the 1990's. It was also the case that these excavations tended to be undertaken on early medieval rural sites with the intention of their complete destruction. As noted previously, the many of the rescue excavations in advance of farm improvement schemes were undertaken in Northern Ireland from the 1950's-1980's.

It is clear that testing and monitoring licenses comprise a higher proportion of excavations in advance of residential developments. These excavations comprise a major proportion of excavations undertaken over the last few years and as discussed above, have a tendency to reveal no archaeology of any significance. In most cases, they reflect planning legislation for the increased construction of single houses in the Irish countryside in recent years. A minority dealt with the construction of housing estates; a type of excavation which contains a higher probability of rescue excavations of early medieval significance. Rescue licenses however comprise a higher percentage of excavations of recent road schemes, development projects and quarrying/mining or landfill activities highlighting the different character, scope and function of these excavations. These excavations were typically undertaken over a large area of land with the intention of complete excavation if any archaeology of any significance was uncovered. These trends correlate with the higher proportion of important, highly important and significant sites excavated in advance of large scale commercial developments and road schemes (See Figure 2:18).
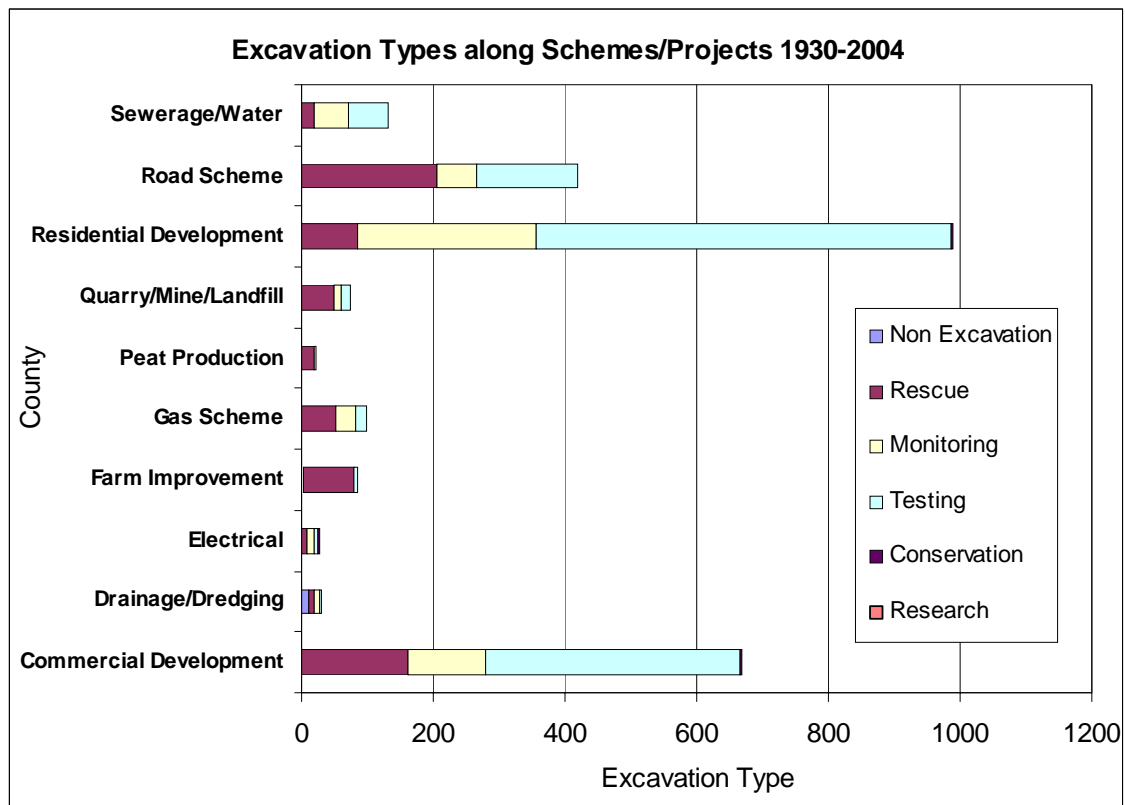
Figure 2:19: Excavation Types along Schemes and Projects 1930-2004

The changing character of early medieval excavations in Ireland, 1930-2004

It is therefore very clear that the character of early medieval excavations has been transformed in recent years due both to stronger legislative protection of the archaeological heritage and the consequent emergence of development-led archaeology. The database confirmed, what is already well known, about a dramatic shift in the massive growth in the number of excavations undertaken annually from the early 1990's due to development-led projects and schemes. It also illustrated the well-known shift from excavations undertaken by state and university bodies in the earlier decades towards one in which the commercial archaeological sector is predominant by the 1990's. It also confirmed a dramatic transformation in the character of early medieval excavations from one in which research and rescue excavations were dominant towards one in which testing/monitoring excavations prevailed from the 1990's. It was found that this shift in the character of the excavations due to tighter planning legislation had the effect of dramatically increasing the number of archaeological excavations of no significance particularly within the Republic of Ireland.

The review also revealed some interesting information about the extent and character of excavations across the island from 1930-2004. It revealed that a high proportion of the excavations were undertaken in North Leinster in the counties of Meath, Louth, Dublin and Kildare reflecting the effects of development-led archaeology within the greater Dublin area. Other areas that have seen relatively high numbers of early medieval excavations include the south-western counties of Cork, Kerry, Limerick and Clare as well as Antrim and Down in Northern Ireland. Elsewhere excavations have been generally fewer in number and of lesser early medieval archaeological significance.

The review also revealed subtle differences and variations in the character and number of excavations between those undertaken within the Republic of Ireland and those in Northern Ireland. It revealed that the Northern Ireland state bodies were at the forefront of many significant rescue and research excavations from the 1950's-1980's. It is evident that in more recent years excavations undertaken at or near early medieval or potential early medieval sites

have only slightly but consistently increased in Northern Ireland from 1930-2004 while excavations in both urban and rural counties within the Republic have increased dramatically from the early 1990's. This might both reflect the Celtic Tiger Phenomenon in the Republic and different planning legislation in both jurisdictions concerning testing and monitoring excavations.

It is obvious that this change in the scope, type and location of excavations has transformed the character of early medieval material being revealed. The next section will analyse and discuss the character of this early medieval excavated evidence across the island.

What early medieval sites were excavated 1930-2004? A summary of main findings

To summarise, there are a total of 2,208 sites in the EMAP database comprising both excavations on and near early medieval sites, monuments and structures. There are 3,047 excavations that are embedded inside these sites' that contain data about excavations on or in close proximity to early medieval or *potentially* early medieval monuments, structures and artefacts. These sites and excavations are described in total in Appendix 1.

The above sections have dealt with various research themes concerning all the excavations and sites within the current EMAP Database of 2,208 sites and 3,047 excavations. It is evident however, as mentioned above, that a significant number of excavations undertaken on or near early medieval sites and structures were of no archaeological significance and were in many in cases only situated in close proximity to early medieval monuments. The sections and chapters below discusses and appraises figures for archaeologically significant and *potentially* archaeologically significant sites and excavations from 1930-2004.

Table 2:16: Significance of EMAP Sites 1930-2004

Significance of Site	Significance Total
No Significance	1019
Uncertain	302
General	485
Significant	307
Highly Significant	95
Total	**2,208**

The database is left with 1189 early medieval archaeologically significant or potentially early medieval archaeologically significant sites when the 'No Significance' figures are removed. Of the 1189 remaining sites, a significant number 302 or 25% are of 'uncertain' early medieval archaeological status. Further research will be required to clarify if the excavated archaeology from these sites can be confirmed to date to the early medieval period.

The database currently contains 3,047 excavations which are embedded inside the 2,208 EMAP defined 'sites'. 1503 or 49% of these excavations are of early medieval or *potential* early medieval archaeological significance. 51% of excavations on or more commonly in close proximity to early medieval monuments and sites (e.g. ecclesiastical sites, ringforts and enclosures) are of no early medieval archaeological significance.

The EMAP database then currently contains 1503 early medieval or *potentially* early medieval excavations on 1189 early medieval as well as *potential* early medieval archaeologically significant sites.

Archaeologically Significant Excavations Annually on early medieval sites

The results from Table 2:17 and Figure 2:20 demonstrate that there is a noticeable increase of both early medieval archaeologically significant and potentially archaeologically significant excavations from the early 1990's. However the increase is not as dramatic as what is represented as Figure 2:1 above as excavations of no archaeological significance were the most common form of investigation from the late 1990's. It could also be argued that these figures for the latter years from 1998-2004 are perhaps an over approximation because they contain a significant number of 'uncertain' sites, some of which on more detailed investigation maybe found not to date to the early medieval period. The net result is that while there is now vast amount of excavations being undertaken on or in close proximity to early medieval sites, less than 50% of those in recent years are of early medieval archaeological significance. 186/417 or 44% of excavations in 2002 were of early medieval or potential early medieval archaeological significance; a ratio which had dropped to 34% of excavations in 2004 (164/487).

Table 2:17: Early Medieval Archaeologically Significant Excavations Annually 1930-2004

Year	Total	-	Year	Total	-	Year	Total
1930	2	-	1955	9	-	21	1980
1931	4	-	1956	7	-	21	1981
1932	5	-	1957	7	-	24	1982
1933	5	-	1958	9	-	23	1983
1934	8	-	1959	11	-	17	1984
1935	7	-	1960	10	-	23	1985
1936	3	-	1961	6	-	27	1986
1937	6	-	1962	4	-	21	1987
1938	12	-	1963	5	-	29	1988
1939	10	-	1964	7	-	34	1989
1940	8	-	1965	3	-	45	1990
1941	3	-	1966	3	-	39	1991
1942	6	-	1967	5	-	49	1992
1943	3	-	1968	5	-	56	1993
1944	4	-	1969	7	-	49	1994
1945	3	-	1970	14	-	47	1995
1946	5	-	1971	20	-	58	1996
1947	4	-	1972	18	-	64	1997
1948	2	-	1973	17	-	86	1998
1949	3	-	1974	15	-	120	1999
1950	4	-	1975	21	-	113	2000
1951	6	-	1976	12	-	110	2001
1952	2	-	1977	16	-	186	2002
1953	11	-	1978	15	-	130	2003
1954	6	-	1979	18	-	164	2004
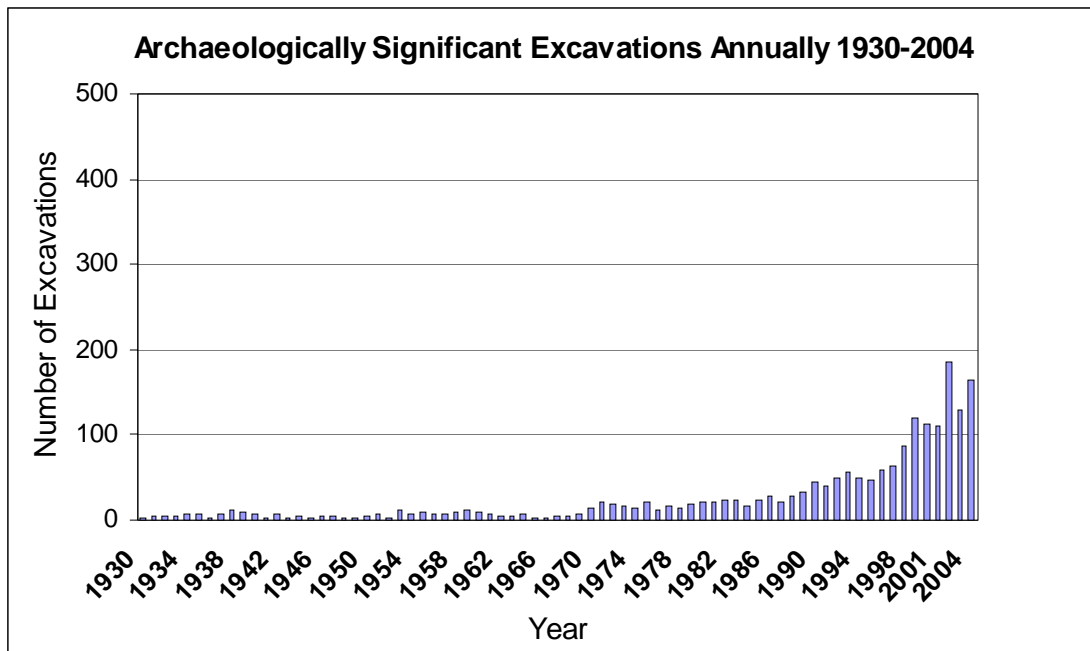
Figure 2:20: E. Med. Archaeologically Significant Excavations Annually 1930-2004

Site Categories

The database also described EMAP defined 'Sites' in terms of broader early medieval categories, as discussed in the methodology. A 'Category' field grouped together excavations on early medieval monuments and structures into broader descriptions. An Environs of Site Category was also constructed which grouped together excavations near early medieval monuments and structures into the same broader descriptions. The category descriptions comprised:

- Agricultural Site
- Agricultural/Industrial Site
- Cemetery/Burial Site
- Ecclesiastical Site
- Industrial Site
- Miscellaneous
- Route way
- Settlement Enclosure
- Settlement Landscape
- Settlement/Cemetery Site
- Unenclosed Site
- Viking/Hiberno-Norse Town

Excavated Early Medieval Site Categories

There were 1274 sites recorded in the excavated 'site' category field, of which were of early medieval as well as *potential* early medieval archaeologically significance. The remaining excavated 'sites' were of no archaeological significance and principally comprised excavations on ecclesiastical sites that revealed no early medieval archaeological evidence.

A total of 27% of excavated sites can be described as 'settlement enclosures' (e.g. ringforts, cashels, enclosures). A total of 21% or 218 of all excavated sites were found to be ecclesiastical sites. This figure excludes those from within the Viking/Hiberno-Norse towns described under that category heading. However, a significant number (131/218 or 60%) of these excavated ecclesiastical sites revealed archaeology of no early medieval significance or archaeology of

uncertain date (e.g. burials of uncertain date). The actual number of ecclesiastical sites which have revealed confidently dated early medieval excavated archaeology is somewhat smaller then though more detailed investigations of those sites described as 'uncertain' might revise these figures.

Excavations uncovering unenclosed early medieval settlements (e.g. unenclosed buildings, structures and souterrains) amounted to 10% of the total. A further 10% of excavated sites related to industrial sites engaged primarily in iron/metalworking to varying extents. A site was described as a 'Settlement landscape' when it was comprised of a number of different monuments spatially (e.g. ringforts and unenclosed sites within one excavated landscape) or chronologically (unenclosed site superseded by a ringfort etc.) distinct. This type of excavated EMAP site constituted 8% of the total sites within the database.

Early medieval excavated sites situated inside the four Viking/Hiberno-Norse towns of Dublin, Wexford, Waterford and Cork constituted 7% of the total. As mentioned above, this category included both evidence for habitation, industry and ecclesiastical sites within their predefined areas. 5% of excavated sites comprised excavated cemeteries (enclosed or unenclosed) or isolated burials with no associated settlement evidence.

A further 1% related to excavated cemetery/settlement 'sites' which have uncovered significant evidence for cemeteries associated with habitation and industrial activity dating to the early medieval period. Evidence for excavated track ways/bridge in isolated contexts amounted to 2% of the total figures. 1% of sites comprised sites which uncovered isolated agricultural/industrial sites (e.g. cereal-drying kilns and evidence for ironworking). 2% of excavated 'site's belonged to a miscellaneous category (e.g. underwater excavations for early medieval artefacts).

Table 2:18: Excavated EMAP Categories 1930-2004

Excavated Categories	Number	%
Agricultural Site	73	6
Agricultural/Industrial Site	10	1
Cemetery/Burial Site	68	5
Ecclesiastical Site	266	21
Industrial Site	133	10
Miscellaneous Site	21	2
Route way	26	2
Settlement Enclosure	346	27
Settlement Landscape	101	8
Cemetery/Settlement Site	12	1
Unenclosed Site	129	10
Viking Town	89	7
Total	**1274**	**100**

Excavated Early Medieval Site Categories 1930-2004
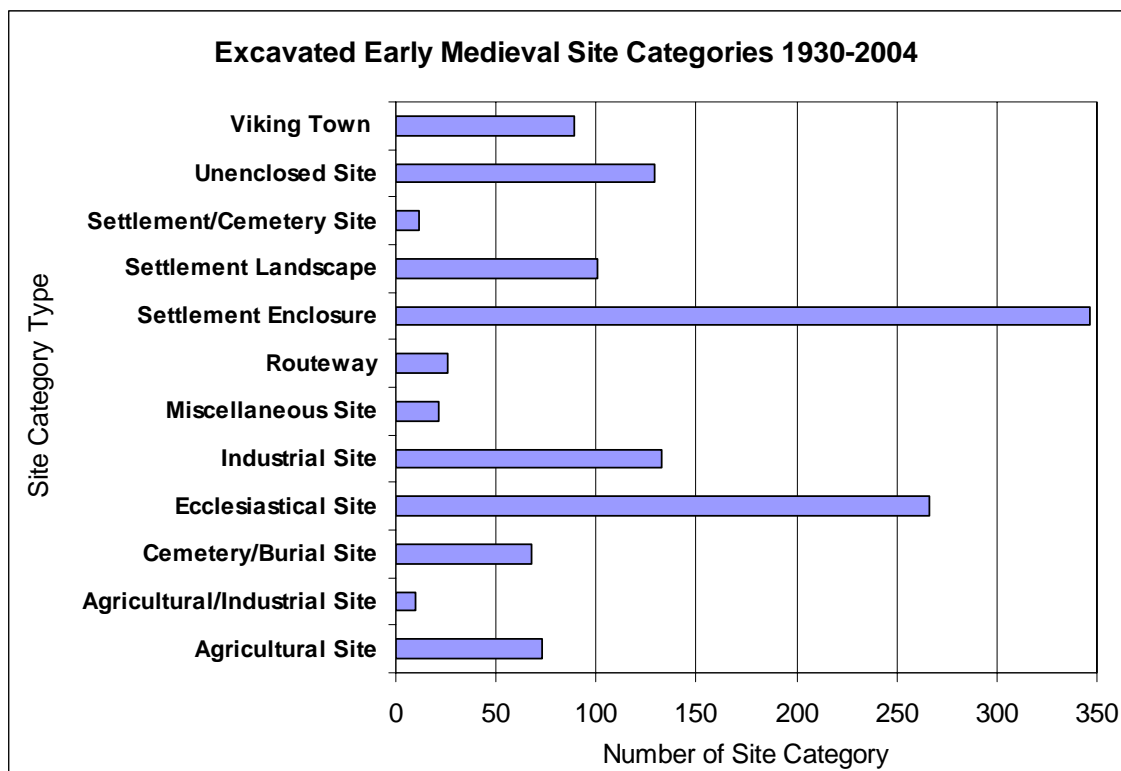
Figure 2:21: Excavated EMAP Site Categories 1930-2004

Excavations in environs of 'Site' Category

The Environs of Site category was designed to collect information about excavations near protected SMR monuments. This particular type of excavation takes the form of pre-development testing or subsequent monitoring works undertaken in close proximity to early medieval settlement sites in advance of a development that is often residential. They are, in nearly all cases of no archaeological significance and are undertaken rather to comply with existing planning legislation than generate meaningful archaeological knowledge about the past. These forms of investigation have emerged as the predominant form of excavation in recent years, particularly in the context of the Republic of Ireland.

The Environs of category comprises 1003 excavated sites situated in close proximity to an early medieval or *potential* early medieval site/monument. It was particularly concerned with excavations near rural settlement sites like ringforts or cashels, rural ecclesiastical sites like monasteries or churches and wetland sites in the form of crannogs. Excavations in close proximity to 'enclosure' sites which could *potentially* represent early medieval ringforts or enclosed settlements were also collected.

54% of the excavations were situated in close proximity to settlement enclosure 'sites'. A further 37% of the excavations were located close to ecclesiastical sites. The early medieval antiquity of a small collection of these ecclesiastical sites was not established. Further historical research will be required to clarify if these sites have an early medieval origin or were founded post A.D. 1170. The figures also include excavated pre-1170 Cistercian monastic foundations. 5% of this set of excavations was situated in close proximity to 'settlement landscapes'. These sites typically comprised an excavation near a number of ringforts or ecclesiastical sites. Excavations close to unenclosed sites (e.g. isolated souterrains) comprised 4% of the total.

The statistics demonstrate that excavations under the current legislation (particularly in the case of the Republic of Ireland) tend to be undertaken close to easily identifiable monuments which have been extensively surveyed and recorded from the 19th century and which have subsequently received protection under the XXXXX law. They however do not tend to be

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undertaken near isolated industrial, agricultural and burial/cemetery sites, as well as many unenclosed habitation sites because these types of sites have never been recognised across the Irish landscape, at any great scale, till the large-scale development led excavations in recent years. The Archaeological Survey of Ireland continues to accord an SMR number to every excavated site and monument in the Republic of Ireland. It will be interesting therefore to see if pre-development excavations in future years are undertaken in close proximity to recently recoded SMR sites such as isolated industrial or agricultural monuments and structures. This is of course providing the existing planning laws continue to be enforced.

Table 2:19: Excavation near Site Categories 1930-2004

Excavated Categories	Number	%
Cemetery/Burial Site	2	0
Ecclesiastical Site	369	37
Miscellaneous Site	5	0
Route way	1	0
Settlement Enclosure	538	54
Settlement Landscape	52	5
Unenclosed	36	4
Total	1003	100
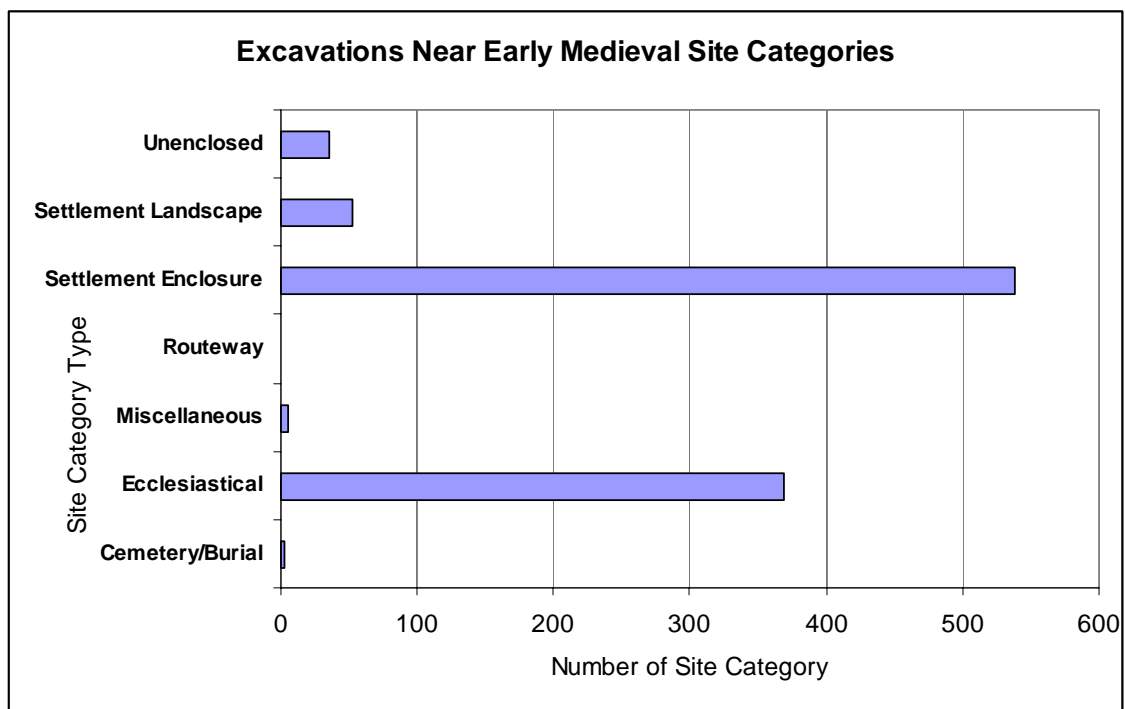
Figure 2:22: Excavations near Site Categories 1930-2004

The EMAP database then currently houses 1,274 excavated EMAP sites and categories, 1,189 of which are of early medieval or *potential* early medieval archaeological significance. It also, as discussed above, contains 1,003 sites and associated categories which were undertaken near early medieval and *potential* early medieval monuments. These numbers totalled 2,277. As there are only 2,208 EMAP sites currently in the database, the overlap of 69 sites comprised cases where an excavation was undertaken simultaneously on an early medieval/potential early medieval site as well as being located in close proximity to another early medieval/potential early medieval site.

Conclusions

The EMAP database then currently contains 1503 early medieval or *potentially* early medieval excavations on 1189 early medieval as well as *potential* early medieval archaeologically significant sites. This is archaeological evidence with extraordinary potential for revealing aspects of our heritage, landscape and understanding of past societies – and it has barely been exploited.

The following chapters comprise descriptions and analysis of the excavated monuments, structures and artefacts currently recorded in the EMAP database and uncovered during excavations at these EMAP defined 'sites' from 1930-2004. They also engage in broader discussions of topics concerning early medieval settlement, industry, agriculture, the Vikings in Ireland and the early medieval church and will hopefully give a sense of this remarkable archaeological resource.

- Early Medieval Dwellings, Settlements and Landscapes A.D. 400-1170)
- Early Medieval Church
- Early Medieval Death and Burial
- Early Medieval Agriculture and Economy
- Early Medieval Crafts and Technology
- Early Medieval Trade and Exchange

Chapter 3. Early Medieval dwellings, settlements and landscapes

Introduction

Archaeological, historical and palaeoenvironmental evidence, indicates that the early medieval Irish landscape was densely populated and intensively settled between the 6th to 10th centuries AD. In fact, the settlement landscape of early medieval Ireland has resulted in one of the richest archaeological landscapes surviving in Europe. The surviving archaeological evidence for settlement is wide-ranging, not only including classic early medieval dwelling enclosures (e.g. ringforts, cashels, crannogs, ecclesiastical enclosures and urban towns), but also an emerging diverse range of archaeological evidence for unenclosed dwellings, cave occupations, settlements with cemeteries, coastal midden sites and seasonal or temporary habitations in wetlands, uplands and coastal contexts. The archaeological excavation of early medieval settlements are also our principal source of information on houses and dwellings (O'Sullivan 2006), diet and economy (McCormick and Murray 2007); the organisation of crafts and technology (Comber 2008) and the social organisation and inhabitation of the settled landscape itself (Stout 1997).

Early medieval settlement has long been of interest to the scholar and a range of studies have described its essential features – whether they be ringforts (e.g. Edwards 1990; Stout 2000; Edwards 2005), crannogs (O'Sullivan 1998; Fredengren) or Ireland's Hiberno-Norse towns (Wallace 19**; Hurley 19**). Other forms of early medieval settlement – the monastic enclosure, crannog, cashel or promontory fort tended to dominate the remainder of the evidence (O'Sullivan 1998; Fredegren 20**). However, in recent years particularly with the large-scale gas pipeline and roadway developments, early medieval archaeology has been entirely re-invigorated by a renewed interest in the potential range and *diversity* of the early medieval settlement landscape (and the more diverse forms of evidence for enclosed and unenclosed settlements that they have brought). Although they are the most numerous, ringforts (or raths) are now not the only site-type from the early medieval period. Recent excavations have uncovered other sites that have left no upstanding remains, such as settlement/cemetery sites (e.g. Raystown, Co. Meath) and non-circular shaped enclosures (e.g. Newtown, Co. Limerick), There is also an emerging body of evidence for unenclosed sites which has still not been fully integrated into the settlement synthesis for this period. These are represented by isolated souterrains (e.g. Balrenny, Co. Meath (Eogan & Bradley 1977), unenclosed settlements (Ballyutoag, Co. Antrim (Williams 1984)), coastal occupation sites (Oughtymore, Co. Londonderry (Mallory & Woodman 1984) and cave dwellings (Kilgreany, Co. Waterford (Movius 1935)). Our knowledge of the early medieval settlement landscape has also been transformed by the discovery of types of archaeological features testifying to the intensity of land-use – such as fields, pits, kilns, mills, ironworking sites and other features.

This chapter will review the emerging evidence for settlement archaeology in this period based on EMAP's research of excavations 1930-2004, with an occasional particular analytical focus on the period 1970-2004, it will firstly categorise and review settlement during this period and explore the morphology, chronology and distribution of the different monument types to understand continuity and change in settlement and social organization during the early medieval period. A range of enclosed settlement type sites (i.e. ringforts, cashels, crannogs) will be examined and then this will be followed by a review of the evidence for unenclosed settlement. Finally, areas of potential research will be outlined.

Early Medieval Rural Settlement

Introduction

The early medieval settlement landscape in Ireland between the 6th to 12th century, as in much of the rest of Europe, was a largely rural, pastoral landscape with people living on and working the land around them. However, while in northern early medieval Europe nucleated rural settlements emerged at an early stage (with nucleated clusters of longhouses in parts of northern Europe) and 'villages' developed in later Anglo-Saxon England, the Irish early medieval settlement landscape remained largely one of dispersed rural dwelling places. Although, it has been suggested that there is some early Irish historical evidence by the tenth century for some type of nucleation in the form of the *baile*, despite ten years of large-scale excavation, such sites have resolutely failed to appear. Indeed early medieval nucleated settlements only emerge on this island with the development of monastic towns from perhaps the 9th or 10th century (and this remains a matter of debate) or of course in the island's Norse towns which develop in particular from the early tenth century AD onwards at Dublin, Wexford, Waterford, Cork and Limerick.

Early medieval rural settlements therefore constitute the bulk of the Irish archaeological record for the period. Although ringforts and enclosures remain the dominant settlement type in the excavated archaeological record, there is a growing corpus of evidence for settlement/cemetery sites and unenclosed sites. Table 3:1 and Figure 3:1 illustrate the results of excavated early medieval rural settlement site types from 1930-2004. The total type column refers to the total number of excavated monuments (e.g. ringforts) while the EMAP Site column sums up the number of EMAP 'sites' these excavated sites/monuments are occurring on. Various forms of settlement enclosures like ringforts, crannogs, cashels, and enclosures as well as a small collection of excavated hillforts, promontory forts and possible longport sites with early medieval archaeological evidence have been identified. Although enclosure site types remain the dominant settlement type in the excavated archaeological record, there is a growing corpus of evidence for settlement/cemetery sites and unenclosed sites. All these various site-types will be discussed in greater depth below.

Table 3:1: Excavated Rural Settlement Site Types 1930-2004

Excavated Site	EMAP Site (Total)	Total Type
Cave	4	4
Cashel	24	25
Coastal Habitation	6	6
Crannog	26	29
Enclosure	86	107
Hillfort	4	4
Longport	2	2
Non-circular Enclosure	16	18
Promontory Fort	5	5
Ringfort	215	241
Raised/Platform Ringfort	39	39
Settlement/Cemetery Site	20	20
Souterrain	186	247
Unenclosed Habitation	40	41
Total	**673**	**785**

Excavated Rural Settlement Sites 1930-2004
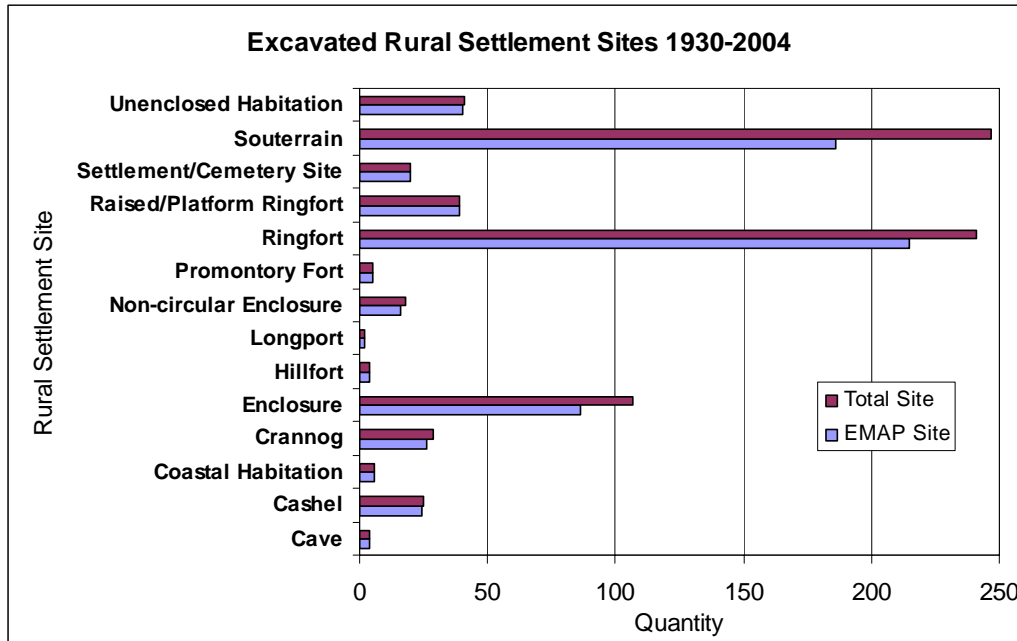
Figure 3:1 Excavated Rural Settlement Types 1930-2004

There are also outstanding problems in our understanding of changes to early medieval rural settlement at either end of the period, its beginning and its 'end'. The transitional Iron Age/Early Medieval period - fifth to seventh centuries A.D. - is poorly understood, although an increasing number of sites – particularly those containing early burials - have been discovered from this period. The Early Medieval period between the sixth and the ninth centuries A.D., however, is potentially the most researched phase in Irish archaeology. The character and organisation of houses, dwellings, settlement enclosures (including ringforts 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.

However, early medieval rural settlement in the tenth to twelfth centuries is also poorly understood. Although a lot of recent study has examined the archaeology of early Hiberno-Norse towns, the situation in the contemporary rural Irish landscape is less clear. Recent excavations have produced a number of enclosures which have been radiocarbon dated to this period, but their relationships to each other and to the surrounding landscape have not yet been fully resolved. Various archaeologists and historians have suggested that there was a shift *circa* A.D. 800 from a social organization based around clientship to a system of labour services to a lord indicative of feudalism (Graham 1993, 44; O'Keeffe 2000, 26). Many ringforts may have been abandoned due to actual population relocation within new territorial frameworks under lordship control (O'Keeffe 2000, 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* (2000, 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.

It has been noted by Clinton (2001, 204) that the souterrain appears to have survived the apparent decline of the ringfort and continued to be used into the early second millennium

A.D. - often souterrains have been found to date to the final phases of ringforts and enclosure sites. Previous surveys by Buckley (1988) and Clinton (2001, 45) as well as the EMAP survey has found that isolated souterrain sites often constituted over 50% of the total number of excavated sites. It is likely that souterrains may be understood as an independent form of monument whose role was re-defined following the decline of enclosed settlements. Clinton (2001, 204) has noted that many souterrains in open settlement sites in eastern and northern counties were found associated with rectangular houses, for which Lynn (1978 - see below) has proposed post-ninth century dates. He has also suggested that these souterrains in open settlement sites may have also been linked to the growth of a tillage economy in this period. The EMAP survey has indicated that a number of open settlement sites have been found associated with souterrains further supporting this notion.

Many of these theories need to be further examined – particularly in the light of a thorough review of excavated evidence in the last few years years (i.e. 2004-2008). There is growing evidence to support the notion that unenclosed sites may have been the predominant form of settlement in this later period though the exact character of this – whether dispersed or nucleated - needs still to be established. The role of the souterrain in this period also needs to be appraised to further understand its links with unenclosed settlement in this period; and the archaeological remains of pre-Norman feudalism (or proto-feudalism) have been difficult to identify. Many theories have been advanced to support this proposition, yet it is not clear presently how we can locate evidence for these changes in social organization and settlement pattern.

Early Medieval Ringforts/Cashels

Introduction

Traditionally, early medieval settlement studies have tended to focus on the early medieval ringfort – and less often the cashel - long seen as almost the defining types of settlement of the period and seen since the 1930s as the truly representative homestead of a rural, pastoral society (see O'Sullivan 1998 for an historiography of early medieval archaeology). Archaeological excavations of ringforts, whether they be royal sites such as Garranes, Co. Cork (**) or smaller ringforts such as Deer Park Farms, Co. Antrim (Lynn 199) have tended to emphasise the archaeological investigation of the sites themselves; their size and types of enclosing defences, the location and form of internal structures and the range of material culture recovered from the dwelling spaces within (e.g. Edwards 1990; Mytum 1992; Comber 2006). It is only recently that archaeological excavations have been carried out outside ringforts, with some interesting results – particularly the identification of houses, laneways and fields and other agricultural/industrial features in their environs. Remarkably, there have been few landscape archaeological studies of early medieval settlement in Ireland (Clinton 19**), but in recent times, there has been several historical geographical studies of ringforts, particularly those by Stout (1997) and more recently by Kerr (2007), which have concentrated on their role within their contemporary social and economic landscapes; tracing early medieval social hierarchy and ranking from variations in their morphology, siting and distribution.

The classic site-type for this period then, despite the range of the new discoveries, is the ringfort or rath. Archaeologists based 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 'rath' in Ulster place names compared with the rest of the country (Flanagan and Flanagan 1994, 135). Fergus Kelly (1997, 364), however, suggests that the term 'rath' is more appropriate because the Early Irish term *ráth* means 'earthen rampart' and thus eschews the militaristic connotations of the term 'fort' (see below). Nevertheless, in this study, the term 'ringfort' and 'rath' are both used. Estimates of the number of ringforts in Ireland, based on

surviving sites or records of destroyed sites, have in the past varied greatly. Stout (1997, 53) produced the first reliable estimate of their numbers on the basis of the records of the Archaeological Survey of Ireland (RoI) and the records of the Environment and Heritage Service (N. Ireland). His estimate (based on figures available in March 1995) was there were at least 45,119 probable ringforts in Ireland but that only 41% have been positively identified (Stout 1997).

Ringforts and Cashels: Definitions, Morphology and Form

The Irish ringfort was described in the first edition of Ó Ríordáin's *Antiquities of the Irish Countryside* as being 'in its simplest form as a space most frequently circular, surrounded by a bank and fosse or simply by a rampart of stone' (1942, 5). The classification of ringforts has a superficial simplicity. The monument group comprises of univallate, bivallate and trivallate ringforts which should reflect the number of banks and ditches an individual site should contain. To this can be added, cashels, which are generally regarded as stone, rather than earthen, ringfort, as well as raised/platform ringforts (Edwards 1990, 11-19).

The majority of ringforts are univallate raths, i.e. raths 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 ringforts have, in fact, only one ditch. He notes that in a survey of the south-west midlands only one of 37 bivallate ringforts had a second ditch, while in County Louth some 78% are without a second ditch. Further confusion is provided by a type of ringfort known as a 'counterscarp rath', a term that has been applied principally to sites in Ulster (Davies 1947; Jope 1966). This describes a ringfort 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 ringfort, 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 ringforts are, in fact, extremely rare. Indeed, only two examples have been excavated; at Garranes (O'Riordain 1942) and Ballycatteen (O'Riordain and Hartnett 1943), both in county Cork. In both instances these site were surrounded by three banks and three ditches. It is sometimes stated that the central living area of multivallate sites do not tend to be larger than those of univalate ringforts (Stout 1997, 18) but it should be noted that some univalate ringforts can have extremely large interior areas. Stout (*ibid.* 15) also noted that there can be considerable variation in the enclosed space in a given area. In the south west midlands, for instance, this ranged from 15.5 m to 75m but with 40% having interior diameters of 28-35m. Kelly (1997, 565) indicates that the early Irish term *traig* (foot) is similar, if not marginally shorter, than the modern foot measurement. The *Críth Gablach* states that diameter of an internal royal enclosure (*les*), which excludes the bank, should be 'seven score feet [42.6m]' (MacNeill 1923, 305).

Platform raths are another recognised type, if somewhat generally ill-defined. The Northern Ireland Sites and Monuments Record compiled by the Environment and Heritage Service indicates that between 15% and 20% of raths are recognized as 'platform raths' or 'raised raths' (Kerr 2007). Stout (1997, 17) describes 19% of ringforts in the south-west midlands are of platform type, while 15% of those in Co. Louth have raised interiors. Stout, however, does not use the term 'raised' ringfort or rath in his ringfort monograph. Attempts to differentiate between platform raths and raised raths on typological grounds have been rather unsuccessful (McNeill 1975, 49). Height has been suggested as a distinguishing factor

but there seems to be no clear consensus – Jope (1966, 185-195) set the cut-off mark for the raised rath mound at approximately 3-4m (a fairly arbitrary figure) whereas McNeill suggested a more modest height of approximately 2m (1975, 49).

Raised raths, unlike platform raths, have also 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 also been used in an attempt to differentiate raised raths from the later Anglo-Norman mottes on a typological basis (McNeill 2007, 11). It seems that the only conclusive way to differentiate between raised raths and platform raths is by archaeological excavation. Chris Lynn (1981-2, 149) outlined three methods for the construction of these monument types. The scarping a natural mound or knoll would seem to be most applicable to platform raths. Raised raths 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 1982) and Gransha, Co. Down (Lynn 1985; 1988), and at Deer Park Farms, Co. Antrim (Lynn 1987; 1988). In all these instances the sites seem to have originated as 'flat' univallate ringforts. 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 1988).

Cashels (and see below for further discussion) are essentially regarded as stone versions of earthen ringforts. Their presence in a given is generally seen to be a function of environmental determinism. Edwards (1990, 14) succinctly summarises the general attitude when she states that 'the majority occur in rocky country with suitable stone for wall building ... as a result there are much more characteristic of western Ireland than the east'. Ditches were generally not regarded an integral part of the design of cashels. In many cases it must have been necessary to quarry stones for their construction and a ditch would have been an obvious source of quarried stone as was the case with later medieval castles such as Greencastle, Co. Down (Lynn 1988, 67-8). Conversely, when bedrock was excavated in the construction of ringfort ditches, as was the case at Ballycatteen (Ríordáin 1943), Garranes (O'Riordain 1942) and Garryduff (O'Kelly 1963), Co. Cork, there was no attempt to build cashel-type banks, or even stone faced banks. At Staigue and Cahersavane, Co. Kerry, ditches surrounding the stone cashels are present (O'Sullivan and Sheehan 1996, 195). This, however, is a rare occurrence and it may well be that the cashels are built on the site of already existing earthen ringforts. Earthen ringforts are, in fact, more common in the area than cashels (*ibid*., 135). This raises the possibility that cashel are a later phenomenon than earthen ringforts, something that is considered further below.

Cashel, like earthen ringforts, vary greatly in size both in their internal diameter and the massiveness and height of their walls. There is no suggestion that the surviving walls of the modest sized Dromena, Co. Down (Jope 1966, xx) could have ever achieved the height and monumentality of sites such as Staigue, Co. Kerry (O'Sullivan and Sheehan 1996, 195) or Grianán Aileach, Co. Donegal (Lacy *et al* 1993, xx). Where comparisons have been made, it was found that the internal diameter of cashel generally smaller than those of earthen ringforts. In Co. Donegal nearly 60% has diameters of 15m and 25m (Edwards 1990, 15).

Excavated Ringforts and Cashels, 1930-2004

Recent studies of ringforts have tended to focus on their siting and landscapes towards a reconstruction of their social and ideological relationships (e.g. Stout 1997; Kerr 2007). It is interesting that few landscape archaeological studies have attempted to integrate regional/local studies with the evidence revealed by archaeological excavations. Indeed, archaeological excavation has perhaps shown that these site types are surprisingly varied in morphology, form, occupation histories and chronology, thus challenging simplistic models of ringfort landscapes – and indeed, even of the term 'ringfort' itself.

The Early Medieval Archaeological Project's (EMAP) research has established that a total of 280 ringforts (including raised/platform types) were excavated within 254 EMAP defined sites between 1930-2004. There are distinct regional patterns. They were investigated within a total of 31 counties in Ireland. The largest numbers of ringforts were excavated in Co. Antrim (45) followed by Cork (35), Down (31) and Limerick (23). Others notable areas include Kerry and Tipperary in Munster, Tyrone in Ulster, Mayo over in Connacht and Westmeath, Dublin, Louth, Meath and Kildare in North Leinster.

The preponderance of ringfort excavations in Munster and Ulster can be explained by the history of ringfort excavations, as noted above, which has also had a profound impact on our perception of these monuments. It is clear that the earlier archaeological excavations on ringforts were primarily carried out by University-based academics. In the Republic of Ireland, the principal early investigators were Sean P. Ó Ríordáin (originally from UCC, and later from UCD) and latterly Michael O'Kelly (from UCC). Oliver Davies, from Queen's University, Belfast also undertook a number of excavations in Northern Ireland and the southern Ulster counties. The Harvard Archaeological Mission to Ireland in the 1930s, under Hallam Movius and Hugh O'Neill Hencken, was also a leading influence in pointing out how large-scale excavations, such as Ballinderry I crannog, could be undertaken in Ireland (O'Sullivan 2003, 20-23).

There was a sustained phase of ringfort/rath excavation in Northern Ireland in the 1950s, 1960s and through into the early 1970s by the archaeologists of the Northern Ireland Historic Monuments Branch of the Ministry of Finance (Including Dudley Waterman, Pat Collins, Cynthia Warhurst, Chris Lynn and Alan Harpur, latterly Archbishop of Armagh and Primate of All Ireland). These excavations focused in particular on Co. Down (in preparation for the production of the *Archaeological Survey of Co. Down* (1966)), and although a similar series of excavations was planned for the production of the *Archaeological Survey of Co. Armagh* (forthcoming), only a handful of these were ultimately undertaken. Ringfort excavations in the late-1960s and early-1970s were focused on road development works associated with the creation of the M2 motorway in south Co. Antrim, and in this sense were prescient of the bulk of archaeological enquiries that would be undertaken thirty years later.

Farm improvement schemes provided the bulk of early medieval excavations in Northern Ireland from the mid-1970s through to the 1990s. Many of these excavations were on previously undated earthen mounds, some of which were assumed to be prehistoric, and others, Anglo-Norman. The artefacts and radiocarbon dates proved that sites such as Tully, Co. Antrim (Harper 1970); Ballylessant, Co. Down (Collins 1970); Ballygortgarve, Co. Antrim (Lynn 1971; Lynn 1978); Crossnacreevy, Co. Down (Harper 1971; Harper 1973-4); Gransha, Co. Down (Lynn 1972; Lynn 1980-4; Lynn 1988); and Big Glebe, Co. Londonderry (Bratt & Lynn 1976; Lynn 1988) were in fact early medieval in date. Although a similar site had been excavated at Ballingarry Down, Co. Limerick in the 1950s (Ó Ríordáin 1965, 7), these were the first concentrated excavations of platform ringforts. At the end of the 1970s and the early 1980s Chris Lynn excavated possibly the two most significant platform raths yet discovered - Rathmullan, Co. Down (Lynn 1977-9; Lynn 1981-2; Lynn 1988) and Deer Park Farms, Co. Antrim (Lynn 1985; Lynn 1988; Lynn & McDowell in press).

In north Co. Cork, the excavations of the multivallate ringfort of Lisleagh 1 (Monk 1980-4; 1988; 1995), represented perhaps the major early medieval ringfort investigated in the Republic of Ireland prior to more recent NRA-funded investigations in the last decade. The expansion of developer-funded archaeological excavations, particularly in the Republic of Ireland then revealed a further number of other important ringforts sites. Examples include Aghadegnan, Co. Longford (Carroll 1991); Killanully, Co. Cork (Mount 1992; Mount 1995); Meadowbank, Jordanstown, Co. Antrim (Halpin & Crothers 1995), Carrowkeel, Co. Mayo (Zajac 2002) and most recently Leggetsrath West, Co. Kilkenny (Lennon 2005).

Table 3:2 Excavated Ringforts Per County 1930-2004

County	Quantity		County	Quantity
Antrim	45		Leitrim	1
Armagh	7		Limerick	23
Carlow	1		Longford	1
Cavan	2		Louth	10
Clare	4		Mayo	8
Cork	35		Meath	7
Derry	6		Monaghan	1
Donegal	2		Offaly	1
Down	31		Roscommon	3
Dublin	9		Sligo	6
Fermanagh	6		Tipperary	9
Galway	6		Tyrone	12
Kerry	13		Waterford	2
Kildare	8		Westmeath	8
Kilkenny	6		Wexford	1
			Wicklow	6
Total	**280**			
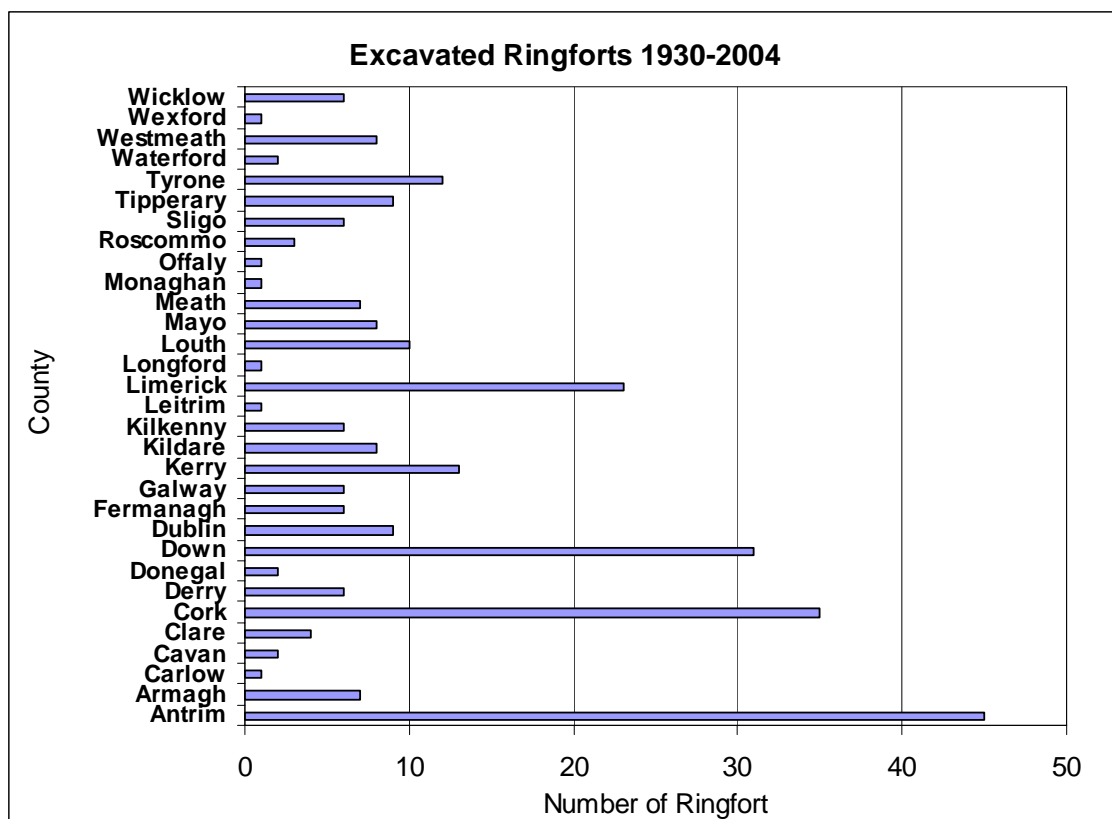
Figure 3:2: Excavated Ringforts Per County 1930-2004

Archaeological Significance of Excavated Ringforts
The EMAP sites (254) in which the ringforts (280) were excavated were graded in terms of their archaeological significance. A total of 20/254 (8%) excavated sites in which the ringforts (including raised/platform) were investigated were of no archaeological significance. 128/254 sites, or 50% of excavated ringforts were of general archaeological significance. These excavations typically uncovered a limited quantity of artefacts and associated early medieval material. A total of 91/254 or 36% of EMAP sites in which ringforts were excavated were

described as 'significant'. A small number of these EMAP sites comprised one or two excavated ringforts and associated agricultural/industrial features in the vicinity of the monument. Finally 14/254 or 6% of EMAP sites in which ringforts were excavated were 'highly significant' in terms of excavated archaeological evidence. These excavated sites revealed rich amounts of highly significant settlement, industrial and agricultural evidence as well as indications of long term occupation. A number of these 'highly significant' sites also comprised a number of excavated ringforts.

Table 3:3: Archaeological Significance of Excavated Ringforts 1930-2004

EMAP Site	Quantity	%
No Significance	20	8
Uncertain	1	0
General	128	50
Significant	91	36
Highly Significant	14	6
Total	**254**	**100**

Excavated Cashels

Early Medieval cashels are essentially stone versions of earthen ringforts. The EMAP survey has identified 24 cashels which were excavated between 1930-2004. They were located in the counties of Clare, Cork, Down, Donegal, Dublin, Fermanagh, Galway, Kerry, Laois, Limerick, Louth and Mayo. Table 3:4 lists these cashels and their relative archaeological significance.

Table 3:4 Excavated Cashels 1930-2004

Name	County	Year(s)	Significance		Reference
Ballyegan	Kerry	1991	Significant	1	Byrne 1991:065
Barnaderg North	Galway	2000	Uncertain	1	Delany 2000:0374
Barrees Valley	Cork	2002-03	Significant	1	O'Brien 2002:0238 & 2003:0174
Cahercommaun Fort, Tullycommon	Clare	1932-34	Significant	1	Hencken 1938
Cahergal	Kerry	1986,1990-91	Significant	1	Manning 1986:31, 1990:067 & 1991:070
Cahirvagliair, Cappeen West	Cork	1985	General	1	Manning 1987-8
Carn	Fermanagh	1979	General	1	Brannon 1981-2
Carraig Aille I & II , Lough Gur	Limerick	1936-40	Highly Significant	2	Ó Ríordáin 1948–1950
Carrowdotia (AR 25)	Clare	2002-03	Uncertain	1	Collins 2002:0137 Taylor 2003:0090
Carrowdotia (AR27)	Clare	2002-03	No significance	1	Collins 2002:0138 Taylor 2003:0091
Carrowdotia (M27)	Clare	2002-03	Uncertain	1	Collins 2002:0139 Taylor 2003:0089
Cathair Fionnúrach, Ballynavenoor	Kerry	1994-97	Significant	1	Gibbons 1997:228

Name	County	Year(s)	Significance		Reference
Cathair Mor, BallyCarnlabban	Clare	1999	General	1	Fitzpatrick 1999:038
Dunamase Rock	Laois	1993-97	Significant	1	Hodkinson 1993:142, 1994:144, 1995:176, 1996:223 & 1997:315
Dún Eoghanachta, Eoghanacht, Inishmore	Galway	1995	Significant	1	Cotter 1995:117
Feltrim Hill, Feltrim	Dublin	1947	General	1	Hartnett & Eogan 1964
Kilcashel	Mayo	1999	General	1	Fitzpatrick 1999:659
Kildreenagh, Loher	Kerry	1982-85	Significant	1	O'Flaherty 1980-84:0116 & 1985:34
Lecanabuaile, Kimego West	Kerry	1939-40	Significant	1	Ó Ríordáin & Foy 1941
Lissachiggel Cashel, Doolargy	Louth	1940	Significant	1	Davies 1940
Mullaboy	Louth	1932?	General	1	Tempest 1933
Rinnaraw	Donegal	1987-92	Significant	1	Fanning 1987:11, 1988:11,1989:019, 1990:025 &1992:032
Ryan	Down	1987	No significance	1	Williams 1987:14
White Fort, Drumaroad	Down	1953	Significant	1	Waterman 1956

A number of curvilinear and rectangular stone buildings, evidence for industry and agriculture and an extensive collection of domestic, agricultural and bodily artefacts were recovered from two stone cashels at Carraig Aille I & II, Lough Gur, Co. Limerick. Eleven stone enclosure were excavated which revealed 'significant' archaeological evidence. They comprise the sites of Barrees, Co. Cork (O'Brien 2002); Rinnaraw, Co. Donegal (Fanning 1987-92); Lissachiggel Cashel, Co. Down (Davies 1940); White Fort, Drumaroad, Co. Down (Waterman 1956); Lecanabuaile (Ó Ríordáin & Foy 1941), Loher (O'Flaherty 1982-85), Cathair Fionnúrach (Gibbons 1994), Cahergal (Manning 1986, 1990 & 1991) and Ballyegan (Byrne 1991), all in Co. Kerry; Cahercommaun Fort, Tullycommon, Co. Clare (Hencken 1938), Dunamase Rock Co. Laois (Hodkinson 1993-97) and finally Dún Eoghanachta, Co. Galway (Cotter, 1995). As with earthen ringforts, these sites typically revealed evidence for domestic and agricultural activity, as well as some small-scale metal/ironworking.

Although there is evidence for post-and-wattle buildings at Kildreenagh, Loher, such as would have been found on rath sites, stone seems to have been the main building material, and thus structures associated with cashels tend to leave more substantial traces. Excavations revealed evidence for a stone clochan at Cahergal; three stone-buildings at Dún Eoghanachta on the Aran Islands; a potential Viking-Age rectangular stone house at Rinnaraw (Comber 20**); three buildings at Ballyegan; four stone buildings at Kildreenagh, Loher, two square shaped buildings at White Fort Drumaroad, Co. Down (Waterman 1956) and . A number of conjoined, round and rectangular stone buildings were also excavated at both Lissachiggel Cashel (Davies 1940) and Lecanabuaile, Co. Kerry (Ó Ríordáin & Foy 1941). Souterrains were also a feature of Loher, Lecanabuaile, Ballyegan and Cahercommaun Fort and White Fort, Drumaroad. Stone field walls, marking out contemporary field patterns, also survive at Ballyegan. Co. Kerry. A corn-drying kiln was also excavated at Ballyegan, and quern stone stones were a frequent discovery on several other sites.

Archaeological excavations at two of these cashel sites revealed little archaeology of any significance - though this does not prove that they were not important in the early medieval period. A further eight sites revealed only limited early medieval archaeological evidence (6) or archaeological evidence of uncertain date (2) on excavation. The cashel at Cahirvagliair was undoubtedly a significant settlement site in the early medieval period. It consists of a

large inner bank surrounded by a small ditch, a small bank and a large outer ditch, with a dry-stone-walled entranceway (Manning 1987-88). Limited archaeological evidence - scraps of iron, animal bone and a perforated disc - was found, although the focus of the excavation was the restoration of the stone-built enclosing wall and passageway.

Four of these stone cashels could also be described as hillforts. Cahercommaun Fort, Co. Clare perched on an inland cliff-top and containing three concentric enclosing walls revealed archaeological evidence for prehistoric activity as well as two souterrains and an extensive range of early medieval artefacts (Hencken 1938). Another large stone fort commanding extensive views on an elevated ridge on Inis Mór, Co. Galway is known as known as Dún Eoghanachta and was found to have been constructed and re-used in the early and later medieval periods (Cotter 1995:117). Excavations on the site of a medieval castle on the Rock of Dunamase, Laois confirmed the existence of early medieval pre-castle dry stone walls on the site (Hodkinson 1995:176). Finally a stone fort on Feltrim hill excavated in advance of extensions to Dublin airport proved to have been occupied over a long period of time from the Neolithic to medieval periods (Hartnett & Grogan 1964).

Although most cashels are broadly contemporary with the use of ringforts in early medieval Ireland, some sites, like Rinnaraw, revealed evidence from the seventh to the twelfth century A.D. suggesting that some may have continued to be used until or after the arrival of the Anglo-Normans. Other sites including Dún Eoghanachta and the historically recorded *Dún* on the Rock of Dunamase provided archaeological evidence for occupation in both the early and later medieval periods.

Ringfort Distribution and Siting

Stout (1997) and Kerr (2008) have provided the most recent reviews of ringfort distribution in Ireland. Earlier work (e.g. Bennett 1989, Fahy 1968) tended to concentrate on the location of ringforts in terms of altitude and local topography. These established that ringforts were generally located on good agricultural land avoiding valley bottoms, and upland areas. The analyses of regional archaeological studies such as Donegal (Lacy 1983), Ikerran, Co. Tipperary (Stout 1984), O'Sullivan and Sheehan (1996) *etc.* confirmed this pattern. Such generalities, however, only apply to areas of high topographical contrast. North Co. Kerry comprises mostly of low lying land and consequently 69% of the ringforts were below the 200ft contour (Toal1995, 82).

Stout's (1997) work produced the first island-wide analysis of ringfort distribution as well as providing detailed regional and local studies. He also examined the distribution of different ringfort types and attempted to equate these ringforts with the different grades of society outlined in the early legal texts. He also explored the relationship between secular and rural sites. Finally, he brought the results of many unpublished regions ringfort studies to public attention. Stout identified the lowest densities of ringforts in poor lands of west Connaught and north-west Ulster, a pattern that can be equated with the relatively poor agricultural lands. Low densities were also noted on other areas of mountains within the country. What was surprising, however, was the relatively low incidence of ringforts in the relatively rich lands of Leinster. The generally forwarded explanation for this is that this constituted the best arable land in Ireland and that 'ringforts here are more likely to have been removed during eight centuries of tillage activity' (*ibid.* 62) although Stout is not convinced by this explanation. Place-name evidence would tend to support Stout's reluctance. The term '*lios*' or '*les*' is a common placename element throughout Ireland. It literally means 'the space about a dwelling house or houses enclosed by a bank or rampart (Flanagan and Flanagan 1994, 112). i.e. a ringfort. There is low density of its occurrence in place names in west Connaught and north-west Ulster but also over most of Leinster (*ibid.* 111). This would tend to suggest that there was always a low density of ringforts in Leinster. McCormick and Murray (2007, 112-3) argue that the low density of ringforts in Leinster is due to the fact that the building of ringforts due to changes in currency and livestock economy from the ninth century onwards.

On the other hand, recent large-scale excavations in advance of NRA schemes in Meath have certainly revealed a number of ringforts and enclosures otherwise invisible above ground today, which might support the earlier idea of large-scale archaeological destruction along the east coast (Deevy 2005; Fitzgerald 2006;O'Hara 2007; Seaver 2006; Deevy 2008; Kinsella 2008).

In some regions, low densities of ringforts has sometimes apparently coincided with high densities of ecclesiastical sites. In the barony of Morgallion, Co. Meath, Stout (1997, 78-81), using unpublished data of Niall Brady's, noted that there were high ringfort densities in the podzolic and gley soils of the north of the barony, which was primarily suitable for grazing but a much lower density in the arable brown earths of the south of the barony. 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 (1997, 37) noted a similar situation in Co. Down where the low distribution of ringforts in east Down and Lecale corresponded with a high density of ecclesiastical sites.

Stout (1997) analysed the relationship, and contrasts, between ringfort and church location in many areas and was able to make some striking observations. It is unclear, however, as to what degree the patterns and relationships noted in a specific area or locale can be applied right across the country. The analysis of the barony of Garrycastle, Co. Offaly would suggest that the church sites, unlike ringforts, preferred sites that would give them access to 'important arteries of communication' (Stout 1997, 101). There, is, however an assumption that a major early medieval road followed the route of the River Brosna. Certainly, ecclesiastical sites often tend to be at the periphery of ringfort concentrations. In Co. Offaly, church site generally chose lower altitude levels for their location. Stout (1997, 105), also provides examples of a close association between ecclesiastical sites and multivatate ringforts, such as in the case of Seir Kieran, Co. Offaly. Again, one must ask if such close association is the 'norm' across Ireland. Only more detailed regional and local landscape archaeological studies can provide an answer to this – and even then the question always has to be asked this is due to local social and political conditions or whether island-wide models can be constructed from particular case studies.

Ringfort and Cashels: Chronology

Understanding the chronology of ringforts is fundamental to understanding how the various sites functioned and how they inter-related with other neighbouring sites. There is now a general consensus that the ringfort is an early medieval phenomenon and the belief that some were of Bronze age date, e.g. Cush, Co. Limerick (O'Riordain 1940, 176-177) or Currabinny, Co. Cork (O'Kelly 1951, 84), has been largely or wholly abandoned (although it is now clear that Bronze Age settlement enclosures existed in quite large numbers, as revealed by recent infrastructural developments). It should be noted that both the excavators of these sites believed the majority or ringforts were of early medieval date but that the sites provided evidence of the early date of their ancestry. Caulfield (1981, 207-211) argued that several ringforts including Raheenamadra, Co. Limerick(?), Feerwore, Co. Roscommon?, Carraig-Aille, Co. Limerick and Cahercommaun, Co. Clare were of Iron age construction. Lynn (1983, 48-50) provided a strong refutation or this and an allied defence of early medieval dates for these sites. Despite this, Caulfield has raised an important difficulty in the dating of these sites; some aspects of the artefactual evidence is occasionally in variance with the constructional and occupational evidence. Cotter (1999, 80-82) and O'Floinn (1999, 73-79), for instance, in their detailed re-appraisal of the dating evidence for Cahercommaun, Co. Clare discovered that the artefactual evidence provided suggested activity at the site between the fifth/sixth and eight centuries for which there was no definite corresponding cultural occupation layers or constructional features.

Limbert (19**), adopting some earlier ideas, also suggested that ringforts had been an Iron Age phenomenon. The possibility of the existence of ringforts during Iron Age has again been raised by radiocarbon dates from Lislackagh, Co. Mayo (Walsh 1995, 7-8). The preliminary report indicates a circular enclosure 27m in diameter. The site produced a variety of finds including assemblage of lithics that are likely to be of prehistoric dates. Lislackagh also produced glass beads, lignite bracelet fragments and a bronze stick pin, all of which would fall comfortably within the early medieval period. Three circular structures, 3.6-4.6m in diameter were present. The excavator note that 'while no occupation surfaces survive it would appear that these structures are best interpreted as small houses or huts and in the foundation trenches spreads of charcoal appear to represent the remains of the burnt structural timbers' (*ibid.*). Radio-carbon dates from the three foundation trenches produced consistent dates of between the second centuries BC and AD. These structures fall at the lower end of the size range of early medieval round houses, where the average diameter is about 6m (Lynn 1994, 90-91). Their size, shape and clustering show a striking similarity to a series of ring ditch burials found within the ringfort at Duntryleague, Co. Limerick. On balance, we suggest that the evidence suggests that it is more likely that Lislackagh was probably a ringfort built on the site of an earlier burial site.

Stout's (1997, 24-9) collation of radiocarbon confirms the early medieval date for ringforts, narrowing the timeframe to between A.D. 600 and 900. There are, however, some fundamental problems associated with Stout's data. In the first instance the dates he quotes and shows in his distribution diagram (*ibid,* Fig. 2) are calculated at one standard deviation. This implies a probability date accuracy of 68.8% rather than a 95.4% probability when quoted at the more acceptable two standard deviations. The raw radiocarbon data is not produced so cannot be re-calibrated. Secondly, no account is taken for the context of the dates and do not necessarily reflect the construction date of the ring-forts. That said, it is likely that the bulk of the dates reflect the period of occupation of the ringforts. More recently, Kerr (2007, 86-100) re-appraised the radiocarbon dates from ringfort excavations, especially those from Ulster. He concluded that the dating of typical univallate and multivallate sites can be refined to *c.* A.D. 600-850 (*ibid,* 98-9). He demonstrates that the chronology of the raised rath is different from the chronologies of the univallate or multivallate sites, and that it has a mid-eighth to mid-tenth century construction/primary occupation date (*ibid.* 99).

The chronology of cashels has received little attention, perhaps because so few of them have been excavated. Caulfield (1981, 208-9) suggests that Carraig Aille, Co. Limerick was of late Iron Date because of the presence of Late Roman artefacts. Lynn (1983, 48-9) argued that the early material from the site could be attributed to pre-cashel occupation deposits on the site. Some of this material ran under the wall of cashel II but O'Riordain (1949, 45) had interpreted this as being 'nothing more than the temporary dwellings of the fort-builders on the site during the building of the fort'. The presence of pre-cashel occupation on the sited complicates matters greatly complicates the dating of the site. O'Riordain (*ibid.* 108) suggested that site occupation dated from between the eighth and eleventh century and most of the finds are from the latter part of the period.

The same dating problems were encountered at the cashel at Cahercommaun, Co. Clare. Hencken (1938, 2) suggested an early 9th century date for the site on the basis of a silver pennanular brooch. O'Floinn's (1999, 73-79), however, in his re-appraisal, of the metal artefacts form the site identified objects dating between the 5th/6th and 8th centuries as well as the 9th/10th century material. Cotter (2001, 8-81) could find very potential *in-situ* material from the earlier phases. The internal buildings, including, the souterrain seemed to all date to the 9/10th century. The earlier finds were generally from re-deposited material, some used for supporting the souterrains which were partially over ground structures. It may well be that the cashel is contemporary with the souterrains and that the earlier material, as in the case of Carraig Aille, originated from pre-cashel settlement. Souterrain A also appears to be contemporary with the cashel wall and an integral part of the cashel design. The souterrain at its southern end is accessed by a series of steps from inside a hut (Structure 6). It exits at its

northern end through a gap in the cashel wall, which accesses 'a narrow vertical crevice that runs down the whole face of [a] cliff' that extends along the northern edge of the settlement (Hencken 1938, 22). Hencken is of the opinion that the souterrain was built so that the 'occupants of the fort had a way of communicating with the outer world by a more or less secret means' (*ibid.*). There was nothing to suggest that the souterrain was a secondary intrusion. Similarly, the excavators of Leacanabuaile, Co. Kerry, concluded that the souterrain at was contemporary with the cashel wall because the chamber was incorporated within it (O'Riordain and Foy 1941, 90-92).

White Fort cashel at Drumaroad, Co. Down (Waterman 1956) also appears to be of relatively late date. The cashel wall enclosed a single rectangular house with associated souterrain. Finds included a large quantity of souterrain ware 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). The cashel at Rinnaraw, Co. Donegal contained a rectangular house with rounded corners. The radiocarbon dates suggests the 'main phase of activity ... dates to the ninth century' (Comber 2006, 107).   On balance, the rather limited dating evidence for cashels suggest that their dates are similar to raised raths and later than the main building phase of earthen ringforts.

The cultural biographies of ringforts

Archaeological excavation can also be used to trace the cultural biographies of many ringforts – the shifting social and ideological meanings that they would have had across time. There has been much discussion recently considering the longevity of occupation of ringforts after their construction. Mytum (1992, 123) has argued that most seem to have been occupied for a relatively short period of time with some 'perhaps to be measured in decades rather than centuries'. Mytum (1992, 1216) based his conclusion on the fact that only four of sixteen excavated ringforts from Co. Antrim revealed evidence for more than one phase of enclosure bank. Twelve of twenty-one sites from Co. Down and all nine excavated ringforts at Cush, Co. Limerick showed similar results. In this model then, the majority of ringfort enclosures therefore appear to have been only constructed once, with perhaps some limited morphological additions. Evidence for longevity of occupation, however, might be judged by seeking evidence for succession of buildings in the ring fort's interiors. The evidence is equivocal.

In contrast, Stout (1997, 115) has quoted an early poem about the ringfort at Rathangan, Co Kildare, which gives the impression that ringforts were inhabited over long periods of time, as the poem lists seven successive owners. Given the shorter life expectancy of the time one might easily accommodate seven generations within two centuries or slightly more.

Continuity with the past?

Many ringforts are located on the site of earlier settlements. In many instances this may simply be a coincidence, such as the extensive prehistoric material at Cahercommaun, Co. Clare (Cotter 1999). Sometimes the location may be deliberate. Grogan (2005, 126) suggests that the builders of cashels with the ramparts of the Later Bronze Age hill fort at Mooghaun, Co. Clare the 'were positioning the forts in order to support a historic claim to the hillfort'. This does not imply a continuity of settlement. There are, however, many cases where there seems to be early medieval settlement on a site prior to the construction of a ringfort. There are some instances, however, where there may have continuity between the prehistoric settlement and the ringfort. The most obvious example was at Clogher Demesne (Warner 1988) where the prehistoric hillfort was succeeded by a ringfort. The site, however, is unpublished and the chronology is unclear.

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At Dunsilly, Co. Antrim the building of the ringfort rampart was preceded by two phases of habitation, Pre-Rath (PR) A/B and C (McNeill 1992, 81-85). PRA and PRC provided evidence for circular structures and the PRB and PRC produced souterrain ware. It seems, therefore, that an unenclosed settlement preceded the building of the ringfort enclosure. Brannon (1980, 69-70) suggests the possibility of pre-ringfort houses at Ballykennedy, Co. Antrim. A pennanular gully, of 5m internal diameter, predates the bank of ringfort. The date of this gully, however, is unclear. While souterrain ware was 'present in all main layers' it is not stated if this includes the content of the gully. At Coolcran, Co. Fermanagh, some stake-holes 'may have formed a perimeter fence in an enclosure which predated the rath' Williams (1985, 71) but the site was greatly disturbed and the absence of pre-rath habitation layers renders the evidence rather uncertain. At the unpublished site at Aghadegan, Co. Longford, the ringfort bank was preceded by a palisade enclosure which was in turn preceded by a an unenclosed series of round 'structures', presumable houses (Carroll 1991;091). A series of radiocarbon dates implied settlement between the 5th and 10th centuries.

Excavations at the highly significant ringfort at Lisleagh 1 from 1981-5 (Monk 1995) revealed extensive earlier settlement and industrial evidence. Evidence for pre-ringfort activity was revealed in the form of hearths, stake-hole alignments, artefacts, pottery and stone, possibly dating to the Bronze Age. The first ringfort was then constructed in the early medieval period. This was later levelled replaced by a substantially larger bivallate ringfort with a crowning palisade. A number of other ringforts also appear to have been built on preceding Iron Age and Bronze Age funerary and settlement sites though it has not been clearly established if there was continuity of settlement between the ringfort and the Iron Age occupation or if the location of the ringfort at this site was simply coincidental. Earlier high status hillforts were occasionally used as the siting for Early Medieval structures. As noted above, two cashels and associated house sites were also constructed on the ramparts of a Late Bronze Age hillfort at Mooghaun, Co. Clare during the early medieval period (Grogan 1999).

Prehistoric funerary sites also appear to have been occasionally built upon. Excavations at Carrowkeel, Co. Mayo (Zajac 2002) revealed the presence of a ditched enclosure that preceded a ringfort, the fill of which contained charcoal inclusions, suggesting possible cremation remains. A series of cylindrical pits were also uncovered in the north and east quadrants of the enclosure, and, in one, several sherds of coarse-ware were found. The date of this feature was not confirmed but, from typology would appear to be prehistoric. At Carraigaline Middle, Co. Cork, excavations revealed an enclosure measuring approximately 37.5m by 31m, whose ditch had been truncated by a later ringfort ditch (Sherlock 2001). Post-holes, pits, cremation burials and possible funerary pyres lay to the north and northwest of the ditches and indicate both early medieval and prehistoric activity.

Ringforts also appear to have been located on earlier settlement complexes. Excavations at Cloongownagh, Co. Roscommon in advance of the N4 Rockingham-Cortober Road Project (Murphy 1998) revealed evidence for an unenclosed Iron Age settlement dating from the first to the fourth centuries A.D. The site was later enclosed and developed into a ringfort before it was completely backfilled by the tenth century A.D. At Corrstown, Co. Londonderry (Conway 2002), a ringfort was found to have been built on the site of a Bronze Age 'village'.

It seems highly likely that those early medieval sites placed on, or within, earlier hillforts, were deliberately using the earlier site, whether to express continuity (or change) of political power, as would seem to the case at Clogher, or perhaps just making use of the material, as at Mooghaun. It is more difficult to interpret the sites placed on earlier settlement or funerary sites. There may have been some element of continuity of settlement present, but equally the site ringfort could have been accidentally placed on an earlier archaeological monument. The sheer numbers of ringforts in Ireland make it a possibility that, at least in some cases, the site would be placed on, or near, an earlier site which had left no visible remains.

At Ballykennedy, Co. Antrim, for example, a possible early unenclosed settlement seems to have been later enclosed by a ringfort (Brannon 1980). There are other examples of ringforts

being re-used and re-designed in the Early Medieval period. Some sites appear to have associations with later religious or burial sites. At Millockstown, Co. Louth, (See Cemetery/Settlement Section), the earlier ringfort was impacted upon by a series of lintel cemeteries which only slightly post-dated the original site (Manning 1986). Excavations at Ninch, Co. Meath, revealed a complicated site history. The original trivallate ringfort was succeeded by an unenclosed settlement of circular buildings, which in turn was replaced by a large number of enclosures and a lintel cemetery. The final phase of the site's history consisted of the construction of a number of large sub-rectangular enclosures dating to the tenth or eleventh century A.D. (Eogan & Reid 2000 & 2001). Other ringforts also appear to have been re-used for Early Medieval cemeteries. Excavations at Lougboy, Co. Kilkenny (Keeley 1998) revealed that a small cemetery had been inserted into the southeast quadrant and fosse of an early ringfort. A number of ringforts also appear to have been re-used as the burial grounds of those not judged worthy of consecrated ground (e.g. un-baptised children, suicides, shipwrecks and strangers) and these *cillíni* carried on in use through to the twentieth century. This subsequent function, however, only seems to have began during the later medieval period, long after the sites had been abandoned as habitations.

It is possible that some early religious sites may have been converted from earlier secular ringforts. At Moyne, Co. Mayo (Manning 1987), a faint circle (40m in diameter) in the northern half of the large ecclesiastical enclosure (135m x 125m) was taken as representing possible evidence for a preceding ringfort.

Multi-Phase Activity:

Although a large number of ringforts would appear to have only had a single phase of activity, a growing number of excavations have revealed evidence for multi-phase activity during the Early Medieval period. This sometimes resulted in a complete re-organisation of the site. At unpublished Lisleagh I, Co. Cork, and earlier ringfort was razed and replaced by a substantially larger one (Monk 1995, 106). The earlier ringfort seems only to have been of short duration. Monk (*ibid.*) proposes a selection of factor that may have occasioned this re-structuring; growth of family size, increase or rank or increase in unrest necessitating more substantial defences. At Rathgureen, Co. Galway, the second phase of construction consisted of the construction of a bank and ditch within the earlier enclosure thus converting the ringfort from a univalate to a bivalent ringfort (Comber 2002, 150). It was suggested that this transformation was and an expression of 'power and prestige' due to increased wealth of the site's owners (*ibid*, 184).

In some instances the ringfort was replaced by different settlement type. At both Rathmullan, Co. Down (Lynn 1981-2), Deer park Farms, Co. Antrim (Hamlin and Lynn 1988) and Gransha, Co. Down (Lynn 1985) the initial ringfort was replaced by a raised rath. At Deer park Farms there was continuity of settlement during as the settlement changed but the evidence on the other sites is less certain. At Dunsilly, Co. Antrim, there was a clear gap between the ringfort phase and the later Anglo-Norman motte phase (McNeill 1991-2, 110-112). In other instances the enclosed settlement gave way to an unenclosed settlement. At Knowth, Co. Meath the enclosed 'ringfort' settlement at Knowth, dating to the 7-8th centuries gave way to an open settlement dating to the 10-11th centuries (Eogan 2007, 1-5). The site was abandoned between the two phases. The later phase was characterised by a large number of houses and souterrains, many built on the in filled ditches of the earlier phase.

Occupation across time

Other sites have undergone transformations in their morphology over a period of time. The excavations of a bivallate ringfort with associated souterrain at Whiterath, Co. Louth revealed that the double-banked enclosures were constructed over two separate phases (Ó Drisceoil 1999). In most cases when univallate ringforts are extended into multivallate ones, this is done by the addition of an external bank-and-ditch. At Rathgurreen, Co. Galway, however, the site was made into a bivallate by the addition of a bank-and-ditch inside the original univallate circuit (Comber 2002). Some sites changed their shaped entirely, for example at

Dowdstown 2, Co. Meath, a circular ringfort was re-modified and expanded into a larger D-shaped enclosure (J. Kinsella pers. comm.).

Many ringforts have produced little or no evidence for buildings, which is unsurprising given the flimsy nature of the round houses which are characteristic of the earlier part of the period; 'round wicker or post and wattle structures without regular roof supports' (Lynn 1994, 85). The later rectangular houses tend to be more visible as they generally have 'dry stone and/or turf lower walling' (*ibid.*). Many sites, such, as Garranes. Co. Cork produced scatters of post-holes and stake that did not produce coherent house plan Ó Ríordáin 1942, 86-87). Garryduff, Co. Cork, produced evidence of two contemporary sub-rectangular houses, but stratigraphically later paving stones and hearths provides evidence for subsequent occupation but with no further evidence for building (O'Kelly 1963,22). Ballycateen, Co Cork, too produced incoherent scatters of post-holes but the presence of a hearth over a post-hole implied a succession of habitation (Ó Ríordáin 1943, 12). The primary pre-raised rath phase of Deer Park Farms, Co. Antrim has produced the best evidence for early medieval rural wooden houses due to the waterlogged nature of its deposits. This produced only one phase of house building activity comprising two conjoined house and a single house, all round in form (Hamlin and Lynn 1988, 45-56). The contemporary bank enclosure, however, showed two phases of construction (*ibid* 45).

In some ringforts there was clear evidence for a succession of houses but it is difficult to ascribe actual timescales to these successions. With the exception of Scandinavian period Dublin we have no idea of the life span of a wooden structure. In Fishamble St Dublin the houses were replaced ever decade or two (Wallace xxx) but this must be regarded as a pretty extreme case. At Lisduggan, Co. Cork a rectangular clearly post-dates a circular house Twohig (1990, 12). At Leacanabuaile, Co. Kerry there was a similar succession of round and rectangular houses (Ó Ríordáin and Foy 1941, 92). Rectangular houses succeeded round house at Dunsilly, Co. Antrim, but the round houses pre-dates the ringfort (McNeill 1992, 81-85). The greatest evidence for structural longevity is on those ringforts which are superseded by raised raths, such as Rathmullen, Co. Down (Lynn 1981-2) and Deerpark, Farms, Co Antrim (Hamlin and Lynn 1988, Lynn 1987). On these occupation can range from the seventh century to the Anglo-Norman period. In these instances, however, one is getting a secession of different monument types at a single location. At Rathmullen a presumed earthen ringfort is replaced by a raised rath and lastly by a motte. It is not certain if there was continuity of settlement throughout this period.

Longevity can also be demonstrated by the artefactual evidence, as has been demonstrated at Cahercommaun, Co. Clare and Carraig Aille, Co. Limerick (above) but in these cases there is evidence of pre-cashel occupation on the site. The situation is further complicated by the presence of later artefacts, such as medieval glazed pottery on ringforts. The question of the longevity of ringforts can only be adequately addressed by a comprehensive radio carbon dating programme on ringforts with substantial surviving habitation levels.

The end of ringforts?
A number of ringforts also display evidence for being converted into Anglo-Norman mottes in the late-twelfth century A.D. O'Kelly (1962) has noted how a ringfort at Beal Boru was later remodelled by the Anglo-Normans around A.D. 1200. Beal Boru was a defended settlement that is historically recorded as being destroyed by Toirdelbach Ua Conchobair in A.D. 1116 (O'Keeffe 2000, 21) supporting the idea that this ringfort site continued to be used at a late stage in the early medieval period. Excavations at Dunsilly, Co. Antrim (McNeill 1974 & 1975; McNeill 1991-2) show evidence for a pre-ringfort phase, a ringfort phase, and a phase in which the ringfort was converted into a motte. Other univallate raths that appear to have been converted directly into mottes were excavated at Antrim (McSparron 1998) and Killybegs Road, Antrim (McSparron 1998). Excavations at Rathmullan, Co. Down revealed an important high status settlement that dated from the sixth/seventh century A.D, based on imported E-ware pottery. The site was converted into a raised rath in the eight/ninth century,

and then in the twelfth century, the mound of the raised rath was further heightened and turned into a motte.

Interpreting the Social, Economic and Ideological Roles of Ringforts and Cashels

A key question in early medieval settlement research is to enquire about the social, economic and ideological roles of ringforts; what were they used for; who were they used by and how did they act to shape social relationships in the landscape. Who was responsible for the building, occupation and use of ringforts and given that they are so numerous, can we pose questions of the settlement landscape itself from their evidence? In terms of function, the interpretation of the role and function of ringforts in early Irish society has changed over the years, with a shift in perception from a military to a primarily domestic function (Kerr 2007, 4-8).

It is undoubtedly the case that early Irish society experienced warfare and political turmoil more or less continuously. One only has to read the annals to recognise the numbers of raids, battles and violent deaths every year, some of which must have impacted upon the ordinary people. However, ringforts despite the modern term, were not military fortifications (although some may have been strategically located and used as such). An analysis of the military or defensive potential of ringforts was first outlined by Mallory and McNeill (1991, 196-198) and their conclusions merit repeating. 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 any defensive greatly reduced 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 banks 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 enclosures are no more effective than single one. 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". Finally they note that 'the perimeter of a rath thirty metres in diameter is about 100 meters 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 ringforts were not made for defensive purposes but for social and ideological reasons.

However, it is undoubtedly the case that ringforts offered some measure of protecting their inhabitants in an era of cattle raiding and occasional conflict. McCormick (1995, 34) and McCormick and Murray (2007, 109-10) have argued that the primary aim of the enclosures were to protect cattle in times of cattle raiding. On the basis of documentary evidence from later medieval Scotland it was noted that the objective of cattle raiding was to steal cattle while not unnecessarily endangering those involved in the activity. Thus, in times of cattle raiding the bringing of the livestock into the ringfort could usually have been an effective deterrent. This does not mean that livestock were kept within the ringfort on a regular basis but only in times of heightened cattle-raiding activity. Cattle warranted such protection because they were the basis of wealth at this time.

The role and function of raised raths, however, is not so clear. Unlike univallate raths, the morphology of raised raths meant that they could not so easily function for the protection of livestock. The statistically significant association of such sites with good quality agricultural land suggests that the inhabitants may have employed a more mixed arable-pastoral farming economy than that seemingly practised by the inhabitants of the univallate raths (Kerr 2007,

115). The evidence also suggests that the raised raths are generally of later date than the univalate type (see below).

Recently, Lynn (2005, 14-17) produced another radical proposal for the origin and function of the ringfort. He 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 ringforts spread like a rash all over the landscape (*ibid.*, 16). He sees no evidence for invasions at this time or a change in the type of warfare practiced in Ireland. An examination of the annalistic evidence led him to the conclusion that the main exceptional feature to effect Ireland during these centuries was a series of plagues and pestilences. These, are generally regarded a having had led to widespread mortality at the time. Lynn suggests that as a reaction to this the nobility attempted to quarantine themselves; 'In many 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 ringfort of the landholdings, farming class may have been delayed while a social reorganisation resulting from the decimation of the of population by the first plague took place .. or it could be that the main stimulus for ringfort construction by the free farmers had to await he second major outbreak of plague in 664'. Lynn feels that plague provided the catalyst for constructing defences against unwanted intruders but that a later stage these defences came to demonstrate status perhaps 'copying the sacred form of ecclesiastical or talismanic purposes and to invoke divine protection' (*ibid.*).

Certainly, some explanation should be sought for why the phenomenon of the ringfort arose in such a short period of time. The chronology of ringforts (see above) indicates that there was no gradual evolution of the monument type. They were a short lived settlement type and there must be a specific reason for their occurrence. McCormick (1993) argues that the genesis of the ringfort was related to the introduction of advanced dairying technology at the beginning of the early medieval period. Advances in dairying would have led to great significant increases in food production which would 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 [6th-7th century] may be a period when the growing stress of population on the demand for land, accompanied by increasing cattle raiding, led to the development of the ringfort' (*ibid.* 37). The problem with this theory is that 'revolution' in dairying at his 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).

It seems most likely that early medieval ringforts were the physically bounded, enclosed dwelling places of particular social units - i.e. extended families – and that the architecture of the enclosure was socially meaningful in that they usefully and visibly defined the domestic space. In many cases, ringfort 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 ringfort may have been an event to be associated with a particular person. Multivallate ringforts – particularly those associated with lords and aristocracy this signalled by their architecture the ability of the powerful to gather resources and a labour force to construct his residence. In early Irish sources, a king could be recognised by the "ramparts of vassalage" that surrounded him. In other words, the building and use of ringforts that emerges as a phenomenon in the 6th-7th century may largely be something that emerges out of a period of radical social change; with population increase, an economic 'boom' in agriculture and other political, social and ideological changes leading 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 ringforts would also have represented differences in the social hierarchy. It seems obvious that multivallate sites were of higher status than the smaller univalate examples. The old Irish law tracts, however, do not explicitly outline a correlation between status and the number of enclosures in a ringfort. The archaeological evidence, however, 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 ringforts such as Garranes, Co. Cork (Ó Ríordáin 1942, 134-139) and Ballycatteen, Co. Cork (Ó Ríordáin 1943, 35) but is generally absent from univallate sites. There are, however, exceptions. Extensive evidence for fine metalworking was found at the univallate ringfort at Garryduff, Co. Cork (O'Kelly 1963, 95-99). The presence of glass vessels (*ibid.* 77) and relatively large quantities of imported ware (*ibid.* 103-112) might provide independent evidence that Garryduff was a high status site.

The consideration of status and wealth in terms of multivallate and univalate ringforts only is rather crude in its approach and cannot reflect the complexity of social stratification at this time. The various early laws that deal with status record three grades of king (Kelly 1988, 17-18), four of nobility (*ibid.*, 28) and either five or six grades of free independent farmer, according the *Críth Gablach* or *Cáin Aicillne* (Patterson 1994, 366-7). To this can be added the 'semi-freeman' or 'tenant at will', the 'hereditary serf' and the slave (Kelly 1988, 11). How many of these grades would have lived in ringforts? The *Críth Gablach* indicates that the *les* (farmyard) of the king was surrounded by a rampart. Mytum (1992, 131) argued that ringforts were the residences of 'the aristocracy, together with the few of the highest grade of freemen who possessed base clients', but this has not generally been accepted (as befits a monument class numbering in the tens of thousands). The documentary sources would tend to support aspects of this assertion as O'Kelly (1997, 363) 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'. Clients, therefore, were the prerogative of the nobility. The single exception was *flaith aithig* (commoner lord) a person in transition between a commoner and lord; he 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 ones noble status. That said, the free farming classes also needed to protect cattle, since most of their cattle were in effect the property of the nobility who provided them as part of the institution of clientship. Unlike the nobility, however, they needed to build their own ringforts.

Stout (1997, 113-4), however rejects this view. While admitting that the law tracts make no mention of ringforts belonging to the non-noble grades of society he argues that the dimension of ringforts given in the sources are greater than most surviving examples, and that consequently the small univalate ringforts must belong to the free non-nobles classes, i.e. the *bóaire* and *ócaire*. The problem is that particular section of the *Críth Gablach* dealing with ringfort dimensions (MacNeill 1923, 305) may only be referring to those of a king. Stout's distributional analysis of the different types of ringforts is based on the assumption that ringforts were the settlements of both the free farming classes and the nobility (below).

The development of large raised raths from the mid-eighth century onwards (below) may also have been linked to a desire to display wealth and status. Raised raths account for approximately 10% of all Early Medieval sites in counties Armagh, Londonderry and Tyrone (Kerr 2007, 74) – a figure not dissimilar to the percentage of multivallate sites in this area. Figures from Co. Fermanagh show almost 20% of sites are classified as platform or raised raths, however in the case of this county it is highly probable that a large percentage of these sites are platform raths proper - i.e. created by scarping the top of a drumlin – and that this form of construction was popularly utilised to prevent the site becoming waterlogged.

The Excavated Archaeological Evidence for Social Status of inhabitants of Early Medieval Ringforts

The archaeological excavations of early medieval ringforts provide abundant evidence for people's houses (see above), daily life, work and practice and their material culture possessions and equipment. All of this excavated evidence can also be brought to bear on social interpretations. It is interesting then that most of the theoretical models of ringforts and social status (see below) have tended to focus on morphology, function, siting and distribution, while the evidence revealed by archaeological excavation has tended to be less well incorporated.

Ringforts of Low Status Grades
Can we identify lower social grades from excavated archaeological evidence? It may be significant that the early medieval material culture recovered from most univallate ringforts tends to be basic and relatively sparse (with perhaps the exception of the souterrain-ware region, predominantly in counties Antrim and Down). Finds are usually restricted to basic utilitarian objects such as iron knives, needles, nails as well as rotary querns, hone stones, flint and chert debitage, spindle whorls and needles. This is also occasional evidence for metal-working in the form of slag. Personal and dress items are generally restricted to copper-alloy and iron ringed pins, glass beads and bracelets, lignite bracelets and bone combs and pins.

A total of 128 ringforts excavated to varying extents between 1930-2004 revealed limited stratigraphical details and very small quantities of domestic, agricultural or industrial items. that revealed only very small quantities of domestic, agricultural or industrial items. It is possible that some of these sites may represent high status settlements where only partial excavation has taken place. It is also likely, however, that the principal function of many others may have been the corralling of animals, for example Garryduff I, Co. Cork (O'Kelly 1962) or Magheraboy, Co. Sligo (Ryan 2001; O'Neill 2007). Excavations at a univallate ringfort at Shewis, Co. Armagh (Brannon 1980) 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 and the excavator suggested that it may represent an animal enclosure.

It is also possible that some excavated sites with a small number of domestic artefacts may represent ringforts for the lowly status. Croom East (Shee 1974) and the univallate ringfort at Drumbroneth, Co. Down (Brannon 1980) may fall into this category. There are likely to be many more examples that appear to represent evidence for animal corrals and ringforts of lowly status. They all have a number of characteristics in common including evidence for a relative short period of occupation as well as material-culture of lowly quality and quantity.

Ringforts of Ordinary Farmers
Early medieval ringforts are often seen as the homesteads of social units engaged in agricultural toil in the lands around them. A further 91 EMAP sites were excavated containing ringforts and which revealed archaeological evidence which could be described as 'significant' in terms of excavated material. Items of personal adornment as well as domestic and agricultural artefacts were more prevalent at these sites. Approximately 40-50% of these sites also contained evidence for hearths/furnaces and industrial artefacts used for iron and metal production. Over 50% of these sites revealed evidence for post-and-wattle, sod-walled and stone buildings while souterrains were found in a number of places. Souterrain-ware pottery was also a frequent occurrence at many of these sites while a small number of ringforts revealed evidence for corn-drying kilns and gatehouses. Metalled, cobbled or paved surfaces were also revealed at these sites. Important sites in this category include Dunsilly, Co. Antrim (McNeill 1974 & 1975; McNeill 1991-2), Lisnagun, Co. Cork (O'Sullivan 1987, 1988 & 1989; O'Sullivan *et al.* 1998) and Dunbell Big 5 & 6, Co. Kilkenny (Cassidy 1990)- (See Appendix for List). It is also possible that some of the non-circular shaped enclosures at Lusk and Cahircalla More were of a similar status.

These sites could represent the homes of the lower social grades of freemen described in the seventh and eighth century historical sources. The univallate enclosure at Lisnagun, Co. Cork for example, had a diameter of 35m and enclosed a central round house, outbuildings and three souterrains. The quantity of domestic/agricultural and personal times as well as animal bone was limited leading the excavator to suggest that Lisnagun was typical of the majority of univallate raths. It is possible then that many of these sites represent the homesteads of *Ócaire* and *bóaire* farmers. The evidence from the polygonal shape enclosure at Sluggary (Shee 1973 & 1974) might also indicate a farmer of modest means.

Ringforts of Prosperous Farmers and Nobility
The *bóaire* 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' (*flaith*) grade, which is further subdivided into five classes[1] with the *aire déso* at the bottom and the *aire forgaille* at the summit of this hierarchy (Kelly 1988; 1997). The *aire coisring* is sometimes included at the base of the *flaith* grade, and other times at the summit of the *boairig* grade.

The ringforts of the upper-*boairig* grade, or lower-*flaith* grade would therefore be expected to be reasonably similar. Finds indicative of status, such as brooches and decorated ringed pins, might be expected at these sites. Items also indicative of foreign contacts or suggestive of gift exchange, possibly related to free client relationships between a lord and client farmer, might be represented by the presence of imported pottery such as B-ware or more probably E-ware. Non-ferrous metalwork, such as copper-alloy, and/or glass working may also be uncovered. These sites also tend to be occupied for a longer period of time than the ringforts of lesser status.

A number of raised raths would appear to fit these criteria, however in many cases they had matched the criteria prior to the site being raised. Imported E-ware pottery, typically datable to the sixth to seventh century A.D, for example, was found in the univallate phases at both Gransha and Rathmullan (both Co. Down). A number of these sites, such as Big Glebe, Co. Londonderry (Bratt & Lynn 1976; Lynn 1988), also appear to have been constructed after the immensely complex social hierarchy of the *Críth Gablach* seems to breakdown.

Other candidates for *bóaire* level ringforts may include Aghadegnan, Co. Louth (Carroll 1991), Inch & Ballyrenan, Co. Down (MacManus 1997), Glebe Site 43 in Tully, Co Dublin (Seaver 2000 & 2001) and the recently excavated site at Leggetsrath West, Co. Kilkenny (Lennon 2006). Certain cashels, such as Kildreenagh, Loher (O'Flaherty 1980-84, 1985), Ballyegan (Byrne 1991), Rinnarraw (Fanning 1987-92) and Cathair Fionnúrach, Ballynavenoor (Gibbons 1994) may also be interpreted as the settlements of relatively wealthy *bóaire* farmers. The site at Ballynavenoor also revealed evidence for B-ware and E-ware pottery that could indicate potential contacts and trading activities. Evidence for field patterns, souterrains, kilns, ferrous and non-ferrous metalworking, as well as E-ware, was recovered at Roestown indicating a site of potential lordly status. The multivallate enclosure at Rosepark, Balrothery is likely to be of similar high-status as it displayed a similar set of archaeological evidence.

Social landscapes? Interpreting early medieval social organisation from ringforts

A number of attempts have been made over the years to interpret the settlement patterns of the Early Medieval period. These have tended to focus on the more visible sites – especially ringforts, cashels, churches and crannogs – and any future research into this area must also take into account the presence of those sites which have left less of an archaeological impact on the landscape – i.e. settlement/cemeteries, unenclosed sites, and non-circular enclosures (to be discussed below). The differing chronology of these sites should also be considered when attempting to model socio-economic factors.

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[1] '*aire déso, aire echtai, aire ard, aire tuisi* and *aire forgaille* (Richey 1879, 321; MacNeill 1923, 296).

The preferences of ringfort constructors in relation to environmental factors and geographical locations was first statistically tested in the Skibereen area of Co. Cork (Fahy 1969), and a similar test was later applied to the study of raths in south Co. Donegal and Dingle, Co. Kerry (Barrett 1973). These tests hoped to give some insight into the function of the individual ringforts and how they fitted into a wider settlement pattern within a specific area. Similar surveys have been undertaken in the southern midlands (Stout 1991), Co. Down (Robinson 2000) and north-west Ulster (Kerr 2007), and showed that environmental factors, such as altitude and soil quality, were influential in determining the location of ringforts. Without resorting to excavation it was therefore possible to suggest that the majority of ringforts were closely associated with the immediate farming landscape. Some sites, however, did not necessarily fit this pattern and these sites needed to be considered in their putative socio-political setting. Stout (1991; 1997, 122-127; 200, 94-101) also attempted to equate ringfort types and the grades of society outlined by the early documentary sources. Using cluster analysis of the size and form of extant ringforts he identified a series of 'cluster groups' which attributed to different grades. His study, which was based on fieldwork in counties Tipperary and Offaly, led to settlement models which are impossible to either prove or disprove but certainly attempt to move our understanding of ringforts onto a new level.

In particular, in his influential work on the baronies of Clonlisk and Ikerrin in counties Tipperary and Offaly, he used computer analysis to cluster the various raths into six groups and then attempted to assign each group to a certain Early Christian social grade (Stout 1991, 238; 1997, 127):-

- Cluster 1, small univallate forts, at distance from ecclesiastical sites – low-status sites
- Cluster 2, smaller univallate forts, closer to ecclesiastical sites – also low status sites
- Cluster 3, bivallate forts, large overall diameter, low internal diameter, possible 'royal sites', found in association with low-status sites
- Cluster 4, large univallate forts, low altitude, near boundaries, strategic forts?
- Cluster 5, univallate forts, low density, medium social status
- Cluster 6, univallate forts, on level ground, medium social status

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. The large, multivallate ringforts (cluster 3) 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. Stout's Cluster 4 sites (large well-defended, univallate ringforts) 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.

Stout suggests that the other ringforts were occupied by the farming grades. The small, simple ringforts that tend to be found in close proximity to high-status sites may have been the settlements of the *Ócaire*, or small-farmer. The 'typical' univallate ringfort, however, with an average internal diameter of approximately 30m and situated on good agricultural land, may have been the dwellings of *bóaire*, or strong-farmer. Stout suggests that the farms associated with these sites may be the antecedents to modern townlands.

This model supports findings from earlier studies. Thomas McErlean's work in mid-west Co. Antrim examined the spatial relationship of raths, and focused on their 'tendency to form discrete groups in association with peripheral churches and crannogs' (McErlean 1978, 10). This work also drew attention to the proximity of univallate raths to modern townland boundaries (*ibid.* 32), as well as a similar proximity of multivallate raths and modern baronial boundaries (*ibid.* 29), suggesting some connection between the putative territories of these sites and modern landscape divisions. Later quantitative studies done on ringfort distributions in Co. Down (Robinson 2000), and Co. Fermanagh (Kerr & McCormick 2004) have largely supported the results from Co. Offaly and Co. Tipperary (Stout 1991).

Stout's normative model is attractive because it explains differences in ringfort morphology and siting on the basis of social organisation and it interprets the settlement landscape on the basis of interaction between different social groups. There are some problems with the model. It fits well with the reasonable-to-good quality lands of southwest midlands and regions of southern Ulster, but does not necessarily fit with those parts of Ireland where there is a more dispersed pattern of agricultural-quality land - and an accompanying low density in ringfort settlement (e.g. O'Sullivan and Downey (2007, 35) - especially in the west of the island such as Co. Clare, or Co. Donegal (Kerr 2007, 76).

The second major flaw with this model is that it assumes contemporaneity of sites. If sites were not occupied at the same time, different processes could have lead to these distributions, and thus the model deliberately ignores the historical landscape, the changing social and economic conditions experienced by any population group across time. This problem has not been fully addressed by archaeological research in any case. Although there has been a significant increase in the numbers of radiocarbon dates obtained from excavated ringforts, these dates have tended to come from isolated examples in different parts of the island, and thus make it difficult to interpret whether the ringforts in a specific area were occupied contemporaneously or consecutively. The more recent NRA-funded programmes of archaeological excavations trough particular regions (e.g. north Cork, Meath, Kilkenny) may enable a closer inspection of the contemporaneity – or otherwise – of early medieval settlements.

Kerr (2007) has taken a different approach to the study of ringfort distribution. His study area (the counties of Armagh, Donegal, Fermanagh, Londonderry, Monaghan and Tyrone), and the number of sites involved (3000+), is substantially larger than any so far undertaken, making it more representative of actual ringfort distribution. The secular early medieval sites were subdivided into univallate raths, multivallate raths, raised raths and cashels, and the relationships of site-types with altitude bands and soil associations were tested. Although specific local topographical factors may have influenced the positioning of individual sites, there is a marked similarity across the study area. The preferences for altitude and soil associations in northwest Ulster are similar to those found from other regional studies undertaken in Ireland, suggesting a degree of uniformity in site function and status across the island.

Univallate raths tend to be found on moderate quality soils, located between 60m and 150m (Kerr 2007, 75), and cashels tend to be found on similar quality land, but at a higher altitude (150m to 210m) (*ibid.* 83). In contrast, raised raths show a tendency to be found on good quality lands between 60m and 90m (*ibid.* 80), and multivallate raths show no clear correlation. This has been interpreted as marking a difference in function between univallate raths and cashels (predominantly pastoral farmsteads) and raised raths (predominantly arable farmsteads). The similarity in preference for soil quality shown by the builders of univallate raths and cashels suggest that these sites had similar functions and possibly status (*ibid.* 83). Typological differences between these sites may simply be indicative of the local availability of building materials, although it is possible that other not yet fully resolved factors, such as site-type chronology (see above), may explain the different preferences of construction. Raised raths show similar altitude and soil quality preferences to Early Medieval ecclesiastical sites (*ibid.* 80, 84), which have also been interpreted as being reliant on arable agriculture (Stout 1997, 80). Multivallate raths have long been argued to be high status sites. Their lack of association with the hypothetical farming model, and their positioning in the boundaries of putative contemporary polities, support this claim (Kerr 2007, 82).

In general Kerr's findings support and build on the distribution model proposed by Stout (1997). The majority of sites can be interpreted as the farmsteads of small farmers engaged in pastoral agriculture, with the contemporary high status sites identified with multivallate raths. Unlike earlier studies, however, Kerr incorporated a chronological element. He showed that raised raths are a significantly later site type than univallate and multivallate raths (*ibid.*

98-99). This throws into question the validity of settlement modelling that assumes the synchronicity of all early medieval sites.

Conclusions

A tiny percentage (a minimum of 280 sites, or only 0.6%) of the estimated 45,000 known ringforts have been excavated. One should be wary of making definite judgements about the chronological and morphological developments of ringforts over time based on such a small sample as "less than 1%". The almost random nature of excavations - especially development driven excavations – and the similarity in the results of these excavations, however, suggest that, although small, the sample is representative of the site-type. Most univallate sites are relatively simple single-occupation phase sites, however many high status sites in particular - many of which were raised ringforts – have more complicated site origins and histories.

Early medieval settlement enclosures other than ringforts/cashels

Introduction – rethinking the dwelling enclosure in early medieval Ireland

It is clear that early medieval people inhabited enclosures of varying types, ringforts, cashels, crannogs, promontory forts, monastic enclosures and enclosed Norse towns. In early medieval legal sources and narrative literature, houses and dwellings are commonly only described as being located within an enclosed area known as a *les* (translated as 'farmyard, or courtyard'), thus allowing of a range of forms, shapes and sizes (Kelly 1997, 364). On the other hand, archaeologists have tended to more commonly use the derivatives of the terms *ráth* ('earthen rampart') and *caisel*, when they are not simply using the term 'ringfort' (which of course, was both a word and concept entirely unknown to the early medieval Irish) and have therefore tended to see ringforts as the 'normal' form of enclosed space. In a sense, early medieval people may have seen themselves as essentially living within an enclosure, whether it was know as a *rath, caisel, dún* or *les*, all being in case primarily enclosed spaces that essentially bounded and defined the household or domestic space from the outside land, though of course amongst a farming community, both would be used for livestock, crafts and industry and a range of occupation activities.

There has to be a sense then that archaeologists' modern classifications of monuments such as enclosures may be overriding the knowledge, sense or perception that people in early medieval Ireland had of the various dwelling enclosures they inhabited. It is also true that it is only recently that archaeologists have tended to take the view that a ringfort is essentially a perfectly circular space. As Jonathan Kinsella (forthcoming) has pointed out, earlier scholars were less dogmatic. Ó Ríordáin's (1942) *Antiquities of the Irish Countryside* merely states in its "simplest form the ringfort may be described as a space *most frequently* [our emphasis] *circular* surrounded by a bank and fosse or simply by a rampart of stone. Proudfoot (1961, 94) stated the raths or cashels were generally circular although 'oval or rectilinear' examples were known. Edwards (1990, 14) stated that raths could be circular, oval or pear-shaped. However, crucially Stout (1997,14-15) emphasised the circular nature of ringforts, largely as part of his classificatory system for his computer analyses and this has tended to dominate recent perceptions of early medieval enclosures (see Kinsella, forthcoming).

However, it is also true that there are early medieval enclosures that do appear to be different in terms of size and scale. When Nancy Edwards (1990) published her comprehensive overview *The archaeology of medieval Ireland,* there was generally a clear separation between ringfort and monastic or ecclesiastical enclosures, with the latter being generally larger. The large oval Phase 3 enclosure at Millockstown, Co. Louth enclosing souterrains and burials – clearly not comfortably located within accepted definitions of a

ringfort - was therefore seen as some form of ecclesiastical site that replaced a ringfort (Manning 1985). The large circular enclosure at Marshes Upper (Site 5), Co. Louth excavated in 1982, had an internal diameter of *circa* 100m (McCormick and Crone 2000). This again appeared to be too large for a ringfort and the excavators preferred to regard it as an ecclesiastical site - but there was no actual evidence for this. The only interior feature discovered was a souterrain. The excavations of the last 10-15 years, however, have totally shaken our accepted understanding of secular and ecclesiastical settlement in Ireland. The ringfort no longer holds the monopoly for *enclosed secular settlements* and the emergence of the 'cemetery settlement' has also blurred the border between ecclesiastical and secular

The survey identified approximately a further 107 'enclosures' from 86 other EMAP defined sites of early medieval or potential early medieval archaeological significance. These sites were simply described as 'enclosures' by the authors of the Excavations Bulletin reports, and no further information is as yet available on them. The morphology of many of these sites could not be established so it was not possible to describe these sites as raths, cashels, non-circular shaped or other forms of enclosure. Many of them were excavated beside ringfort sites and could have been associated with these places as fields, lanes or other features, while others were revealed during large-scale development projects that created open spaces that enable archaeologists to see beyond the boundaries of individual ringforts or raths. We will need to reassess in future how we define a ringfort/rath as well as non-circular shaped enclosures to help address the growing complexity of the early medieval settlement enclosure dataset.

Identifying other forms of early medieval settlement enclosure

Excavated early medieval ditched enclosures
Recently, Coyne and Coyne (2003, 17-18) coined the term 'plectrum-shaped' to describe the early medieval enclosed site at Newtown, Co. Limerick. This heavily truncated site has a maximum diameter of *circa* 50m, a ditch some 3m wide and causeway entrance 5m wide (Coyne 2006, 64-66). Its interior contained a figure-of-eight house as well as a series of gullies and pits that may be of later date. There was no evidence of an interior bank, although this may have been truncated. There was evidence of a palisade trench 2-3m outside the north-eastern side of the bank. A segment of human skull was found in the base of the house slot trench which was interpreted as being a 'foundation deposit' (*ibid*. 68). The house slot produced a date of AD 700-1015 (2siga) with its central post providing a date of AD 797-1280 (2 sigma). The base of the ditch provided a 2 sigma date of AD890-1030. The enclosure size and the form of the house would suggest a ringfort-type settlement but the shape is clearly anomalous to the 'classic ringfort' type. However, it is difficult to know if the Newtown 'plectrum-shaped enclosure' constitutes a new early medieval 'site type'. Other irregular enclosures have also been discovered but not of the same shape as Newtown.

The early medieval enclosure at Killickaweeney, Co. Kildare was of a flattened 'heart shape' with diameter of 60-70m (Walsh and Harrsion 2003, 34-6). The ditch was an average 2.5m wide and 1.5m deep (Walsh 2002; 0924). The site contained two rectangular houses and produced finds that could be dates to the 9-10th centuries. The site produced extensive evidence for iron working. Unusually the sites produced a series of 'refuse pits' the contents of which indicate that they are of early medieval date. The largest measures 2.5m by 1.6m x 1.1m deep. Large pits are extremely rare on early medieval sites. The Killickaweeny examples produced large quantities of animal posts and artefacts but their original use is not known. One, however, may have been a 'cistern'. It measured 2.2m in diameter and was 1.8, deep and 'even in the driest conditions it was permanently full of water' (*ibid.*) It may have played some industrial function, as it was adjacent to an extensive metalworking area.

Two early medieval enclosures at Balriggen, Co. Louth – discovered as part of the Dundalk bypass - again do not conform to the 'classic ringfort' model. The oval 'western' enclosure (45x50m) produced no interior features and was interpreted as 'stock corral' (Delaney and

Roycroft 2003, 19). The main entrance was at the west but there were a series of 'mini-causeways' at the eastern side that may have allowed 'people access to the stock area while preventing cattle from crossing the ditch' (*ibid*). To the exterior of the main entrance is a wide funnel feature comprising of two ditches (ibid. 16) that would have facilitated the driving of livestock into the enclosure. The larger 'eastern' enclosure consisted of an outer oval enclosure with an interior enclosure 50m diameter. This is therefore a site comprising two enclosures rather than a multivallate ringfort. The outer enclosed area contained some curious features. These included some D-shaped 'partition' enclosures and what the excavators refer to as a 'grand drove way' consisting of two parallel ditches between the outer and inner enclosures.

The inner ditch, which showed evidence of re-cutting, was up to 4m wide and 1.4m deep. It contained large quantities of souterrain ware. No conventional house sites were present within the inner enclosure. Two substantial rectangular post-hole structures near the western edge are clearly not houses and may represent grain stores. There was evidence of metal working associated with some troughs but the most conspicuous feature of the site was a cemetery containing over 400 skeletons. The burials ranges in date between the 6th/7th centuries and the 12th/13th centuries (Fibiger 2005, 110; O'Sullivan and Stanley 2005, 151-2) Stout and Stout (2008, 74) consider the site to be a 'secular cemetery' and this hypothesis will be considered further below. The irregular shaped enclosures at Johnstown, Co. Meath, will also be considered in this section. The large quantity of souterrain ware at Balriggan suggests that the site dates to the latter part of the early medieval period.

The early medieval site at Laytown, Co. Meath (McConway 2002, 17-19) saw a succession of early medieval settlements within enclosures, but nothing that conforms to a ringfort. The earliest early medieval phase (Phase 2) comprised some circular wattle and daub houses varying from 4.6-10m in diameter associated with a series of large pits containing 'domestic and industrial waste'. Phase 3 consisted of a series of sub-rectangular enclosures. The earliest was 24.6m in diameter; the later was 50m by 30m. The latest was 80m by 60m in diameter. The first two enclosures had re-deposited material in the ditches that implied internal banks that had been deliberately slighted. There was no evidence of bank material in the latest ditch but a fairly sterile 10m band within the bank implies the presence of a bank. The finds suggested a 9th/10th century date for these rectangular enclosures. A ring pin from a feature that post-dated the second ditch and preceded the third was of a 10th/11th century type similar to those found in Viking Dublin. The interiors of these enclosures were truncated and there was no houses, industrial or craft areas within them.

It might be suggested here that that the movement to rectangular enclosures may be a feature of the later centuries of the early medieval period McConway (2002, 19) suggests that the rectangular shapes of the Laytown enclosures might be due to Viking influences. The site certainly has a coastal location and its inhabitants may be trying to emulate a *longphort* but unfortunately our knowledge of these settlements in themselves is extremely limited but the evidence from Woodstown, Co Waterford suggests a 'half-oval' enclosure rather than an rectangular shape (O'Brien and Russell 2005, 118-9).

The early medieval enclosed settlement at Roestown, Co. Meath, discovered as part of the M3 road scheme, also was comprised of a succession of curvilinear and rectangular enclosures (O'Hara 2007). The site was divided into Area A and B which was truncated by the modern roadway. In Area A the site began (Phase 1) as a series of 'small irregularly shaped fields ... the largest of these enclosed an area of 25m by 25m' (*ibid*. 143). There were no signs of 'domestic occupation' associated with the fields but finds in included E-ware (6th/7th centuries). This phase produced a 2 sigma radiocarbon date of AD 630-710 (O'Sullivan and Stanley 2007, 161). These enclosure ditches were subsequently backfilled and replaced by a large U-shaped enclosure (approx. 40x30m) with some radiating ditches (Phase 2). This U-shaped enclosure produced a 2 sigma date of AD 620-690. In Phase 3 the ditch was backfilled and re-cut to produce a rectangular enclosure (approx 35x40m) which has yet to produce carbon-dates but was attributed an 8th-11th date by the excavator (O'Hara 2007,

144). In the thirteenth century AD (Phase 4) a smaller rectangular enclosure (15x10m) was built within the Phase 3 enclosure. Phases 2 and 3 do not appear to have produced evidence of internal houses but the ditches contained substantial quantities of animal bone which indicates some measure of domestic settlement. There were lesser quantities of bone in the Phase 4 enclosure ditch. Site B again produced also produced a succession of enclosures. The main feature again was a D-shaped enclosure (approx 70mx50m) which, the ditch of which was modified on several occasions. The earliest construction produced a date of AD 530-650 while the latest phase producing a date of AD 770-980. There were separate habitation and industrial areas on the site. The latter included corn-drying kilns and fine metal work production.

These enclosed early medieval sites – Newtown, Co. Limerick; Balriggan, Co. Louth; Laytown, Co. Meath, and Roestown, Co. Meath – indicate some of the emerging complexity in settlements and reveal that our focus on circularity may be misplaced and anachronistic. Table 3:5 illustrates the range of shapes and contexts in which 'enclosure' sites have been excavated in recent years mostly. Plectrum-shaped, D-shaped, quadrangular shaped, square-shaped and rectangular shaped enclosures have all been excavated, some of which were associated with other conjoined enclosures. The site at Rosepark, Balrothery (Baker 1999:162; Carroll 2001, 334), a multi-ditched enclosure, is described as follow: 'the shape of the enclosure, is, as far as is known, without parallel'. The main features seem to have been souterrains and corn-drying kilns. The presence of E-ware implies a 7th-8th century date.

Table 3:5 below provides a list of some potential examples of non-circular shaped enclosure which have been identified through excavation in recent years. The list is by no means exhaustive or complete.

Table 3:5 Examples of Excavated Non-Circular Shaped Enclosures 1930-2004

Name	County	Exc. Year(s)	Enclosure Description	Reference
Balgatheran 1	Louth	2000	'Enclosure'	Chapple 2000:0638
Ballycasey Beg	Clare	1999-2000	N/A	Carey 2000:0043
Ballycasey More, AR44C	Clare	2002	Sub-rectangular & 2 conjoined rectangular enclosures	Murphy 2001:045 O'Neill 2002:0079
Ballyconneely	Clare	2000	Sub-rectangular	Breen 2000:0046 & 2000:0047
Ballynacarriga	Cork	2001	Main Square enclosure with associated rectangular extension	Noonan 2001:237, 2001:115 & 2001:116
Ballynqe	Antrim	1973	Quadrangular	Lynn 1973:0001
Ballywee	Antrim	1974/1980-84	Conjoined enclosures	Lynn 1974:02;1980-84:0005;1993:002;1994:006
Cahircalla More, AR128	Clare	2003-04	D-Shaped enclosure	Hull 2003:0127 & Taylor 2004:0141
Castlefarm	Meath	2004-06	Annexe attached to outer enclosure	O'Hara 2004:1198, O'Connell 2006
Conva	Cork	1992	Bivallate enclosure with rectangular enclosure	Doody 1992:021
Corrstown	Derry	2002/2003	'Enclosure'	Conway 2001:259, 2002:0386 & 2002:0387
Curraheen 1	Cork	2001/2002	Conjoined enclosures	Danaher 2002:0296
Dowdstown	Meath	2005/2006	Rectangular field system attached to enclosure	Linnane 2004:1221, Deevy 2005; Deevy 2006
Gortatlea	Kerry	2000	N/A	Connolly 2000:0434, 2001:569, 2001:571 & 2001:572
Killickaweeny, AE23	Kildare	2002	Sub-Oval/Heart-Shaped with enclosure	Delaney 2002:0932; Walsh 2002:0924; Walsh & Harrison 2003

Name	County	Exc. Year(s)	Enclosure Description	Reference
Lusk	Dublin	**?CHECK**	Sub-Square/D-shaped	Giacometti 2006
Newtown	Limerick	2001	Plectrum-Shaped	Hayes 2001:787; Coyne 2001:79; Coyne & Collins 2003
Roestown	Meath	2005/2006	Oval and later Sub-rectangular enclosure	Dempsey 2004:1336; O'Hara 2007
Rosepark, Balrothery	Dublin	1999/2000-01	Multivallate site (irregular form)	Baker & Swan 1999:162; Baker 1999:163; Carroll 2000:0209 & 2001:334
Sheephouse	Louth	2000/2001	'Enclosure'	Moore 2001:1055
Sluggary	Limerick	1973 & 1974	Polygonal	Shee 1973:0025 & 1974:0029 Shee Twohig 2000

Excavated early medieval palisaded enclosures

To date, early medieval settlements have generally divided into earthen enclosures defined by ditches and banks, by stone walls or as unenclosed settlement sites. Recently, a new type of early medieval site has emerged; a settlement site enclosed by a circular wooden palisade. The site at Ballynagallagh, Lough Gur, Co. Limerick began as a series of seemingly unenclosed round houses dating to the 5th-7th centuries (Cleary 2006, 31). The site was then enclosed by a double timber or wooden palisade dating to the 8th – 9th centuries which had a substantial estimated perimeter of 380m (*ibid.* 36). Early medieval settlement activities continued on the site until the 12th century. It was not possible to ascertain if this settlement was continuous or episodic. There was no evidence for a bank and ditch phase of the settlement.

At Adhadengan, Co. Longford a palisade enclosure also preceded the ringfort phase (Carroll 1991;091; 1993;152). There seems to have been direct continuity between these two enclosures because part of the palisade was later used as part of the 'multiple gateway system' of the ringfort.

An early medieval palisade enclosure was recently excavated in its entirety at Lowpark, Co. Mayo as part of the N5 Charlestown Bypass project (Gillespie 2007). The site seems to have begun as an unenclosed iron working area. This site was then enclosed by two concentric palisades, the inner one being about 30m in diameter and the outermost being 35m. The excavator believed that both to have been contemporary. The main internal features were a souterrain and an unusual sunken rectangular building that displayed some intriguing similarities with the late Viking period sunken houses of Waterford (Walsh, 1997, 48-52). The construction of the souterrain appears to be contemporary with the inner palisade. There were steps at both ends and one end seems to have allowed access immediately outside the inner palisade. The evidence for ironworking was extensive and the site produced some 1.34 tonnes of slag. All stages of the ironworking process seem to be represented. The presence of a souterrain would suggest a post AD 800 date for the construction but the only find was a small piece of gold filigree suggesting a 6th -7th century date (*ibid.* 23).

Chronology and Occupation

Are there any chronological implications in these emerging non-circular enclosures? As already discussed, the great majority of univallate and bivallate ringforts appear to date to between about AD 600 and AD 850 while raised raths appear to date from between the mid 8th and mid 10th centuries (see above). Radiocarbon dates from many of the non-circular enclosures identified above seem to place their origin to a time somewhat later than multivallate and univallate raths, and this possibly also suggests that they were occupied either contemporaneously with, or slightly later than, platform raths. This overall provisional dating evidence tends to suggest that the majority of non-circular sites were constructed and occupied perhaps a century later than the typical ringfort chronology of *c.* 600-900 A.D. A few non-circular enclosures may have been constructed earlier than this (e.g. Ballynacarriga), and

a certain number may have carried on in existence into the eleventh century (e.g. Roestown, Castlefarm, Raystown, Laytown and Ballynacarriga), but the provisional dating of these sites suggests they had their primary occupation phase from *c.* 700 – *c.* 1000 A.D. This general date is further supported by the presence of souterrains at a large number of these sites including Roestown, Ballynacarriga, Ballywee, Gortatlea and Rosepark.

A number of sites including Killickaweeny, Co. Kildare (Walsh and Harrison 2003) and Ballycasey More, Co. Clare (Murphy & O'Neill, 2001) have been radiocarbon dated to between the seventh/eighth centuries to the tenth century. The material culture from similar sites such as Cahircalla More, Co. Clare (Kinsella 2007a, Taylor 2004) and Ballyconneely, Co. Clare (Breen 2000:0047), and potentially Ballynoe, Co. Antrim (Lynn 1973) also appears to date these sites to the latter part of the first millennium AD. Some, however, are clearly contemporary with the earlier ringforts. Some of the burials from Balriggan, Co. Louth provide 6/7th century dates while the E-ware and radiocarbon dates from an earlier phase at Roestown, Co. Meath, suggests a similar date. Ballynacarriga, Co. Cork (Noonan 2001;115) has produced radiocarbon dated from the 5th-7th centuries onwards. Similarly the bivallate site with an associated rectangular enclosure from Conva, Co. Cork (Doody 1992, 021; Doody 1995ref) was dated by the director to the Late Iron Age/early Christian period.

It is also true that many non-circular enclosures (like at least some ringforts) have revealed evidence for multi-phased activity with periodic re-cutting of ditches and the addition of extensions being a common feature of their occupation. At Roestown, Co. Meath, this is particularly the case, where one gains a sense of an early medieval homestead or farmyard where ditches and enclosures are dug, backfilled and re-cut on many occasions over the years. This may occasionally be indicative of upward social mobility, as settlements expanded in size according to the improving fortunes of their inhabitants, so that rather than the enclosure shape representing a *different settlement type*, their remodelling was the outcome of various and changing social, domestic, industrial and agricultural needs of the people who lived in them. At Ballynacarriga, Co. Cork, excavation found that the rectangular enclosure situated on the slopes of a gentle hill was a later extension of the square enclosure located in the valley floor. There was also evidence of re-working of the primary square enclosure on this site, where the original roundhouse was succeeded by a rectangular building (Noonan 2001). Evidence for phases in the development of the enclosures was also discovered at other enclosures with associated secondary enclosures/annexes (e.g. Ballycasey More, Dowdstown and Castlefarm (O'Connell 2006). Excavations at Rosepark, Balrothery, Co. Dublin, revealed a high status multi-ditched site of a number of different phases which the excavator noted did 'not fall into any known category' (Carroll 1999 & 2000). It consisted of a complex of curvilinear and linear ditches of unknown parallel. The evidence from the archaeology included E-ware, souterrains and milling activity, which all suggests that the site was used for a long period of time.

A small number of sites like Roestown, Co Meath (O'Hara 2007), Castlefarm, Co. Meath (Kinsella 2007a) and Balgatheran 1, Co. Louth (Chapple 2000:0638) appear to have been re-used in the later medieval period while it appears that the ditches at Newtown, Co. Limerick (Coyne & Collins 2003) was filled in sometime between the eleventh and the thirteenth centuries AD. Ironically the type-site for plectrum-shaped enclosure, Newtown, was found to have only one principal phase of occupation, and in this sense to be atypical of many of the non-circular enclosures. The rather enigmatic site of Ballynoe, Co. Antrim (Lynn XXX), may be included along with these non-circular enclosures, but it contained no evidence for phases of activity, and may have had some 'ritual' function.

Enclosure Size

The majority of non-circular enclosures are larger than ringforts/raths, with sites like Killickaweeny, Co. Meath (60-70m), Ballyconneely, Co. Clare (70m by 32m), Balgatheran 1, Co. Louth (approximately 70m; Breen 2000:0047) and Castlefarm , (inner - 90m by 70m; outer - 120m by 100m) (Kinsella, forthcoming; O'Connell, forthcoming) in particular all

comprising enclosures substantially larger than 'typical ringforts'. Even the smaller-scale sites such as Newtown (maximum width 50m; Coyne 2006, 64), or the D-shaped enclosure at Cahircalla More, Co. Clare (38m wide; Taylor 2004:0141), are larger than the typical ringfort.

Topographical siting

Coyne and Collins (2003, 18-19) noted that their plectrum shaped enclosures, such as their site at Newtown, Co. Limerick and other unexcavated examples at Lahinch, Co. Clare and Tralee, Co. Kerry were located on the summits of hills. This, they argued, contrasted with ringforts in the area, which tended to have mid-slope locations. Other irregular-shaped enclosures, however, indicate more varied locations. Ballynacarriga, Co. Cork was located along a valley floor with a later additional earthwork extending up a gentle hill (Noonan 2001:115). Balriggan, Co. Louth occupied a 'gentle knoll on low-lying ground, at the bottom of a topographical basin (Roycroft 2003, 16). Killickaweeney, Co. Kildare is located on a 'sharp incline on a north-facing slope' overlooking a former wetland area (Walsh and Harrison 2003, 34). Roestown, Co. Meath is in a low-lying area adjacent to a former marsh (O'Hara 2007, 141). Rosepark, Co Dublin was situated on a hill-slope (Baker 1999:162). It is therefore possible that the variations in form from the classical sub-circular ringfort may have been the result of specific topographical factors which influenced the shape and layout of the resultant enclosure, rather than any deliberate design on the part of the original builder.

The evidence for social status

The material culture remains from these non-circular enclosures suggest that they represented a range of activities and functions. Some sites, like Roestown, Co. Meath revealed a wide range of personal items indicative of a high status site with contacts beyond the shores of Ireland (O'Hara 2007). The excavator of Rosepark, Balrothery, Co. Dublin (Carroll 2001:334) argues that the site would have been of likely to have been the site of a high status settlement on the basis of the large amounts of E-ware present. Castlefarm, Co. Meath was probably a high status site, as indicated by the discovery of brooches, pins and a shield boss (O'Connell 2006, 19-21). The domestic items (some glass beads, bone combs and brooches and pins) recovered from Killickaweeny, Co. Kildare, although clearly an important and industrially busy site, could hardly be regarded as indicating high status. (glass beads and comb? The excavator does not suggest it is high status).

It is presently unclear if the level of industrial activity noted on these sites differs significantly from other. There is evidence for metalworking on several sites. Several areas of ironworking were present at Killickaweeney, Co. Kildare and it was suggested that the iron ore processed may have come from a nearby bog (Walsh and Harrison 2003, 35-36). The site produced some possible evidence for a shaft furnace and this would suggest ironworking on an extensive rather than domestic scale. At Balriggan, Co. Louth (Delaney and Roycroft 2003, 19), the evidence for metalworking was extremely limited while here is no mention of metalworking at Newtown, Co. Limerick (Coyne 2006). At Roestown, Co. Meath (O'Hara 2007, 149) there was evidence for fine metalwork in the form of ingot moulds, crucible fragments and trial pieces but such activity does not appear to have been of an intensive nature. The presence of cereal drying kilns at Rosepark, Co. Dublin (Baker 1999:162; Carroll 2001:334) is evidence for on-site processing of agricultural produce, a feature that is generally absent from ringforts.

Early Medieval Crannogs

Definition

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 1998, 2001, 2004;

O'Sullivan, Sands and Kelly 2007; Fredengren 2001, 2002). Modern archaeological classifications as we have seen above, however, are more about the ordering of information in the present than the reality of life in the past. A broader definition of 'crannog' would include 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, 2002). It is also the case that modern archaeological classifications and semantic debates on the topic 'what is a crannog?' ignore the fact that we investigate 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 (i.e. the archaeological monument we call 'crannogs').

Early medieval crannogs excavated 1930-2004

The EMAP survey established that 29 crannógs were excavated between 1930-2004, a surprisingly large number. They were excavated within the counties of Louth, Longford, Westmeath, Meath and Offaly in Leinster, Mayo and Sligo in Connacht, Derry, Tyrone, Cavan and Down in Ulster and Clare in Munster. They were excavated within the counties of Longford, Mayo, Tyrone, Westmeath, Meath and Sligo. This included excavations of the early medieval crannog at Moynagh Lough, Co. Meath, with its houses, workshops, palisades and metalworking areas. The early medieval crannog at Sroove, Co. Sligo was significant in that it revealed that not all crannogs were of high social status. The early medieval crannog at Bofeenaun, Co. Mayo revealed evidence for a focus on ironworking on this remote island. In more recent years, the Discovery Programme's lake settlement project has been investigating crannogs on Lough Kinale, Co. Longford, including the early medieval sites at Ballywillin, Derragh; following on from the National Museum of Ireland's investigations of a crannog at Tonymore North.

Table 3:6 Excavated Crannogs 1930-2004

Name	County	Year	Significance	No.	Reference
Ballinderry I	Westmeath	1932	Highly Significant	1	Hencken 1936
Ballykean	Offaly	2003	Highly Significant	1	Stanley 2003:1509 & 2004; Turrell & Whitaker 2007
Ballynahinch twd, Ballinderry II	Offaly	1933	Highly Significant	1	Hencken 1941–1942
Ballywillin, Lough Kinale	Longford	2002	General	1	Fredengren 2002:1266 & 2002
Bofeenaun	Mayo	1992	Significant	1	Moloney & Keane 1992:141
Tullyveery, Clea Lakes	Down	1956	Significant	1	Collins & Proudfoot 1959
Coolure Demesne	Westmeath	2004	Significant	1	O'Sullivan & Sands 2004:1725; O'Sullivan, Sands & Kelly 2007
Cro-Inis, Lough Ennell	Westmeath	1937-38?;1989	General	1	Macalister 1937-38; Farrell 1989:098
Deredis Upper, Lough Inchin	Cavan	1942	General	1	Davies 1946
Derragh, Lough Kinale	Longford	2002	General	1	Fredengren 2002:1268 & 2002
Frenchgrove	Mayo	1998	General	1	McDermott 1998:488
Island MacHugh, Baronscourt	Tyrone	1985-86	Significant	1	Chambré 1937, 1939 & 1946; Davies 1950; Ivens & Simpson 1986
Knocknalappa	Clare	1937	General	1	Raftery 1937 & 1942-43
Lagore, Dunshaughlin	Meath	1934-36	Highly Significant	1	Hencken 1950-51

Name	County	Year	Significance	No.	Reference
Lough Enagh	Derry	1940	Uncertain	1	Davies 1941
Lough Eskragh	Tyrone	1973	General	3	Williams 1973:0034
Lough Faughan	Down	1951/1952	Significant	1	Collins 1955
Moynagh Lough	Meath	1980-89/1994-95 & 1997	Highly Significant	1	Bradley 1982-83, 1984, 1985-86, 1990, 1990-91, 1991 & 1999
Newtownlow	Westmeath	1984-86	Significant	1	Bourke 1980-84:0201;1985:58;1986:78
Rathroeen Lough	Mayo	2002	Uncertain	1	Gillespie 2002:1407
Relough, Tullyleek Lough	Tyrone	2001	General	1	McQuillan 2001:1236 & 2002
Robinstown I, Lough Ennell	Westmeath	1990-92	Significant	2	Brady 1990:119;1991:129;1992:180
Sroove	Sligo	1997-99	General	1	Fredengren 1997:470; 1998:470; 1999:811 & 2002
Togher, a.k.a. Danesfort Demesne, Lough Atrain	Cavan	1942	General	1	Davies 1946
Tonymore North, Lough Kinale	Longford	1987	General	1	Fredengren 2002:1281 & 2002
Whitewood Lake	Louth	1955	General	1	Ó Ríordáin 1955

Chronology

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 Chris Lynn's influential paper on 'early crannogs' (1983) 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 (1997), 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 classic crannogs - small palisaded islets in open-water - were being built in the Late Bronze Age, the early Iron Age, the early Middle Ages, and the late medieval period. 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; Lough Kinale, Co. Longford and at Clowanstown, Co. Meath. It is also clear that Late Bronze Age and early Iron Age palisaded islands that we more confidently term 'crannogs', were being built and used between the ninth and fourth centuries B.C. 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 exciting discoveries on Coolure Demesne crannog, on Lough Derravaragh, Co. Westmeath have revealed a multi-period crannog on which an oak palisade was constructed *c*. AD 402, in the Iron Age/early Christian transition (O'Sullivan, Sands and Kelly 2007).

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. Some smaller late medieval crannog islets and platforms may have been peasant seasonal dwellings, or refuges for the poor, or hideouts for outlaws, and some may have been used as late as the eighteenth century.

Distribution

The geographical distribution of Irish crannogs is now broadly understood. Early studies were undertaken by William Wakeman in the north-west (1870-1a; 1870-1b) and George Kinahan in the west (1868-9), and, more recently, by Oliver Davies in south Ulster (1942). The Archaeological Survey of Ireland in the Republic (conducted by National Monuments Section) and the county surveys (conducted by the Environment and Heritage Service) in Northern Ireland have established that there are, at the very least, 1200 identified sites. This figure should be seen as a conservatively low estimate given the lack of dedicated archaeological surveys and also since crannogs can easily be obscured by wetland vegetation, reeds, carr woodland or by even 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 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.

Crannogs are situated in various different types of modern environment, both deep and shallow lake-waters, lakeshore and peatlands. A smaller number of crannogs have been found in rivers, estuaries and in coastal wetlands.

Morphology and Construction

Recent archaeological surveys indicate that crannogs vary widely in morphology and construction, ranging in size from relatively large sites (18-25m in diameter), to smaller mounds (8-10m in diameter). Crannogs of various sizes and types can be located in close proximity perhaps indicating sequences of development or contemporanity of usage. There appears to be some degree of regional and local variations in construction, but most crannogs have been shown to be built 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, working spaces, middens, wooden revetments, palisades, and stone walls, defined entrances, jetties, pathways and stone causeways. Crannogs have also produced large assemblages of artefacts, both as a result of archaeological excavation and as discoveries made both accidentally, or by design (e.g. treasure hunters in the 1980s). These material assemblages have included items of clothing (shoes, textiles), personal

adornment (brooches, pins, rings), weaponry (swords, spearheads, axes, shields), domestic equipment (knives, chisels, axes).

Social, Ideological and Economic Roles of Crannogs

Traditionally, scholars have interpreted the social and economic '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). There are numerous early medieval (and later) historical references that many 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, it is easy to see why scholars have often suggested that crannogs fulfilled a military or fortress role.

The archaeology and the early Irish historical sources both suggest that at some crannogs were high-status or even royal sites. There is evidence for high-status feasting, and also evidence that they may have been used as re-distribution centres for the patronage of crafts and industry. As with multivallate ringforts, 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 1950-1) and Island MacHugh, Co. Tyrone (Davies 1950; Ivens & 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). For instance, Moynagh Lough, Co. Meath (Bradley 1991), 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 (Moloney & Keane 1992) appears to have been devoted to the processing of iron ore by specialist blacksmiths.

The Early Medieval church was undoubtedly embroiled in the same social and economic relationships performed and expressed through architecture and material goods. Although, Early Medieval crannogs are usually only thought of as secular dwellings, given the significant role of the church in the contemporary settlement landscape, it is also likely that many 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.

On the other hand, 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. In this and other archaeological surveys around Ireland, 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. These 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 vermin and wolves. In other words, different types of crannogs were built, used and occupied by various social classes in early medieval Ireland.

Others may have been fishing or industrial platforms, used periodically, seasonally or for particular specific tasks. Finally, it should be allowed that some early medieval crannogs might not have been dwellings at all. Some may have been boundary or route way markers, denoting the edges of political territories. Some may have been cairns or mounds – known in Early Medieval Ireland as *fertae* - to commemorate ancestral burials, battles, persons or significant events, or even by-products of other activities - e.g. temporary heaps of building stone or field clearance cairns.

Virtually every detailed site investigation of an Irish Early Medieval crannog, however, has revealed at least some evidence for what might be called 'dwelling activity'. While there are several traditional and useful explanations of the uses of Early Medieval crannogs - largely revolving around ideas of 'island refuges', the 'social display of power' and of 'island dwellings' - it is likely that depending on their size, location and history of use, different crannogs were used in different ways.

Early Medieval Promontory Forts

Background

Raftery (1994, 48) has suggested that there are approximately 250 promontory forts around the coastline of Ireland with the largest concentration in the west and east. Few of these have been excavated, but most that have been investigated have revealed some Early Medieval activity and settlement evidence. There is still some uncertainty about the origins of these sites and there has been a tendency to state that they are of Iron Age origin (Edwards 1990, 41). The evidence for this is, however, has yet to be convincingly demonstrated. The use of *chevaux de fries* are an Iron Age form of defence in Iberia (Raftery 1994, 61) and this has led to the suggestion that coastal promontory forts with defences in Ireland, i.e. Dun Dubhcathair, on Inis Mór, Co. Galway and Doonamo, in Co. Mayo may also be of similar date. However, a similar form of defence is present at the cashel at Ballykincara, Co. Clare, which is likely to be of early medieval date. The excavation of the defences at Doonamo (Casey 1999), unfortunately produced no dating evidence. The massive coastal promontory fort at Drumsallagh, Co. Dublin, enclosing some 40 acres, is thought to be Iron Age on the basis of some Samian Ware discovered in plough-soil (Raftery 194, 208) and the rumoured recovery of Roman era objects by treasure hunters (O'Sullivan and Breen 2007, 106).

Excavated Promontory Forts 1930-2004

At least five promontory forts archaeologically excavated between 1930-2004 have revealed evidence for early medieval habitation or activity. They comprise Dunbeg Fort, Co. Kerry (Barry 1981), Larrybane (Childe 1936; Proudfoot and Wilson 1962) as well as Dun Aonghasa, Kilmurvy, Inis Mór, Co. Galway (Cotter 1995; 1996), Knoxspark, Co. Sligo (an inland promontory fort; Mount 1994) and Dalkey Island, Co. Dublin (Liversage 1967-67; Doyle 1998).

Archaeological excavations at Dunbeg, Co. Kerry (Barry 1982) and Larrybane, Co. Antrim (Childe 1936; Proudfoot and Wilson 1962) dated their construction to the early medieval Period. The excavators of Larrybane suggested that the site was constructed about AD 800 (*ibid.* 107). The presence of souterrain ware in the primary habitation layers (*Ibid.* 93) supports the late date for the site. Datable finds were absent from Dunbeg but a series of

radiocarbon dates suggest that the period was occupied during the 9th-11th centuries. There was, however, evidence for earlier settlement in later prehistory. A shallow ditch that partially underlay the early medieval stone rampart provided a Late Bronze Age date (Barry 1981, 307). No house remains were found at Larrybane. At Dunbeg, much of the surviving interior space was occupied by a stone *clochán*, while a souterrain extended outwards from the rampart entrance.

A promontory fort (or more accurately a cliff-top fort) at Dún Aonghusa, Inishmore, Co. Galway was excavated by Claire Cotter from 1992-94, as part of the Discovery Programme's Western Stone Forts Project. The defences consist of a massive inner wall and three lesser outer walls with a *chevaux de fries* between the third and fourth wall. Most of the settlement evidence was confined to the inner enclosure (Cotter 1995; 1996. This consisted of a series of huts and extensive settlement evidence, the great majority of which was of Late Bronze Age date. Early medieval deposits were limited and confined to a few discreet parts of the fort interior (Cotter 1996, 14). Some of the Late Bronze age deposits and structures, however, run under the inner enclosure wall (Cotter 1993, 4: 1996 4-5). The date of the wall is, however, somewhat unclear. Some Bronze Age layers run under the wall but there is also evidence that re-deposited Bronze Age material was placed beneath the wall, possibly to provide a stable and level foundation (*Ibid.* 6). It was not possible to investigate the interior of the massive interior wall. In one area, however, some of the original wall has been removed and it was possible to investigate some of its foundations. The rampart wall appears to have been built up of vertical 'skins' of walling, here of which were identified (*Ibid.* 5; Cotter 1995:125). While the outer skin sat on Bronze Age material, the innermost sat on bedrock. It is possible that the core of the rampart is of Bronze Age date but it was greatly modified during the Early Medieval Period. It is difficult to understand, however, where there is so little habitation material, especially food refuse, surviving form this later period.

An inland promontory fort was excavated at Knoxspark, Co. Sligo by Charles Mount (1994, 22-24) is the first of its kind to be excavated. Most such sites have upland locations (Raftery 1996, 45-48). Knoxpark is low lying, enclosed on three sides by the Ballysadare river and on the other by a silted marshy lake. The promontory fort was rectangular in shape and measured 23m north-south by 19m east-west. The landward side was defended by a substantial bank and external ditch. Inside the bank "are a number of surviving oval hut platforms and the excavations have revealed large quantities of butchered animal remains, iron tools and nails, and vast quantities of iron smelting slag and furnace bottoms" (*Ibid.* 23). Mount states that the defences are of Iron Age date but does not provide his evidence for this. He then states that the changed to one of ritual usage:- "the funerary use commences with the construction of an oval cairn of massive boulders" (*Ibid.*). This contained a cremation burial. Subsequent to this an inhumation cemetery was established with 187 burials being uncovered. One burial was radiocarbon dated to 8th-10th century (Mount 1994:206). The chronology of this site needs to be further informed by a strategy of radio-carbon dating. Two inhumation burials were found under the enclosure bank (*Ibid.* which might suggest that the defences might be of Early Medieval date. If this is the case, and the Iron Age habitation is a similar date he site may in fact be a 'settlement cemetery' in the form of an inland promontory fort.

A promontory fort was excavated on Dalkey Island between 1956-59 (Liversage 1967-68). The excavation established that Dalkey Island had been intermittently occupied in the Neolithic and Bronze Age in the form of temporary encampments. The site was then subsequently re-occupied in the early medieval period after a lull during the Iron Age. Three potential phases of activity with a time-span of anything from 2-3 decades to 2-3 centuries were identified dating to the early medieval period. A possible field system and evidence for fortification possibly dates to this period. A significant early medieval shell midden was uncovered below the bank of the promontory fort. Amphora sherds and three bronze pins were recovered in this feature. A large collection of imported B and E ware pottery was recovered during the excavation. Two Samian sherds were also uncovered. A number of native pins and brooches were also recovered. A house, midden and hearth were

subsequently constructed after the promontory fort. Finds from these features suggest an early medieval date. A ring pin and early medieval pot was recovered in a context overlying the midden during a period when the house had disappeared.

The promontory fort was situated immediately north of St. Begnet's church whose existing remains comprise an early unicameral structure with surviving western and eastern pitched gables. Liversage dug a trial trench at right angles to the north wall of the church in 1958 and identified a boundary wall and gatepost associated with the early ecclesiastical site. An associated gatepost was also identified. 11 burials were uncovered which were aligned parallel with the early church. Two possible phases of internment were identified. The four deepest burials appear to have belonged to a regularly laid out graveyard in rows at right angles to the church wall. An 11th century Norman coin was found a little above one of the burials.

The social, economic and ideological roles of promontory forts

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. 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.

Dunseverick (*Dun Submarine*) and the maritime fleets of the Dál Riada are mentioned on several occasions in the annals for the seventh and eighth centuries A.D. In Adomnán's seventh-century *Vita Sancti Columbae* there is a mention of a dangerous whirlpool at a place known as *Coire Breccáin*, off Rathlin Island, understood to be on the sea route between Ireland and Scotland. In Cormac's Glossary, dated to *c.* A.D 900, there is a description of this eponymous Breccán - a merchant of the Uí Néill - who used to trade with fifty currachs between Ireland and Scotland and whose fleet was lost in these dangerous seas.

The promontory fort at Dunbeg, Co. Kerry (Barry 1981) is dramatically situated on a cliff top on the steeply sloping, south side of the Dingle Peninsula. The location provides extensive views across Dingle Bay, and its inhabitants could have watched any coastal traffic moving around the Kerry coast. The site would also have been high visible to maritime travellers, dominating entry into the bay itself. The site was clearly occupied over several phases - perhaps as early as the Bronze Age - and in its latest form was defined by four closely spaced banks and ditches, with a stone house and souterrain in the small, enclosed interior. As noted above, radiocarbon dates from the occupation deposits suggest that this phase of the site was inhabited from the ninth to the thirteenth century A.D. Most of the animal bones from the site were identified as domestic - cattle, sheep and pig – but there were also small amounts of goose and cod. The Early Medieval monastic site of Reask at the end of the peninsula has produced imported E-ware pottery, probably brought by Gaulish wine-traders, suggesting that the Dingle Peninsula had a long history 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).

Surprisingly, despite their coastal location, promontory forts often produce relatively little evidence for the exploitation of coastal resources. The early medieval promontory fort at Larrybane, Co. Antrim (Proudfoot & Wilson 1961-2) was situated at the edge of good agricultural land and its economy was mostly devoted to sheep rearing in particular, as well as cattle herding. There was, however, some evidence of the exploitation of coastal fauna represented by the bones of cormorant, shag, puffin, curlew and merlin, fish bones of cod, saithe, pollock, whiting and wrasse, along with limpets, winkles and oysters. The impression gained is of an essentially agricultural community, who occasionally may have trapped birds and collected eggs on the cliffs, and caught fish in the sea below. The presence of cod might also suggest that use of ocean-going craft fishing offshore (O'Sullivan and Breen 2007).

Early Medieval Souterrains

Introduction

Souterrains are artificial underground or semi-subterranean passages and chambers. Mark Clinton's (2001) recent book provides the most comprehensive overview of the subject. It has been suggested that there are approximately 3,500 souterrain in Ireland and increasing numbers are known now from excavations of early medieval settlements in the years since Clinton's review. The great majority of souterrains are dry stone-built although earth-cut and rock-cut examples are also known. Earth-cut souterrains have nearly all been discovered in the Cork region while rock-cut souterrains are found in both in the Cork area as well as North Antrim. Wooden-lined souterrains are also known (Clinton 2001, 10-12). Dry-stone built souterrains are found in clustered areas across the island and comprise over 95% of the known total (*ibid*. 37). (*ibid*. 33).

Distribution

The distribution of souterrains across the island is very uneven, being concentrated in North east Ulster, north Leinster, east Connaught and south Munster (Clinton 2001, 34) . Large areas of the country are devoid of them. Buckley (1998), using Ulster as a case study, argues that concentration of souterrains represented heartlands of political groups. Warner (1986) rejected this interpretation. Clinton (2001, 39), too rejected Buckley's stating that "souterrain concentrations cannot be accepted as indicators of political areas". Clinton detailed consideration of their distribution, however, did not produce a satisfactory explanation either for their presence or absence in certain areas. He considers their distribution at some length and could only conclude the distribution "would not appear to have been simply determined by either topographical or technological considerations alone" (*Ibid*. 44)

Excavated Souterrains 1930-2004

The statistics from the EMAP survey indicate that 247 souterrains (247/3,500 or approximately 8% of all recorded souterrains) were excavated on 187 EMAP defined sites in 15 different counties from 1930-2004. The highest concentration of excavated souterrains was in Louth and Meath in North Leinster, Antrim in Ulster and Cork and Kerry in Munster. Very few souterrains were excavated in the historic kingdom of Leinster (Kildare, Wicklow, Carlow, Wexford and parts of Dublin and Offaly) as well as in parts of the west and northwest of the country.

Table 3:7 Excavated Souterrains and associated EMAP Sites per County 1930-2004

County	Exc. Souterrain	EMAP Site	-	County	Exc. Souterrain	EMAP Site
Antrim	35	30	-	Laois	1	1
Armagh	3	2	-	Limerick	8	2
Clare	2	1	-	Longford	1	1
Cork	27	18	-	Louth	48	40
Derry	7	6	-	Mayo	5	5
Donegal	3	3	-	Meath	45	26
Down	11	11	-	Roscommon	2	2
Dublin	7	1	-	Sligo	1	1
Fermanagh	1	1	-	Tipperary	3	3
Galway	1	1	-	Tyrone	3	2
Kerry	18	15	-	Waterford	5	5
Kilkenny	1	1	-	Westmeath	8	7
			-	Wexford	1	1
Total	247	186	-			
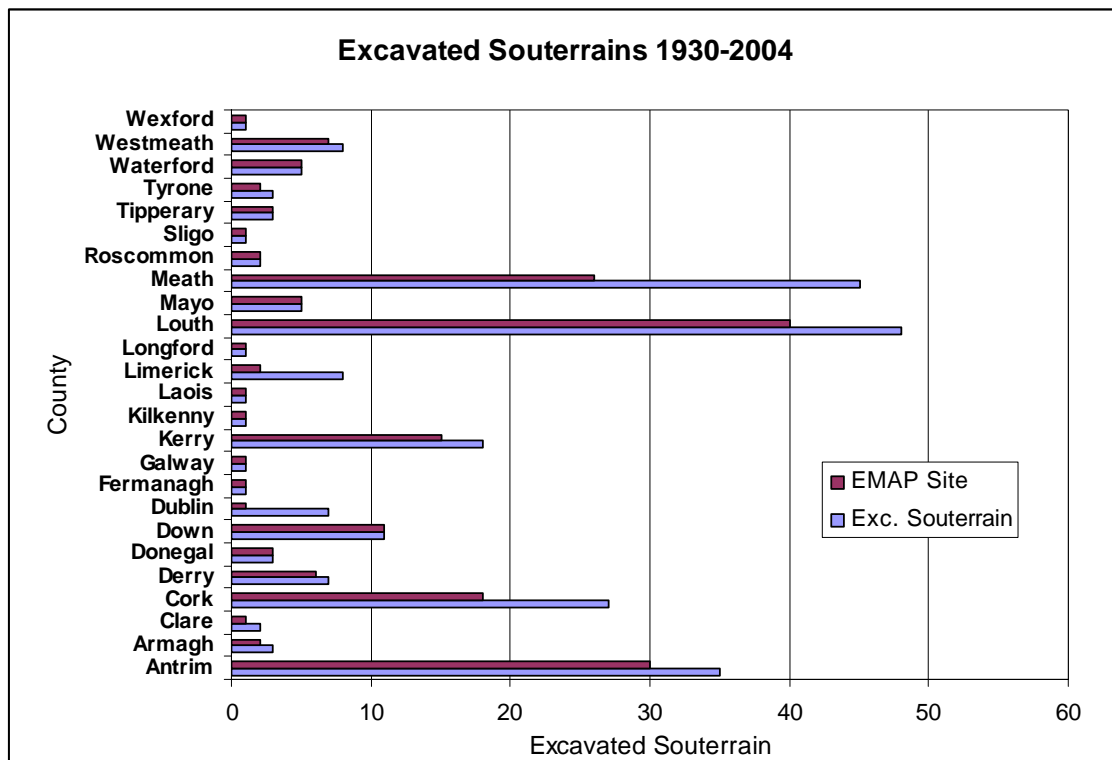
Figure 3:3 Excavated Souterrains and associated EMAP Sites per County 1930-2004

Clinton (2001, 89-95) reviewed the evidence and generally agreed with Warner's (1986, 11) assertion that "the over whelming weight of Irish archaeological and historical evidence would place the datable souterrains within the ninth to twelfth century bracket". The single exception was a souterrain in a ringfort Kiscahane, Co. Cork where charcoal from the construction trench produced "dates that centre on the sixth century" (Clinton 2001, 89). The site, however, had not been published and it is possible that material in the trench may have comprised backfill containing residual material for earlier occupation in the ringfort. Clinton (*Ibid*. 58) suggested that some souterrains in the south-west of Ireland are earlier than those found-elsewhere on the basis that souterrains are found in association with roundhouses in the south west. He discusses at length association between souterrains and houses of differing forms and it is clear (*Ibid*. 53-58) that in the north of the country they are

almost exclusively with rectangular houses. The possible single exception, at Downpatric, Co. Down, is equivocal.

Clinton (*Ibid*. 45) also made the very important observation that the souterrains in the east of the country in the east of the country tend to be located in unenclosed settlements while the majority in the west tended to be located within ringforts. He has also concluded (*Ibid*, 203) that there is a growing body of evidence to suggest that many souterrains located within a ringforts are secondary additions. Macalister and Praeger (1931, 75) noted that the souterrain at Togherstown, Co. Meath post-dates the ditch of the ringfort while a similar relationship was observed at Kiltale ringfort, Co. Meath (Rynne 1974, 267). At the later unenclosed phase at Knowth, CO. Meath, many of the souterrains were built across the in filled ditches of the earlier enclosure (Eogan 2007, 3-4). In the cases of ringforts that developed into raised raths such as Rathmullen, Co. Down (Lynn 1982) and Deer Park Farms, Co. Antrim (Hamlin and Lynn 1988) souterrains are absent from 'ringfort' phase but present in the later horizons. In most instances it is impossible, on the basis of stratigraphical evidence, to determine if a souterrain is contemporary or later than the enclosure defences. In the case of Ballycatteen, Co. Cork, Ó Ríordáin (1943, 41) concluded that the absence of pottery in the vicinity of the souterrains implied that they had to ascribed to a later phase of occupation at the site. Recent unpublished excavations also provide evidence for the secondary nature of souterrains. At Rosepark, Co. Dublin some of the souterrains ran across the ditches of the enclosures (Baker 1999:162; Carroll 2001:334).

Recent excavations have confirmed the association between round house and souterrains in the south of the country. At Bray Head, Valencia, Co Kerry a round house and associated souterrain were present while a souterrain entrance was discovered inside the rear annex of a figure-of-eight building at the cashel of Cathair Fionnúrach, Ballynavenoor, Co. Kerry (Gibbons 1994-97, Exc. Bulletin).

Excavated Souterrains associations with EMAP categories
A total of 186 EMAP defined 'sites' were found to contain or be located immediately adjacent to the 247 souterrains.

- 93 (50%) excavated sites revealed one or a number of adjacent souterrains with no associated early medieval enclosure.

- Souterrains associated with settlement enclosure sites (e.g. ringforts, enclosures & cemetery/settlements) comprised 74 or 40% of EMAP defined sites.

- 19 sites contained excavations of ecclesiastical complexes that also revealed excavated souterrains within or immediately outside the settlements. They constituted 10% of excavated sites.

Table 3:8 Excavated Souterrains 1930-2004 and associations with EMAP Site Categories

Site Category	Quantity	%
Ecclesiastical	19	10
Settlement Enclosure	74	40
Unenclosed	93	50
Total	**186**	**100**

Excavated Souterrain Associations 1930-2004

19, 10%

93, 50%

74, 40%

Ecclesiastical
Settlement Enclosure
Unenclosed
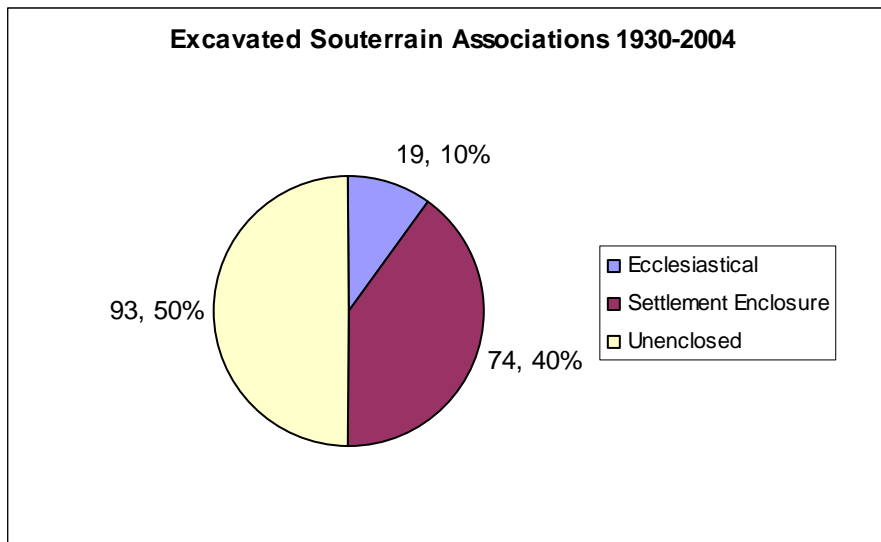
Figure 3:4 Excavated Souterrains 1930-2004 and associations with EMAP Categories

Excavated Souterrains 1930-2004 and associations with EMAP Site Types

The 247 excavated souterrains were found in a range of contexts described in table 3:9. 80 excavated souterrains (42%) revealed no evidence for associated enclosures or other early medieval archaeological evidence. This does not preclude the possibility that this archaeological evidence does not exist in the vicinity of the souterrain(s) because it is clear that the monument itself was the sole archaeological focus of many excavations. 9 EMAP sites (5%) excavated souterrains and associated early medieval unenclosed habitation sites, primarily in the form of buildings and structures (See Rural unenclosed settlement section below for discussion). A number of other souterrain sites (2%) revealed evidence for associated field banks, ditches and pits and examples include Dromiskin (Halpin 1988:45), Mell 3 (Keeley 2000:0696) and Marshes Upper (Mossop 2002:1335), all in Co. Louth.

A total of 45 or 24% of excavated souterrains between 1930-2004 were found to be associated with ringfort settlement sites. A total of 7 of these sites were located within raised/platform ringfort sites. Examples of ringforts associated with souterrains include Shane's Castle, Co. Antrim (Warhurst 1971), Lackan, Multyfarnham, Co. Westmeath (Desmond 1999:872) and Letterkeen, Co. Mayo (Ó Ríordáin 1951-52). Examples of raised and platform ringforts with associated souterrains include Rathmullan Lower, Co. Down (Lynn 1981-82) and Meadowbanks Rath, Jordanstown, Co. Antrim (Halpin & Crothers 1995:007). Other contexts which souterrains have been uncovered include inside the cashels of White Fort, Drumaroad, Co. Down (Waterman 1953) and Lecanabuaile, Co. Kerry (Ó Ríordáin & Foy 1941), the imposing stone walls of Cahercommaun Fort, Co. Clare (Hencken 1938), the promontory fort at Dunbeg, Co. Kerry (Barry 1981) and with a number of *potential* non-circular shaped enclosure complexes at Ballynacarriga I & II, Co. Cork (Noonan 2001:115 & 2001:116) and Rosepark, Balrothery, Co. Dublin (Baker 1999:162; Carroll 2001:334). Both these latter sites were associated with early medieval cereal drying kilns. Another significant enclosure complex containing a ringfort and a number of related enclosures, a large collection of cereal-drying kilns and a souterrain cut was excavated at Colp West, Co. Meath in 2000 and 2001 (Murphy 2000:0748; Clarke and Murphy 2001:952). The site dated to the Late Iron Age and early medieval periods.

Souterrains have been excavated in a range of early medieval burial contexts. Excavations at Boolies Little, Co. Meath revealed a souterrain that was constructed after an early medieval stone/slab-lined cemetery fell out of use (Sweetman 1982-83). A souterrain was also excavated adjacent to an early medieval lintelled cemetery at Rampark, Co. Louth (Campbell 2004:1122). Evidence for a small iron-smelting(?) furnace and a kiln of uncertain use were

also uncovered. An enclosure associated with a small souterrain and an early cemetery was excavated at Kiltale, Co. Meath (Rynne 1974). Souterrains have been identified on a number of other *potential* cemetery/settlement sites including Ninch, Laytown, Co. Meath (McConway 2001:1007;2002:1489), Raystown 21, Co. Meath (Cotter 2003:1459; Halliday 2003:1460; Seaver 2004:1334) and Balriggan, Co. Louth (Delaney 2002:1295; 2003:1226). Evidence for arable production in the form of corn-drying kilns was also identified on both sites while Raystown also uncovered a significant milling complex. Two excavated souterrains at Millockstown Co. Meath were associated with a large enclosure and lintelled cemetery which the excavator, Conleth Manning, suggested succeeded an earlier ringfort settlement.

Souterrains have also been associated with ecclesiastical sites. Clinton (2001, 48, 49 & 50) has noted that souterrains have been discovered at a number of sites including Templebryan North, Co. Cork, Meelick, Co., Mayo (Raftery, Joseph 1967) and Kiltiernan East, Co. Galway (Westropp 1919, 178). The EMAP survey identified that 17 ecclesiastical sites revealed excavated souterrains between 1930-2004. Examples of ecclesiastical sites include Turraloskin, Co. Antrim (Brannon 1977-79:0008), Ballywiheen (McCarthy 1998:266) and Reask, Co. Kerry (Fanning 1981) and a possible timber souterrain at Cathedral Hill, Downpatrick, Co. Down (Brannon 1987:12). Further research will be required to identify whether a small number of these 17 excavated souterrains were clearly associated with adjacent ecclesiastical complexes.

Table 3:9 Excavated Souterrains and associated Site Types 1930-2004

Souterrain Association	Quantity
Cashel	7
Cemetery	2
Cemetery/Settlement Site	5
Ecclesiastical Site	17
Enclosure	16
Field Bank/Ditch	4
Isolated Souterrain	80
Promontory Fort	1
Raised/Platform	7
Ringfort	38
Unenclosed habitation Site	9
Total EMAP Sites	**186**

Excavated Souterrain Contexts 1930-2004

Legend:
- Cashel
- Cemetery
- Cemetery/Settlement Site
- Ecclesiastical Site
- Enclosure
- Field Bank/Ditch
- Isolated Souterrain
- Promontory Fort
- Raised/Platform Ringfort
- Ringfort
- Unenclosed habitation Site
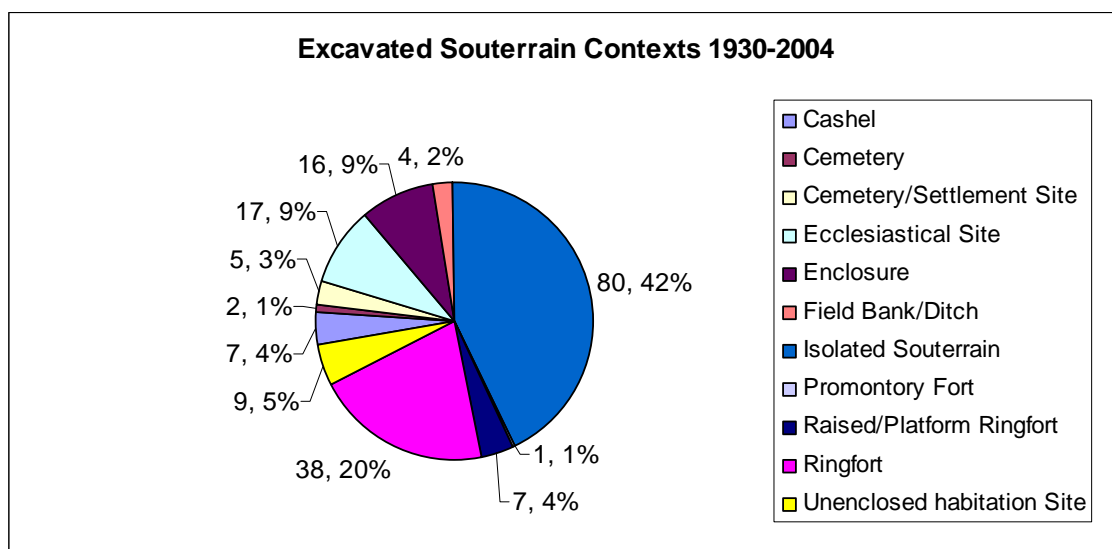
Figure 3:5 Excavated Souterrains and Site Types 1930-2004

Souterrains and the Phasing of Early Medieval Enclosed Sites

Clinton (2001, 94) has noted that souterrains appear late in the sequence in known multi-phase sites such as Deer Park Farms, Co. Antrim and Rathmullan, Co. Down. Excavations at Letterkeen, Co. Mayo (Ó Ríordáin & McDermott 1951-2, 100) had earlier suggested that souterrains post-dated the initial settlement phase (Clinton 2001, 47), and other such examples were found at Millockstown, Co. Louth (Manning 1986), Ninch, Laytown, Co. Meath (Eogan & Reid 2000, 2001 & 2002), Raystown, Co. Meath (Seaver 2006), and Rosepark, Balrothery, Co. Dublin (Swan & Carroll 1999 & 2000; Baker 1999:162). It is likely that many more sites will display a similar chronology when further details are given in reports about the relationship between souterrains and the associated ringfort.

It is unclear, however, whether the souterrains represent subsequent unenclosed settlements built on the site of abandoned ringforts, or whether they were constructed in direct association with inhabited ringforts. Clinton (2001, 46 & 203) has noted that the souterrains at Knowth - dating to the ninth and tenth centuries A.D. - post-dated the enclosed phase of the Early Medieval settlement at Knowth. The ninth and tenth century settlement at this royal site produced nine souterrains - all associated with rectangular houses - and was described by George Eogan as an 'unenclosed village'.

Early Medieval Unenclosed Settlements

Background

In the early medieval period, not everybody lived within enclosures. 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. There are few well-investigated unenclosed sites, and the chance discovery of an isolated souterrain is often the only evidence for a possible Early Medieval unenclosed settlement (Edwards 1990, 46).   The role and function of Early Medieval unenclosed settlements is thus poorly understood, and they are generally not included in Early Medieval settlement models which tend to be dominated by ringforts (e.g. Stout 1997).

Ringforts are generally interpreted as the occupation sites of either the '*nemed*' (privileged grades - i.e. the noble and royal grades) or the '*sóer*' (free grades; i.e. from small farmer upwards) (Kelly 1988, 9; Edwards 1990; Mallory & McNeil 1991; Mytum 1992; Graham 1993; Stout 1997; Charles-Edwards 2000; Seaver 2005). Interpretative models therefore are forged on the perceived interaction between these classes and grades as indicated by the disposition of ringforts. Such grades, however, could only have made up a small percentage of the total population. The '*fuidir*' (free) and '*dóer*' (semi-free) must have formed a considerable portion of the population. There must also have been large numbers of slaves, including both '*mug*' (male slaves) and *cumal* (female slaves) (Kelly 1988, 9-11). These peoples tend to be overlooked in most settlement models. It has been suggests 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 (Edwards 1990, 47). Although clachans would appear to be a later medieval, or even post-medieval, settlement type, a small cluster of houses dated to the Early Medieval period has been discovered at Grange West, Co. Sligo (Burenhult 1984), suggesting that there may also be earlier examples.

It is possible that, if enclosed settlements were the defining hallmark of a free-man *c.* 500 – *c.* 900, then contemporary unenclosed settlements may have been the sites of the un-free, dependant labourers or the socially marginalised. A number of unenclosed sites, however,

pre-date or post-date the centuries of ringfort construction and occupation, and it is possible that they fulfilled some other social role or function. The evidence for unenclosed settlements principally comes from isolated souterrains and souterrains with associated structures. The chronology of souterrains has already been discussed, and thus these sites would appear to date either to the end of the ringfort occupation period, or subsequent to it. Other evidence for unenclosed settlements comes from unenclosed settlement sites with no associated souterrains, unenclosed settlement sites within field systems and coastal habitations sites.

A list of unenclosed settlement sites is given within Appendix 2. A total of 45 isolated souterrain sites, 32 unenclosed habitation sites and 5 coastal habitation sites were found in a variety of contexts and are listed in the appendixes for excavated sites 1940-2004.

Unenclosed Early Medieval Buildings

A large number of early medieval sites have been excavated in recent years and have revealed evidence for unenclosed early medieval buildings with a range of artefact assemblages (See Appendix – 'Unenclosed Settlement Sites'). Industrial activity appears to have been undertaken on a few of these sites.

Excavations at Platin, Co. Meath revealed two circular unenclosed buildings - one 10m in diameter, the other 15m (Lynch 2001 & 2001). Foundation trenches of the smaller structure yielded glass beads, crucible fragments, tuyère fragments and iron objects. Two parallel gullies revealed burning and iron slag and may have formed the industrial centre associated with the occupation site.

Excavations at Ballyvollen, Co. Antrim revealed an occupation surface rich containing charcoal, souterrain ware pottery, flint, 170 kg of iron slag and a range of iron objects including a nail, a punch and three tuyeres (Williams 1985). Radiocarbon dating suggested that the site was occupied in the 7th century A.D. It was suggested that a small number of features at the site may represent the remains of a simple irregular structure, some 5m in diameter. The site appears to have been unenclosed and may have been engaged in specialised iron working activities.

Excavations at Kilkenny Castle, Co. Kilkenny revealed a twelfth century pre-castle level (Murtagh 1991 & 1992). A sod-built structure, containing a central hearth and the remains of a small furnace to the west, was found beneath the castle. Iron and bronze working debris were found associated with this structure. A hearth and a furnace bottom were found a short distance away from an unenclosed roundhouse at Cloghlucas South, Co. Cork (Gowen 1986; Gowen 1988).

Like the unenclosed souterrain sites, there is evidence for the processing of grain on these sites. Excavations at Cloghlucas South, Co. Cork uncovered a rotary quern stone; and the Early Medieval roundhouses under Maynooth Castle, Co. Kildare (Hayden 1996; Hayden 1999) appears to have been contemporary with a cultivation phase marked by regularly spaced furrows. Seeds and grains were discovered at the Early Medieval roundhouse at Drumadonnell, Co. Down (McSparron 1999), with oats and barley being the dominant types.

These sites, however, show far greater evidence for occupation than the unenclosed souterrain sites. The structures on these sites do not appear to conform to any uniform pattern, and are found in various shapes and sizes. At Kilkenny Castle, local cooking-ware shards were found associated with the rectangular sod-built structure; and souterrain ware and burnt domestic animal bone – predominantly cattle and sheep – were found at the roundhouse in Drumadonnell. The occupation hearths from the latter site returned radiocarbon dates calibrated to A.D. 705 - 1005 and A.D. 680 - 980.

McSparron's (2004:0078) excavations at Terryhoogan, Co. Antrim uncovered a large circular gully approximately 0.7m wide and up to 0.4m deep, with a diameter averaging 8m internally and 9.4m externally. Two other small curving gullies may have joined together outside the area of excavation and, possibly formed an annex to the main gully. The fill of the circular gully contained souterrain ware-type pottery, iron slag and corroded iron objects. No evidence for structural timber or wicker was found inside the large circular gully. It was suggested that it could however have been a drain or drip channel around an early medieval round house. The other two curving gullies may have been a drain around an annex to the main round house. A linear ditch, also containing souterrain ware and which extended along the south of the site cut one of the gullies. The linear ditch also contained souterrain ware. An elongated pit, 1.4m by 0.8m and 0.35m deep, was found approximately 4m to the north of the circular gully.

Excavations close to Murgasty Church, Co. Tipperary revealed an unenclosed circular hut site, 4m in diameter (Cummins 1998:626). The site had been extensively disturbed by post medieval cultivation. The hut was surrounded by a narrow gully, 0.2-0.5m wide and 0.2m deep, which contained no clearly identifiable post-holes or stake-holes. A hearth and a number of small post holes and stake-holes of no clear pattern were excavated in the interior of the hut. A fragment of a jet/lignite bracelet was uncovered inside one of two shallow pits in the northeast corner of the hut.

Excavations at Ballycullen/Oldcourt, Co. Dublin (Larsson 2002) exposed a semicircular ditch measuring 10.2m east-west by 4.5m. This was interpreted as a possible slot-trench of a house, and a metalled surface containing six post and stake holes was interpreted as a possible entranceway for the structure. The fills of the ditch were found to contain burnt and un-burnt bone, and an internal hearth was also identified. The excavation at Blackhills Lower, Co. Cavan (McConway 1992) revealed two curving gullies (13.2m x 10.6m) and four pits (two of which revealed evidence for in situ burning and could represent hearths). Although flint scrapers were recovered from the topsoil and Bronze Age pottery sherds were recovered from one of the pits, radiocarbon dates from one of the charcoal filled gullies returned dates of A.D. 890-895 and A.D. 1278-1294 so it appears that the structure may have been Early Medieval.

The structures at Ballycullen and Blackhill Lower appear to have been quite large, however smaller structures also appear to have been utilised, for example a circular hut, 4m in diameter, was excavated at Moorgate, Co. (Hodkinson & Cummins 1999). A hearth was located in the centre of the hut, and post holes and stake holes were also located inside the hut. In the northeast corner of the hut, two shallow pits were excavated, one of which contained a jet or lignite bracelet. Two Early Medieval post-and-wattle round houses, approximately 5m in diameter, with associated hearths were also excavated at Maynooth Castle, Co. Kildare. Other shapes were also used. A trapezoidal stonewalled structure (3.4m x 2.8m internally) was discovered at the Early Medieval conjoined *clochan* at Coarha Beg, Valentia Island, Co. Kerry (Hayden 1994); two further rectangular stonewalled cells were annexed to it. A stone-lined hearth was excavated in the interior, and blue-glass beads, stone spindle whorls and rubbing stones were found within this structure. An occupation date between A.D. 562 and A.D. 758 AD was returned for this structure.

Some upland hut-sites also seem to fall within this category of unenclosed Early Medieval settlements. A circular hut defined by a collapsed wall of rough fieldstones, 0.8-1.4m wide, was excavated in the Barrees Valley, Co. Cork (O'Brien 2002:0174). No interior features were found and the only find consisted of a solitary Early Medieval multi-coloured glass bead. Two small charcoal deposits found underneath the wall stones were radiocarbon dated to 1380 ± 40 BP (GrN-28303), calibrated to the seventh and early eighth century A.D., and similar to the expected date range for the bead. A D-shaped stonewall structure (4.8m by 2.7m internally) was also excavated, and a charcoal spread dated this to A.D. 1044-1212 A.D. Excavations were conducted on two hut sites at Carrignamuck on the west sides of the Wicklow mountains (Brindley 1977-79). Site A consisted of two circular, conjoined structures,

with traces of a possible third hut to the southeast. No evidence of habitation was uncovered except for a horse scapula. Site B lay a quarter of a mile to the east of Site A and consisted of a level platform with a semicircle of dry stone wall. No occupation evidence was found. Excavations were also undertaken on a clachan situated on the southern slopes of Mt Eagle, near the western tip of the Dingle Peninsula. No early finds were discovered (Bennett 1989).

Early Medieval Unenclosed Settlements associated with Field systems

Excavations and archaeological surveys at a number of sites have produced evidence for unenclosed Early Medieval settlement associated with contemporary fields. These tend to survive in upland areas, stony areas, or other areas of poorer soil quality. A field pattern with associated settlements was excavated on a terrace at 'The Spectacles' overlooking Lough Gur in Co. Limerick (Ó Ríordáin 1949). 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 pastured.

A number of *clochan*, some conjoined and associated with souterrains, were discovered at Ballynaveooragh within an elaborate pattern of fields on the uncultivated slopes of Mount Brandon, Co. Kerry (Coyne 2006). A complex of fields, with eight houses dated to two phases, was excavated at Beginish Island, also in Co. Kerry (Kelly, 1956). In one house, dating to the second phase, a rune-inscribed slab had been re-used as a roofing lintel, suggesting the structure dated to a period after the coming of the Vikings (Edwards 1990, 47).

Upwards of 23 sub-circular hut sites were surveyed at Ballyutoag, on the northwest slopes of the Belfast Mountains (Williams 1984). The site consisted of two large conjoined curvilinear enclosures with a group of circular hut platforms around the perimeter, a series of adjacent fields and a third smaller enclosure to the north. It has been estimated that the site could have housed upwards of 100 people. The excavated huts largely date to the eighth century A.D., and the site has been interpreted as a possible Early Medieval transhumance village. Similar Early Medieval upland sites in Co. Antrim have also been discovered at Browndod, Killylane and Tildarg (Williams 1983, 239-245).

Four souterrains, as well as field banks of several phases, were discovered at Kilcarn, Athlumney, Co. Meath (Sullivan 1997). Domestic use was indicated by the large quantities of animal bone, two hearths, and other artefacts (i.e. two bone pins, a glass bead, a lignite bracelet fragment, a bone bead, lithics and metal artefacts) found on site.

Excavations at Carrigoran, Co. Clare (Reilly, Breen & Quinn 1998-2000) have shown a more complex pattern of settlement and fields. The first Early Medieval phase consisted of a series of pits, posts and stake holes. Some of the remains have been interpreted as the remains of a hipped-roof building cut into the ground; an oval structure, supported by a central post, has been identified; and another structure has been inferred from the presence of a curvilinear gully. Eight pits containing charred remains were uncovered, and these may have been used as storage pits or waste pits for cereal grain. A fragment of a rotary quern was also discovered, and three other pits have been interpreted as potential hearths. The site appears to have been abandoned before being re-occupied later in the early medieval period (a 'Class E' bone comb, dating to the ninth/tenth century A.D. was found in this phase). It is only in this later phase that small stone-walls and ditched fields were constructed, some of which may have been associated with cereal cultivation. Although there is less evidence for occupation than in the earlier phase, the presence of metal slag and hearths/furnaces provides evidence for smelting and smithing on site during the latter centuries of the first millennium.

These unenclosed settlements associated with field patterns generally appear to belong to the end of the first millennium. A set of rectangular fields and a souterrain - radiocarbon dated to A.D. 405-690 – from Marshes Upper, Co. Louth (Mossop 2002), however, suggests that many of these sites may have been contemporary with, rather than later than, ringforts.

Unenclosed settlements with no surface trace? Souterrains with - and without - associated buildings

Evidence for Early Medieval unenclosed settlement has also come about in the form of the discovery of isolated souterrains (See Appendix on Souterrains) that seem to be associated with some type of settlement or occupation activity. A total of 80/186 or 42% of excavated sites from 1930-2004 revealed souterrains with no associated enclosures, banks/ditches or structures and have been listed above. On occasion, this may have been because a sufficiently large area was excavated to identify enclosure features, but there are plenty of examples where there clearly was no enclosure in the vicinity.

Excavations occasionally recovered evidence for industrial activity or craft-working at these sites. At Ballyknee, Spiddal, Co. Meath (Eogan 1988) two souterrains produced a bronze mount, a single-edged comb, piece of iron and a bronze pin; iron slag and bone combs were also found at a souterrain in Magheramenagh, Co. Londonderry (Reilly 19**). Excavations at Mell 3 (Breen 2000) produced a bronze mount with openwork interlace, and other industrial or craft working refuse such as iron slag and animal bone, as well as a spindle whorl, a lignite bracelet and a blue glass bead.

As discussed above, a large number of the sites in which souterrains have been excavated have uncovered evidence for arable production primarily in the form of cereal-drying kilns. Material associated with arable farming has also been recovered from a large number of isolated souterrains. An undated iron ploughshare was found at Boolies Little, Co. Meath (Sweetman 1982-83), and a ploughshare and coulter were apparently deliberately deposited near the entrance to an unenclosed souterrain at Faughart Lower, Co. Louth (Niall Roycroft pers. comm.). Harvesting tools have also been discovered, for example a sickle dated to the Early Medieval period was recovered at an isolated souterrain at Beaufort, Co. Kerry (Connolly 1995). The bulk of the evidence for arable farming, however, comes from the processing items discovered. Quern stones were found at Spittle Quarter, Co. Antrim (Brannon 1990), Ballyknee, Spiddal, Co. Meath (Eogan 1988), Kill, Co. Kerry (Cahill 1988), Randalstown, Co. Meath (Campbell 1986), Bishops Court, Co. Down (Lynn 1973), and Farrandreg, Co. Louth (Murphy 1998). Excavations at Slievemore, Achill exposed an undated corn-drying kiln and possible souterrain (McDonald 1995, 1998 & 1999), and a souterrain at Ballygalley, Co. Antrim (Farrimond 2002) revealed an adjacent corn-drying kiln which may also be Early Medieval in date.

There is limited evidence for domestic use. The eponymous souterrain ware pottery has been recovered at a number of these unenclosed sites, e.g. Ballyboley, Co. Antrim and Magheramenagh, Co. Londonderry. The limited distribution of souterrain ware restricts the number of sites it is found on, and it is possible that the souterrains were used as storehouses, not dwelling houses. Bone combs, spindle whorls and lignite bracelets may also indicate occupation, but are equally likely to indicate industrial activity. While this is only a very preliminary sketch of the associated material-culture found at souterrains, it nevertheless suggests that crop cultivation and cereal storage may have been an important activity at these sites.

EMAPs survey has revealed eight examples where souterrains, not associated with any enclosures, appear to have been located adjacent to potential early medieval buildings. At Craig Hill, Co. Antrim (Waterman 1956, 87) a single rectangular house was associated with a souterrain. A further stone built rectangular house associated with a souterrain was excavated at Antiville, Co. Antrim (Waterman 1971, 65). The site was enclosed by an

unusually low (0.45m deep on the east side) but wide (4.5m) wide ditch. Both the shape of the house and the presence of the souterrain suggest that both Craig Hill and Antiville belong to the latter centuries of the first millennium, possibly post-dating the ringfort-building phase.

Excavations over a number of years from 1993-2001 at Bray Head, Valentia Island, Co. Kerry by Alan Hayden (1997:231; 1998:267; 1999:324; 2000:0423) and Claire Walsh (1995:132; 1997:230) have uncovered an important unenclosed early medieval settlement dating from the 6th-13th century A.D. The site was associated with enclosed field systems and an early medieval cereal-drying kiln. Five rectangular houses overlaying four round houses, one of which contained a souterrain were also excavated. Excavations at Smithstown, Co. Meath (Gowen 1988) have also revealed four souterrains to the south of a series of gullies suggestive of buildings. A possible keyhole kiln was excavated nearby. Excavations at other sites at Farrandreg, Co. Louth (Bolger 2000), Randalstown, Co. Meath (Campbell 1985), Sheepland Mor, Co. Down (Rees-Jones 1971), Marshes Upper (Gosling 1984 & 1985), Tullygarley, Co. Antrim (McQuillan & Long 1999) and Markstown, Co. Antrim (McSparron 2001) revealed possible structures outside or near souterrain entrances. The shape of the structures could not be established from the excavations bulletin reports. Further research will be required in this area.

Early Medieval Unenclosed Coastal Occupation Sites (Shell Middens)

Background

There is emerging evidence for Early Medieval settlement and industrial evidence in coastal locations. Some of these sites are clearly associated with shell middens situated along the dunes at the edge of the sea shore (O'Sullivan & Breen 2007, 116). There is currently a lack of understanding about the character and role of these coastal habitation sites as they were primarily used by the people 'outside history' (*ibid.*). 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.

Excavations of Early Medieval Coastal Occupation Sites and Shell Middens, 1930-2004

The EMAP survey has recorded 34 sites that have revealed shell middens within its database. They were excavated within a diverse range of contexts on ecclesiastical sites, ringforts and cashels, crannogs, inside the Viking towns or in isolated contexts. All these sites however were located in some proximity to coast or river. The majority of these middens are undated and some are likely not to be early medieval in date.

A coastal habitation site excavated at Rabbit Valley, Ballybunion, Co. Kerry found extensive shell middens (McCarthy 1986) while a stone pavement, hearth and line of stake holes was discovered at the latter. The author suggested that the former might have been associated with the nearby early medieval monastery while the latter could date to the Iron Age/early medieval period. A shell midden at Dog's Bay, Roundstone, Co. Galway containing the bones of ox, sheep, pig and grey seal was investigated in July 1944 (O'Rourke 1945). The site had previously been examined by a number of antiquarians including F.G. Bigger who had reported the presence of shells of dog whelk, periwinkle, limpet, oyster and mussel, the remains of a hearth and the stone foundations of a possible hut at the site. Two early medieval ringed pins were also recovered inside the shell midden by antiquarians (O'Rourke 1945).

Two early medieval sites were examined at Doonloughan, Co. Galway as part of a QUB research project (McCormick & Murray 1997). The first site was dated to A.D. 723-889 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. An unidentifiable oxidised iron object and a copper penannular brooch were discovered. 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 whelp shells were also discovered suggesting the production of purple dye at the site. Excavations in the townlands of Truska, Manninmore and Manninbeg at False Bay to the northwest of Ballyconneely revealed further shell middens which predominantly dated to the Bronze Age although some examples did date to later (potential Early Medieval) periods (McCormick 1992). Early Medieval shell middens were also excavated at Grange West, Carrowkeel, Co. Sligo (Goran Burenhult 1988). The site consisted of a platform site that was adjacent to the coast and returned a date of A.D. 790-900.

Early medieval coastal middens have also been found on the north coast. Excavations undertaken on a midden at Minnis North, Co. Antrim (Simpson & Conway 1991) revealed three sherds of Early Medieval pottery - two souterrain ware and one everted rim ware. The pelvis and legs of a female were also found in the midden, which produced a calibrated radiocarbon date of A.D. 681-826. An un-associated bone pin also found in the midden was of a type found on a number of Early Medieval sites including Lagore Crannog. Although there are a number of Early Christian artefacts, the midden appears to date from the Neolithic right through to the Early Medieval period.

An early medieval shell midden was excavated at Oughtymore, Co. Londonderry (Mallory & Woodman, 1984). The excavation 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. 665± 45, and there are a number of other potentially Early Medieval middens recorded nearby in the Magilligan peninsula.

A significant early medieval shell midden was uncovered below the bank of the promontory fort on Dalkey Island, Co. Dublin (Liversage 1967-68). Amphora sherds and three bronze pins were recovered in this feature. A house, midden and hearth were subsequently constructed after the promontory fort. The excavation also uncovered evidence for a sherds of B, E and Samian ware at the site indicating that it may have been a significant trading port in the early medieval period (See Doyle 1998).

A possible early medieval stone circular building, built partially of dry stone masonry and dated no earlier than the Iron Age, was excavated in the townland of Glanafeen, Co. Cork overlooking the shallow arm of Lough Ine in August 1953 (Ó Cuileanáin 1955). The excavations uncovered an elaborately built flue and hearth. It was suggested that the number of furnace bottoms, tuyère fragments and furnace lining at the site must support the view that a furnace was erected over the flue. No evidence for domestic occupation in the form of animal bone or domestic finds was revealed. The site appears to represent an unenclosed coastal site of uncertain date associated with the ironworking.

A site in the sand hills at Ballymacrea Lower, Portrush, Co. Antrim was excavated in May 1962 (Flanagan 1966). Two patches of compacted sand associated with occupation debris were discovered. A cluster of basalt boulders may have constituted the wall-footings for a house structure. Charcoal, bone, iron slag, and a number of sherds of souterrain ware were recovered from the site.

An important early medieval coastal habitation site was excavated at Dooey, Co. Donegal (Ó Riordáin & Rynne 1961; Edwards 1990, 46; O'Sullivan & Breen 2007, 119). The earliest phase revealed habitation evidence and fireplaces. The site was the defined by a shallow curvilinear

ditch. Iron objects, cast bronze brooches, pins and worked bone and antler were recovered in Phase 3, suggesting that metal working may have been taking place on site during at this time. The site was later reused as a burial ground in the eleventh century A.D.

O'Sullivan & Breen (2007, 118) have noted that there can be a temptation to interpret these sites as the location place of the homes of the poor and landless. Early Medieval coastal sites appear to be predominantly domestic in nature, and it is possible that rising population during the period in which crannogs and ringforts were occupied may have forced some communities to the margins along the coast (McCormick & Murray 2007). Some sites, such as Doonloughan and Dooey, may have played a specific industrial role which meant that they had to be located on the coast. The number of dog whelk shells discovered at these sites supports the idea that they were associated with the production of purple dye (O'Sullivan & Breen 2007, 119). Proximity to trade routers may also have influenced coastal locations. Dooey, for example, is placed on the North Atlantic seaways, and has been interpreted as the manufactory of a high-status smith (*ibid*.).

Early Medieval Occupations in Caves

Background

An intriguing range of evidence exists for the use of caves in the early medieval period, sometimes for occupation, occasionally for burial and perhaps even for the ritualistic deposition of objects. A survey of the artefactual evidence from caves was first undertaken by Coleman (1947). Early medieval artefacts were recovered from a number of sites including Kilgreany, Co. Waterford, Edenvale, Co. Clare, Keshcorran, Co. Sligo, Cushendall, Co. Sligo and potentially Carrigagour, Co. Cork (Coleman 1947). Excavations were undertaken at a cave site in Carrigmurrish, Co. Waterford. The cave was located beneath a limestone knoll that was crowned by a site described as a 'Bronze Age fort' (ringfort?). Finds from the cave included combs, spindle whorls, whetstones, jet and iron fragments, all of which may possibly be ascribed to the Early Medieval period. Excavations by Coleman at a cave at Middleton in 1943 also revealed an Early Medieval habitation layer. Bone spindle whorls, beads, pins, iron artefacts, needles and other domestic items were the principal objects recovered from these sites, all of which may be dated to the Early Medieval period.

The material remains from the excavations at Kilgreany Cave, Co. Waterford, undertaken by Hallam Movius in 1928 and 1934 (Movius 1935) have been recently re-examined (Dowd 2002). A sequence of activity from the Neolithic to post medieval period was revealed. The Early Medieval period was represented by Phase IV, and hearths, whetstones, spindle whorls, a tanged iron knife, bone points, worked bone, rotary quern and a bone needle belonged to this phase. 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 as well as a double-edged bone comb. Similar bone combs have been dated from the fifth to the tenth centuries A.D. and similar bone combs have been found in nearby caves at Carrigmurrish and Ballynameelagh, Co. Waterford. A fragment of a possible eighth century bell-shrine was also recovered.

Kilgreany 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. It was suggested by Dowd (2002) that the evidence was not indicative of a person of low status. The presence of three hearths indicates that people were actually living in the cave in the early medieval period; and the artefactual evidence suggests that a range of activities were undertaken at the site including textile manufacture and food preparation.

Early medieval cave excavations, 1930-2004

A cave at Park North, Midleton was also excavated in the summer of 1942 by Coleman. A number of finds including a bone needle, two bone pins, decorated bone comb handle, spindle whorl, two whetstones, hammer stone, small tanged knife, three right angled fragments of silvered bronze, some corroded bronze fragments and a decorated bronze bar possibly belonging to part of a mounting for an early medieval shrine were recovered. It was suggested that the habitation surface dated to the 8/9th century A.D. (Coleman 1942).

At Cloghermore, Co. Kerry, a cave whose entrance was situated inside a D-shaped enclosure has recently been revealed to have had early medieval activity within it (Connolly 1999). Large quantities of disarticulated human bone and animal bone, as well as amber beads, ring-pins, spindle whorls, bone gaming pieces, iron fragments, worked bone, whetstones, pieces of bone combs and a loop headed ring pin were discovered. The disarticulated remains of a child and female were also discovered near the entrance inside the cave. It is possible that the D-shaped enclosure was contemporary with the Early medieval occupation of the cave and that the cave was used *qua* souterrain in this period.

At Dunmore Cave, Co. Kilkenny, nine silver Viking coins dating to around AD 928, were found during excavations in 1973 (Drew and Huddart 1980, 17). A possible late 10th-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 also discovered at the site in 1999 (Wallace and Ó Floinn 2002, 223). Further excavations were undertaken at the site in 2004 by Marion Dowd in advance of the installation of a new lighting system and 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 often believed that the Dunmore Caves are that of the site of *Derc Ferna* within which the Irish Annals record a Viking massacre for the year AD 928 or AD 930 (Dowd 2004:0914).

Conclusions

There is now a large corpus of evidence available for both enclosed and unenclosed early medieval rural settlement sites. Potential new sites have emerged in the archaeological record further highlighting the complicated and diverse nature of settlement across the island during this period. It is evident that the settlement pattern and organization of rural society from A.D. 400-1170 is more complex than previously considered. One major issue is the extent of continuity and change in settlement between the Iron Age and Early Medieval period.

Emerging evidence suggests settlement/cemetery sites may have originated in the Iron Age/Early Medieval transition, however, the chronological development of these sites is not yet fully understood. There are also problems with the typology and morphology of such sites - can *all* these sites as 'settlement/cemeteries'? and what was their relationship with ringforts and morphologically similar non-circular shaped enclosures?

Non-circular shaped enclosures dating to the second half of the first millennium A.D. have been identified in increasing numbers within the archaeological record. 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 ringfort. Non-circular shaped enclosures which have been previously described in the archaeological record as ringforts 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.

Viking and Hiberno-Norse Settlement, AD 800-1170

Background

The Vikings are first reported in the annals at a raid on *Rechru* (probably Rathlin Island) in A.D. 795. 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 are generally known as Vikings (or Norse). Those who lived in the eleventh and twelfth centuries have generally been given the description of the 'Hiberno-Norse' because they had gradually blended into the Irish political landscape and had converted from pagan to Christian burial and religious practices.

In perhaps the single major contribution of archaeology to the modern Irish sense of identity, the last 20 years has seen the invention and widespread public dissemination of the concept of Vikings in Ireland. Urban renewal developments, particularly in the 1980s and 1990s have transformed our understanding of urban Viking/Hiberno-Norse settlement and burial practices in the towns of Dublin, Waterford, Cork, Limerick and Wexford. In recent years, excavations have also begun to throw up some interesting candidates for Viking rural settlements outside the major towns though the extent and character of Viking rural and coastal settlement is still something of a debate.

Table 3:10 Excavated Viking Sites and Associated Excavation Licenses 1930-2004

Viking Activity	EMAP Site	Exc. License
Burial	4	4
Coastal Settlement	4	10
Dyflinarskiri	3	3
Longport	2	3
Miscellaneous	5	5
Urban Cork	13	14
Urban Dublin	37	43
Urban Limerick	4	5
Urban Waterford	18	25
Urban Wexford	4	4
Total	**94**	**116**

Excavated Viking Sites and Licenses 1930-2004
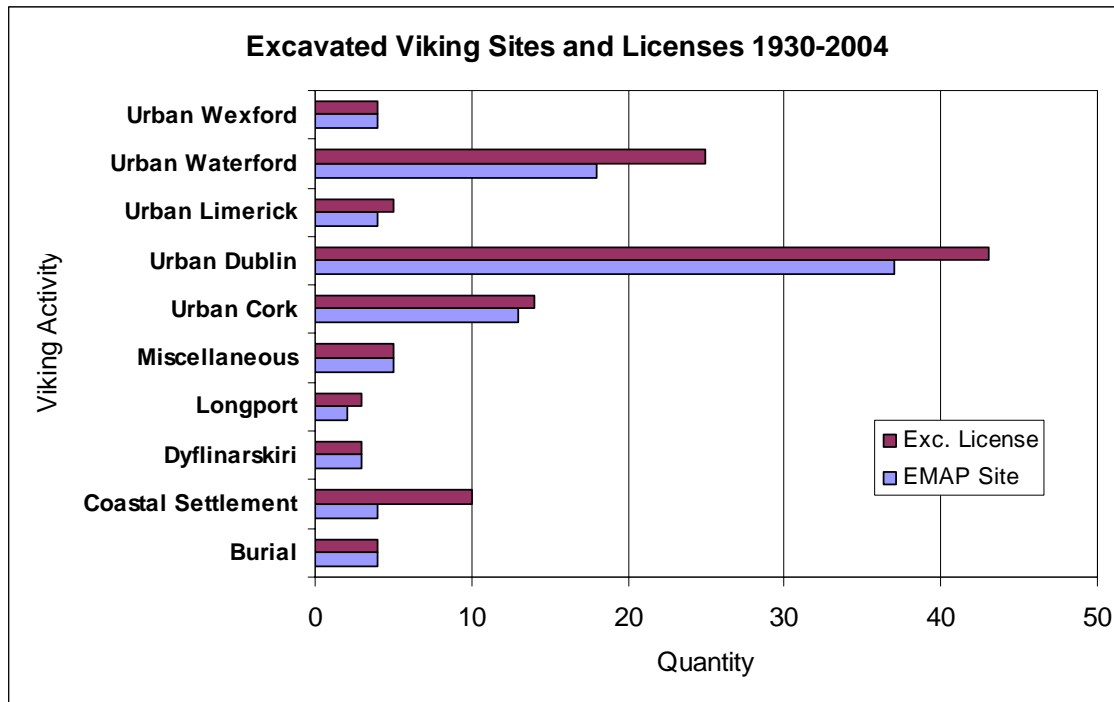
Figure 3:6 Excavated Viking Sites and Associated Excavation Licenses 1930-2004

Excavations in these five Viking/Hiberno-Norse towns revealed vast quantities of information about craft working, woodworking, industry, trade and commerce, buildings, house plots, town defences and waterfront revetments. Palaeoenvironmental proxies mean that we now have an emerging understanding about the environment, landscape and topography of the developing towns and their hinterlands. We also recognize the role that these towns played within as hubs of trade and commerce along the sea ways of Ireland in the later Early Medieval period.

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 Dublin - between Southern Brega and Laigin (Ó Floinn 1998, 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 & Breen 2007, 120). Viking burials (See Burial Section) have also been discovered adjacent to 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. This evidence throws up interesting ideas about the interaction and relationship between pagan ninth or tenth century Vikings and the local church authorities.

The Viking Raiding Period, AD 795-c.900: The Archaeology of the Viking *Longphort*

The *longphort* is generally viewed as the earliest form of Viking settlement, though not uncontroversially. The term was first used to describe a Viking defended ship encampment on Lough Neagh in A.D. 840 (Kelly 1998, 13). It 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 1998, 161).

There is some form of consensus that the longphort was some type of defended enclosure used by the Scandinavians to establish a temporary or short-term foothold in the Irish countryside during the ninth and early-tenth century A.D. The archaeological identification of these sites however remains highly debated. A number of these sites are historically recorded in the annals in the ninth and tenth centuries A.D, for example Annagassan, Co. Louth, Inbher Dee (Wicklow or Arklow town), Lough Neagh, Linn Duachaill, Co. Dublin, Narrow Water and Strangford Lough, Co. Down, Lough Ree on the Shannon and the subsequent Hiberno-Norse towns of Cork and Limerick (Ó Floinn 1998, 162). Kelly and Mass (1995) have further argued that a D-shaped enclosure at Dunrally, Co. Laois on the banks of the River Barrow can be identified as Longphort Rothlaib – 'the camp of Rodolf' - which was destroyed in A.D. 860. Kelly and O'Donovan (1998, 13) have suggested that Athlunkard, Co. Limerick can be identified as the site of a longphort due to the discovery of finds from the site and nearby which included a silver weight, spearhead and spear butt.

Excavations at Ballaghkeeran Little, Co. Westmeath (Fanning 1980-84), on the bank of Lough Ree, sought the defended Viking encampment mentioned in the annals from the mid-ninth to the early-tenth century. The earth had been considerably disturbed by subsequent ridge and furrow cultivation, but, upon excavation, a substantial eastern bank was found. Some iron slag and fired clay fragments were found in a cutting made directly south of the promontory in a large banked-up hollow beside the mouth of the River Breensford.

In recent years, excavations have revealed an important Viking longphort at Woodstown, Co. Waterford where a Viking burial, weaponry, decorated weights, sliver ingots and other objects were found inside a defended enclosure along the River Suir. Another potential Viking site was excavated at Shandon, Co. Waterford (Murphy & Elder 2000; Dennehy 2001). It was rectangular in shape (90m x 40m) and situated on a coastal promontory. A fine Hiberno-Norse bone trial-motif piece had been discovered earlier during quarrying, leading to speculation that it was the site of a Viking base. Several hearths and a large number of pits containing animal and fish bone in the interior as well as potential middens were identified in excavation. Six oval charcoal pits and an ironworking area with evidence for iron smelting outside the enclosure were excavated. A further line of the rectilinear ditch was excavated and revealed a narrow slot-trench along the inner edge of the ditch, which could possibly indicate a palisade. Finds recovered included iron pins and a copper ingot. The report writer concluded that this site was intermittently visited for fishing during prehistory before becoming an established settlement during the tenth and eleventh centuries A.D. The discovery of a Hiberno-Norse coin, the tenth century Hiberno-Norse bone trial motif, several iron knives, and the proximal end of a whale humerus at the site have been used to identify this site as a Viking longphort.

Gibbons (2004, 23) has highlighted that the archaeological evidence for these settlements is still very slim. Little is yet known about their character, use and form in the ninth and tenth centuries A.D. He has also challenged the identification of Athlunkard as a Viking longphort as he feels that there is no strong place name or archaeological evidence to yet make such an association (Gibbons 2005). 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 or *longphoirt*.

The Archaeology of Ireland's Hiberno-Norse towns, AD 900-1100

Our EMAP survey of excavations 1930-2004 has found that excavated Viking settlement, industrial and agricultural evidence from the five major Viking towns amounted to 81% (76/94) EMAP defined Viking sites and 91/116 (79%) of excavation licenses containing Viking and *potential* Viking archaeological evidence. The figures from the five Viking towns exclude excavations of early ecclesiastical sites (e.g. Christchurch in Dublin) which only revealed early ecclesiastical evidence. This percentage illustrates the undoubted significance of these towns in Early Medieval Ireland. It is still not clear whether these figures are also a product of the

large-scale urban excavation projects or represents a reality of the density and distribution of Viking settlement island-wide in the Early Medieval period. Excavations in Dublin followed by Waterford have revealed the most significant archaeological evidence for Viking urban settlement in Ireland. 37/94 or 39% of total excavated Viking sites and 43 of 116 or (37%) of total associated excavation license were situated in Urban Dublin.

Excavated Viking/Hiberno-Norse Town Defences 1930-2004

A complete review of the character and scale of urban excavations in Dublin, Wexford, Waterford, Cork and Limerick is beyond the scope of this current iteration of EMAP's report, but the EMAP database will certainly allow a much closer investigation in future. A provisional survey of the excavated evidence for Viking/Hiberno-Norse town defences and embankments, excavated between 1930-2004, were also established. Both Dublin and Waterford have revealed evidence for successive phases of substantial defences/waterfronts. An undated ditch was excavated at Wexford, while a twelfth century bank was also revealed in Limerick. Table 3:11 and Figure 3:7 illustrate the results.

Table 3:11 Excavated Viking Town Defences 1930-2004

Hiberno-Norse defences	EMAP Site	Quantity
Wexford Ditch	1	1
Limerick Bank (12th cent.)	1	2
Waterford Ditch1 (Dundory)	1	2
Waterford Bank2 (late 11th)	4	5
Waterford Wall 3 (c.1100)	3	4
Waterford Bank4 (c.1150)	4	5
Dublin Bank1 (c.850-925)	2	3
Dublin Bank2 (10th cent.)	7	9
Dublin Bank 3 (c.1000)	7	8
Dublin Wall4 (c.1100)	6	8
Dublin Ditch/waterfront	4	5
Total	**40**	**52**

Excavated Viking Town Banks & Ditches 1930-2004
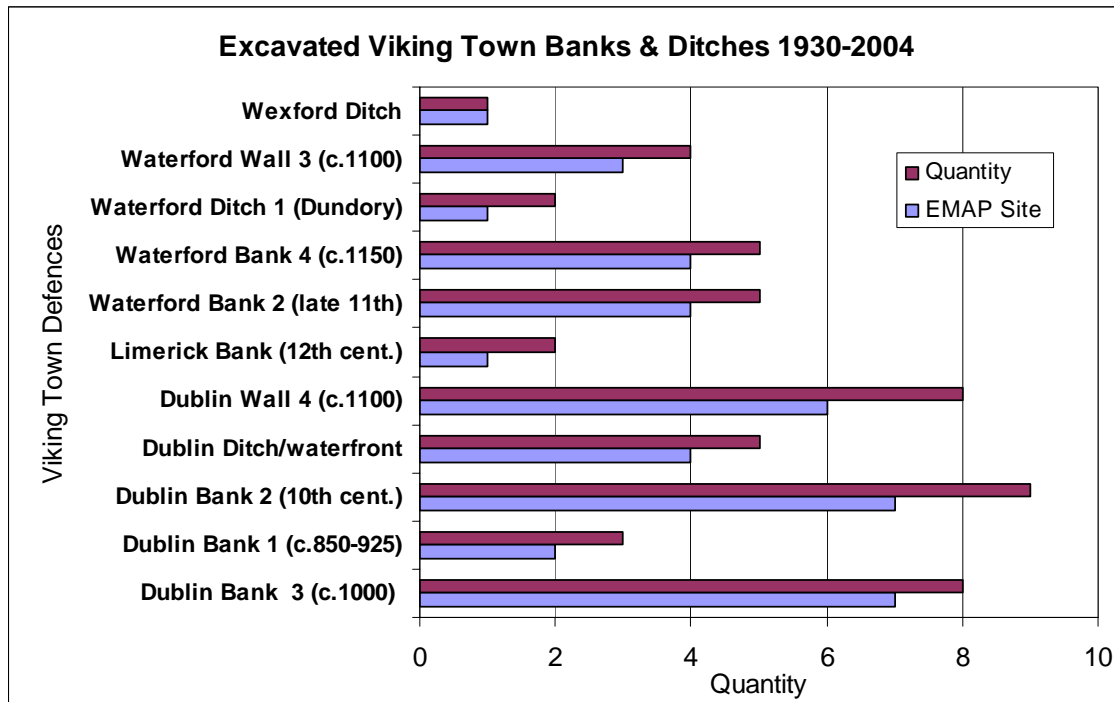
Figure 3:7 Excavated Viking Town Defences 1930-2004

There is still a whole range of research topics concerning the Viking/Hiberno-Norse towns including the character, shape and development of these settlements. Did these settlements evolve from early longphort sites and what was the extent of urbanization in the ninth century A.D. How did the character of these urban centres evolve from the ninth to twelfth centuries A.D., and what was their relationship with the rural hinterlands. Finally, what is the size and extent of urban settlement at Dublin in comparison to other Viking/Hiberno-Norse towns? These research themes will be the focus of the future studies of EMAP.

We now have a great understanding of the character and physical appearance of urban Viking/Hiberno-Norse towns in Ireland, largely due to the work of Pat Wallace and Linzi Simpson in Dublin and Maurice Hurley in Waterford and Cork, amongst others.

By *c.* A.D. 914, Viking towns were being established around the coast that served as trading and settlement centres - Dublin, Wexford, Waterford, Cork and Limerick all owe their origins to this period. In the tenth and eleventh century, these towns became the centre of their activity involving international trade and politics. By this stage, the Hiberno-Norse had been assimilated into Irish society, and were very much part of the Irish political scene. The archaeology of Scandinavian and Hiberno-Norse settlement in the tenth and eleventh century is still largely understood in terms of the development of these towns, as might be expected given the quality of archaeological information being produced by recent excavations in Waterford, Wexford, Cork and Dublin.

The Irish annals state that in A.D. 841, a Viking fleet was present at *Duib Linn* and a longphort was established to raid Leinster and Meath. This longphort was probably a defended enclosure on the river bank, used as a permanent trading base. It may have been located on the River Liffey near Islandbridge-Kilmainham - Viking burials found there in the nineteenth century and the 1930s imply at least the re-use of native Irish cemeteries. Alternatively, the longphort may have been somewhere north of the present location of Dublin castle. Recent archaeological excavations in Dublin have uncovered burials of probable Viking raiders, perhaps even dating before the historically attested longphort. Other excavations in Temple Bar have also located Viking type dwellings dated to ninth century that may represent the longphort settlement itself. In A.D. 902 the early Viking settlement was

apparently sacked by the Irish kings of Brega and Leinster and its inhabitants (or at least the political elite of the settlement) were expelled. The Dublin Vikings appear to have removed themselves to northern England and the Isle of Man after the fall of the longphort.

In A.D. 917, the Norse returned and established the town of *Dyflin* proper, probably at *Duib Linn*, somewhere at the confluence of the River Liffey and the Poddle, near Temple Bar. This was an ideal location for a settlement, on high ground overlooking the River Liffey, protected from the south-east by Poddle. It also had access to the river for boats. Although initially located at the east, the town gradually expanded westwards along High Street, so that by the eleventh century it was a large thriving urban settlement, with streets and houses inhabited by a large, ethnically mixed population of traders, craftsmen and slaves.

Dyflin was enclosed within a large earthen bank, topped with post and wattle fence, and there is good archaeological evidence for houses, streets and plot boundaries. It would appear that the town was laid out in an organised, if cramped fashion, following the contours of the hill, possibly according to the instructions of a central regulating authority.

At Fishamble Street, twelve tenement plots can be traced more or less constantly across time, with the occupation of at least 150 different houses over 150 years. Hiberno-Norse Dublin's houses were entered from the street. 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. It is likely that the townspeople were largely self-sufficient, raising pigs and goats in the back garden, while beef cattle and other agricultural produce were brought in from the surrounding countryside.

There is archaeological evidence that the people of Hiberno-Norse Dublin, Cork and Waterford consumed a lot of fish and shellfish. A marine diet did not seem to feature highly with the native Irish, and recent stable isotope analysis of some Early Medieval human skeletons has hinted at an increased marine diet in Ireland in the Viking Age and Anglo-Norman periods. This is also supported by the archaeological evidence for the increase in use of Early Medieval wooden fish traps on the Shannon estuary and Strangford Lough (and elsewhere around the coastline of Britain) after *c.* A.D. 1000. Fishing was clearly important at Hiberno-Norse Dublin, as lead line-weights, wooden net-floats and stone sinkers found in excavations indicate fishing using lines and nets from both the shoreline and offshore in boats. Margaret McCarthy's archaeozoological studies of deposits from Dublin, Waterford and Cork confirms this focus on marine species, with bones from hake, cod, ling, plaice and herring all known from these towns. Undoubtedly too, there were wooden fish traps situated along the banks of the river. It is also likely that the Vikings were involved in hunting marine mammals, such as porpoise, whales and seals, and an iron harpoon head found at Fishamble Street was probably used for this purpose. Wildfowl such as teal, duck and mallard were also trapped in the estuarine marshlands.

Norse rural settlement in Ireland, AD 800-1100

The Archaeology of Dyflinarskiri

It has traditionally been accepted that the best evidence for ninth century Viking rural settlement in Ireland are the few Norse burials on the northeast, west and southwest Irish coastline (Bradley 1995, 10). However, is clear that the discovery of a Viking burial, or indeed Viking stray-find in rural Ireland cannot be directly equated with evidence for Viking settlement as this material-culture can also be a product of trade or imitation on the part of the native Irish. It is also still not clear what role the Scandinavian towns played within the Irish countryside or how and what criteria should be used to identify a Viking settlement outside the urban towns.

The Vikings established a raiding base at Duib Linn about A.D. 841 but it was not long until they were exerting their authority across the regional landscape that would later become known as *Dyflinarskiri* ('Dublin-shire'). Bradley (1998, 56-65) examined the place-name evidence in the environs of Dublin to reconstruct the potential size and scale of the region and argued that by the twelfth century the Viking-controlled area comprised all of modern county Dublin and parts of counties Wicklow, north Wexford and Kildare. The early extent of *Dyflinarskiri* may also be gauged from annalistic references, for example the *Annals of Ulster* report an outlying Viking settlement at Clondalkin in A.D. 867.

The scope of Viking/Hiberno-Norse regional influence is however still a matter of debate and is likely to have fluctuated over time due to different political and military developments. The character of Viking/Hiberno-Norse settlement in *Dyflinarskiri* is also still highly circumspect and not enough is known yet to reconstruct Scandinavian settlement patterns or their interaction with the local Gaelic communities.

There is scant but nevertheless emerging archaeological evidence for some form of Scandinavian rural settlement in the region. A potential rural Viking settlement was discovered at Cherrywood, Co. Dublin (Ó Neill 1999). The first phase on the site is represented by a ring-ditched enclosure which contained a sixth/seventh century A.D. inhumation cemetery. The second phase consisted of possible Viking longhouses, 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 elsewhere been found associated with burials of Viking women in Ireland and the Hebrides. The form of the buildings as well as the artefactual evidence would suggest that this may have been the location of a rural Viking settlement.

Excavations at Ninch, Laytown, Co. Meath (Eogan, Reid & McConway 2000-2) revealed a highly complex multi-phase settlement dating from the fourth to twelfth century A.D (See Settlement/Cemetery Section). A series of sub-rectangular enclosures was constructed in the southern half of the site during the final phase, from which coarse pottery, a stave-built bucket, a jet bracelet and two ring-pins were recovered. A ring-pin with Viking Dublin parallels 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-Norse settlement. Both Cherrywood and Ninch were located on previously important Early Medieval cemeteries with associated settlement evidence.

Other potential Viking settlements sites include Brownsbarn, west of Tallaght in Co. Dublin where a partial investigation uncovered a Viking bone comb dating to the ninth or tenth century A.D (Bradley 1995, 12), and Feltrim Hill, Co. Dublin where Viking Age bronze stick pins were discovered on an enclosed site (*ibid.*). A copper-alloy spiral-ringed pin and copper-alloy brooch pin were found on another potential Viking site at Cooldrinagh, Co. Dublin (Mullin 1995).

The assertion for Scandinavian rural settlement is highly circumspect and often based on very tentative evidence. Perhaps the best indicators for Scandinavian influence across the rural countryside can be found in the distribution of Viking coin and bullion hoards indicating interaction between the two groups of people while a group of grave-markers, known as the 'Rathdown slab', in south Co. Dublin is still conceivably the best evidence for regional Viking settlement within *Dyflinarskiri*.

Viking Age Rural Miscellaneous Finds 1930-2004

The majority of evidence for Viking activity across the island is attested through the discovery of stray find objects. Whether this can be construed as evidence for Viking rural activity or were instead the products of trade or stray-finds is still open to debate. The vast majority of these finds have been recorded in the topographical files in the National Museum and the Ulster Museum.

Excavations and underwater diving have been responsible for discovering a range of Viking-related archaeological items. River dredging at Shanmullagh, Co. Armagh in 1990 uncovered a tenth century Viking hoard, and an underwater dive was undertaken in 1992 and 1993 to recover other associated items (Bourke 1992-3). Further Viking and ecclesiastical items were uncovered. Bourke (1992) suggested that the whole assemblage represented the stock of a ninth century A.D. Hiberno-Viking metalworker, perhaps derived in part from the treasury of Armagh, only some 10km from the find spot. River dredging along the Bann at Ferrystown, Co. Antrim also required an underwater rescue dive in which Hiberno-Norse ring-money was recovered (Bourke 1995), and a number of Viking age stick pins and a coin, minted in London *c.* 1035 for King Cnut, were discovered in Limerick (O'Donovan 1999). Weapons have also been recovered. A possible Viking axe was discovered during underwater diving at Coreen Ford, Co. Roscommon (Kelly 1989), and a seventh to eighth century iron sword, an iron spearhead of about the same date and a possible tenth century Viking axe were discovered during underwater diving at Kellysgrove Ford, Co. Galway (Kelly 1991).

Other suggested/Hiberno-Norse Coastal Settlements

A number of potential unenclosed Viking sites have been discovered along the south and southeast coast. Erin Gibbons and Eamonn Kelly have recently excavated a sunken rectangular stone-built house overlooking False Bay near the location of some Bronze Age and Early Medieval shell middens (Gibbon & Kelly 2003, 63; O'Sullivan & Breen 2007, 121). The house had a hearth that contained animal and fish bone and the tenth century double-sided antler comb discovered at the site could be interpreted as Hiberno-Norse in style.

The large unenclosed site of Begenish, Co. Kerry, may also have had a Scandinavian phase (O'Kelly 1956; O'Sullivan & Breen 2007, 122). 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-Norse ringed pins, were also found on site. Sheehan *et al* (2001) have speculated that the site may have been used as a way station for mariners sailing from Hiberno-Norse 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).

Excavations at Bray Head in Valentia Island, Co. Kerry in 2000 (Hayden 2000:0423) 100m to the west of a large early medieval unenclosed settlement uncovered a large early medieval stone round house with an associated souterrain. The round house was replaced within the early medieval period by a unusual, sub rectangular, bow-sided building whose walls consisted of regularly-spaced large posts. Hayden (2000:0423) suggested that this building might be of Scandinavian origin. This structure was in turn succeeded by a late medieval stone walled house.

At Rinnaraw, Co. Donegal, there is a similarly located (i.e. coastal) 'cashel' that produced a house that might be argued to show Norse influences. The central stone-built house, dating to around the ninth century, at the cashel of Rinnaraw (which is situated on the western side of Sheephaven Bay, Co. Donegal), was compared to similar Scandinavian examples with rounded external corners at the Orkney Islands (Fanning 1987-92; Comber 2006). Both the historical sources and further ninth century Scandinavian stray-find objects in the general area support the idea that the northwest coast was an area of importance to the Vikings. Alternatively, however, Rinnaraw could be an Irish settlement whose inhabitants were influenced by and trading in the traditions and ideas of the Atlantic seaways of Ireland and Scotland.

Recent discoveries at Shandon Fort, Co. Waterford have also been recently used to suggest Norse influences on a rural settlement. Shandon fort, situated on a promontory to the north of Dungarvan in county Waterford, was the subject of excavations in 2001 and 2002

(Dennehy 2001:1242; Elder 2002:1790). The site comprises a large rectangular enclosure (90 X 40m) defined by a large ditch which had been partially destroyed through 18/19th century quarrying. The enclosure was partially excavated and revealed several hearths along with a large number of possible refuse pits, middens and charcoal pits in the interior. Many of the pits contained traces of iron and copper working. A line of the rectilinear ditch was excavated and revealed a narrow slot-trench along the inner edge of the ditch, which could possibly indicate a palisade. An ironworking area was identified with evidence for iron smelting outside the enclosure but was not excavated. Finds recovered included iron pins and a coper ingot. It was suggested that the site was intermittently visited for fishing during prehistory before becoming an established settlement during the 10/11th century A.D. Elder also suggested that it may have been associated with the Vikings on account of the find of an 11th century Hiberno-Norse coin, a 10th century trial bone Hiberno-Norse motif, several iron knives and the proximal end of a whale humerus in the 1930's.

Excavations at the promontory fort at Dalkey Island off the Dublin coast have recovered Viking age finds suggesting that the site was re-used in the period, and it has been suggested that the site may have operated as a detention camp for slaves (Bradley 1995, 12).

Early Medieval Houses and Buildings

Background

Early Medieval houses, dwellings and other domestic buildings are key cultural artefacts from the period, as they provide significant information on domestic life, crafts and industry, as well as evidence for the social and ideological understanding and role of space (Lynn 1978; 1994; Wallace 1992; O'Sullivan 2006). Houses and dwellings were the places where the household slept, ate food, gathered for social occasions and extended hospitality to their wider kin and neighbours. At times of the day, and during the darkness of night, people would have gathered there to prepare food, to carve bone and wood and embroider textiles, or simply to while away the hours around the fire, listening to songs and stories about past times. Indeed, it could be suggested that houses were the places where early medieval social identities were created – as children were socialized, through their observation of the ways of the household, into an understanding of their own place in the world and how their society worked. Early Medieval houses and dwellings should be seen then as key venues for the enactment or performance of social identities of ethnicity, social status, gender, kinship and community. O'Sullivan (2006) has recently explored how these people built, dwelled within and thought about houses and how in particular they might have used the house, and the objects within it, to build their distinctive social worlds.

A range of multidisciplinary sources have been used to reconstruct the character and use of houses in early medieval Ireland. There is particularly good archaeological evidence for houses in both the rural and urban landscape in this period, particularly between the seventh and the eleventh century AD (in contrast with both the Iron Age and the later medieval period). Chris Lynn's (1978, 1994) studies have developed a good understanding of the architectural development of early medieval houses in terms of their shape, size, building materials and the organization of internal features. Archaeological excavations have uncovered evidence for several hundred examples in early medieval ringforts, crannogs and other sites. Urban archaeological excavations – particularly those by Pat Wallace (1992) on Fishamble Street, and by Linzi Simpson (19**) in Temple Bar, Dublin and Maurice Hurley *et al* (19**) publications on Waterford and Cork - have also led to an unsurpassed understanding of the form of houses from Norse Dublin and Waterford, where waterlogged conditions lead to intact floors, benches, beds, doorways and porches. This physical or material culture evidence for house shape and size, for construction materials, floors, hearths, storage and domestic occupation can be used to enable a reconstruction of cultural norms and daily life and practice within actual early medieval houses. A large and growing corpus of excavated

early medieval buildings is therefore now present within the archaeological record which can be analysed.

Excavated early medieval houses 1930-2004

How many early medieval houses?

In 1978, Lynn suggested that there were over 160 Early Medieval rural houses and structures recorded (Lynn 1978, 29). Many of these sites could be 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. He further increased this figure in a publication in 1994 suggesting that there were approximately 250 ground-plans comprehensively recorded up to 1986 with some further updating until the time of publication of the article (Lynn 1994, 81). EMAP also undertook a survey of the amount, shape and form of Early Medieval buildings excavated between 1930-2004. The results are very provisional and should be treated very cautiously as the bulletin reports often failed to give information about the date, shape or construction methods used. These figures are likely to be slightly revised at a later date in the EMAP project when excavation reports can be consulted. Nonetheless, EMAP has established that *approximately* 522 rural early medieval buildings were excavated between 1930-2004. A further 159 structures were also excavated in rural contexts. It is unclear from the sources consulted whether some of these structures represent buildings. These figures include excavated buildings in both rural settlement and ecclesiastical contexts. It must be emphasised again that these are *provisional* results.

It is known that both round and rectangular buildings were a feature of early medieval rural sites. Roundhouses were the most common form of building in the earlier (i.e. AD 400-800) phase of the period until rectilinear buildings began to emerge in importance during the tenth century A.D. (Lynn 1978, 37; Lynn 1994, 83). Lynn (1978, 32) has cited a number of examples in which round houses were actually succeeded by rectangular buildings, for example at the early medieval cashel of Carraig Aille II, Co. Limerick, at Church Island, Valencia, Co. Kerry; Cush, Co. Limerick; Dunsilly, Co. Antrim, Lecanabuaile, Co. Kerry; Nendrum, Co. Down and Rathmullan, Co. Down He noted that the early roundhouses were usually built using wicker or post-and-wattle and had an average diameter of 6m (Lynn 1978, 91). Lynn's observation that roundhouses had a tendency to be associated with enclosed settlements spurred him onto claim that sites like ringforts were not likely to have been occupied at the end of the Early Medieval period; a claim that has been supported by radiocarbon dating of this monument (Stout 1997; Kerr 2007). Rectilinear houses, typically measuring between 6-8m and constructed with dry stone and/or turf lower walling, emerged as the dominant form of building by the end of the tenth century A.D (Lynn 1978, 85). Rectilinear buildings also occurred in Early Medieval settlement sites like ringforts, but it was often able to prove that they were preceded by an earlier phase of circular buildings (Lynn 1994, 92).

Early medieval rural buildings – form and character

As bulletin reports were often written while excavations were in progress, it was not always possible to give information about detailed information about the buildings. It is very early days in beginning to synthesis the figures, particularly as the results are based on partial and incomplete evidence. The table 3:12 and graph 3:8 below illustrates the figures for the total approximate amounts from different excavated types of buildings. The building type of a significant number of excavated buildings (121 in total) could not be established. The vast majority of excavated buildings were constructed in wood with the most common type being post and wattle structures. It is difficult to establish if sill beam structures were constructed in rural Ireland in the early medieval period. Preservation in rural contexts is unlikely to have been as good as that which occurs in the Viking towns such as Dublin and Waterford where

evidence of sill beam structures survive. One possible example of a sill beam structure was excavated recently at a settlement/cemetery site at Balriggan, Co. Louth. (http://www.nra.ie/Archaeology/LeafletandPosterSeries/file,3409,en.pdf).

Another potential example was excavated at a ringfort site with associated souterrain in Shane's Castle Park, Co. Antrim (Warhurst 1971). Fragmentary remains of at least six structures were identified within the ringfort. One of these consisted of two longitudinal trench slots, presumably to hold the sill of a wooden structure, and has been identified by the excavator as being contemporary with the primary occupation of the rath. It is evident that further research will be required for these forms of buildings.

A number of sod and stone walled structures were also excavated. These structures were contained of dry stone and/or turf lower walling. The figures for these structures are preliminary and represent a work in progress. It is evident that no major distinction can be made between a stone or sod walled structure as both materials can be used in the construction of these buildings. While these figures are provisional, it does not appear that these forms of buildings were as popular as post-built structures in the Early Medieval period.

Table 3:12 Excavated Rural Buildings 1930-2004

Building Type	Excavation	EMAP Site	Total Building	Total Definite	Total Approx.
Structure	39	37	159	59	100
Building	53	52	121	57	64
Post and Wattle Building	124	109	286	228	58
Sod Walled Building	11	9	18	18	0
Stone Building	51	45	80	68	12
Clochán	12	11	17	17	0
Total	**-**	**-**	**681**	**447**	**234**
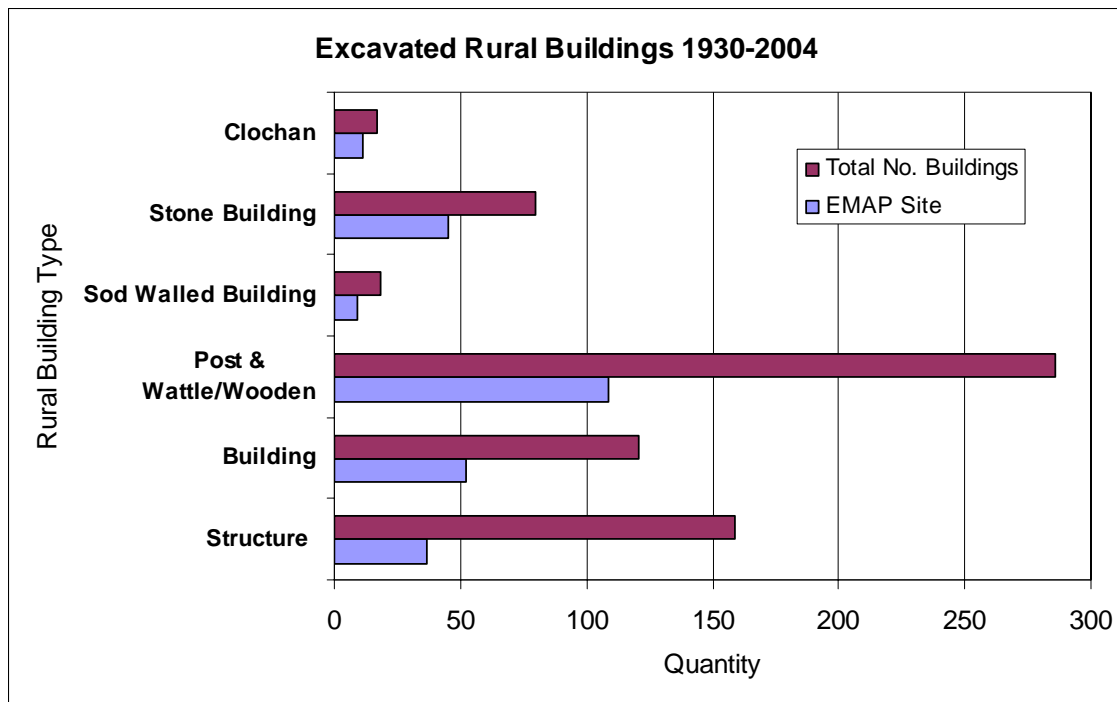
Figure 3:8 Excavated Rural Buildings 1930-2004

Early medieval rural buildings – plans and layout

Lynn (1978 & 1994) has examined the evidence for round and rectilinear shaped houses in great detail. It is not necessary to give examine this evidence in detail. It is evident that that the figure above are very provisional. Only a cursory review of some of the details and findings are thus outlined below.

The first two phases of occupation at Rathmullan were associated with circular houses while rectangular buildings were constructed in Phase 3 and Phase 4 (Lynn 1981-2, 65). Excavations at a cashel at Loher (O'Flaherty 1986) also revealed that two early circular wooden buildings were succeeded by a rectangular structure, and excavations at Ballynacarriga, Co. Cork revealed that a large circular stake hole built structure was replaced by a later rectangular structure (Noonan 2001).

These examples serve to support Lynn's assertions that round post and wattle buildings are often found to predate rectangular stone or sod-walled structures. A large number of sites were found to contain both rectangular and circular buildings, however often no information was given about the dating of these structures with the consequence that, for the majority of sites, it was not possible to establish a chronology of building types.

Figure-of-eight sites have been exposed during excavation at a number of sites, for example Corrstown, Co. Londonderry (Conway 2001), Deer Park Farms, Co. Antrim (Lynn 1987), Lisleagh 1, Co. Cork (Monk 1988; Monk 1995), Cathair Fionnúrach, Ballynavenoor, Co. Kerry (Gibbons 1994-97) and Newtown, Co. Limerick (Coyne & Collins 2003). Figure of eight buildings have also been excavated in a number of ecclesiastical contexts including Ballybrolly, Co. Armagh (Lynn 1978-9), Illaunloughan, Co. Kerry (Walsh & Marshall 1992-95) and Caherlehillan, Co. Kerry (Sheehan 1998).

Viking/Hiberno-Norse Buildings

Previous Surveys

While Early Medieval 'Irish' rural circular and roundhouses have been excavated since the early twentieth century, our knowledge about Viking/Hiberno-Norse buildings was developed over the last thirty or so years during urban redevelopment projects. Since then a vast amount of buildings have been excavated, nearly all from within Dublin, Waterford, Limerick, Wexford and Cork. The EMAP survey – based mostly on Excavations bulletins reports - has established that approximately 566 Viking buildings may have been excavated from across the island from 1930-2004.

While Hillary Murray (1983) was the first person to publish a corpus of a total number of excavated sites; she examined 58 buildings excavated before 1976 in Dublin city centre and established an initial classification for the structures, it was Dr. Pat Wallace (1992) that systematically reviewed the evidence and produced *the* major statement on these buildings in their Irish and international contexts. Wallace (1992, 7) found that over 200 buildings had been excavated in Dublin from 1961-82 at the sites of Winetavern Street (13), St. John's Lane (10), Fishamble Street (127), Christchurch Place (26) and High Street (19) and Dublin Castle (6).

EMAP Survey and a quantification of known Viking/Hiberno-Norse Buildings

A review of the EMAP provisional data now suggests that approximately 430-450 Viking buildings were excavated within the Hiberno-Norse area of Dublin from 1961-2004.

Approximately 106 buildings were excavated at Waterford. The majority were excavated during the large-scale redevelopments around Arundel Square and Peter Street in the late 1980s and early 1990s. Approximately 25-30 Viking buildings was excavated at Cork, particularly along South Main Street, Tuckey Street, Washington Street and Hanover Street from the mid 1990's. Finally there was approximately 10-20 Viking buildings excavated at Wexford at Bride Street as well as potentially at Barrack and St. George's Street in the late 1980s and early 1990s. The most fruitful excavations were on the South Island mostly from the later 1990s till 2004. Finally, approximately 10 excavated buildings could be suggested for Limerick. Those that have revealed Viking habitation evidence were undertaken in the early 1990s and were primarily around King John's Castle.

The figures demonstrate that approximately 75% of Viking building excavations have been undertaken in Dublin city centre. The results from the large-scale redevelopment undertaken in the heart of Viking Waterford also indicate that the other towns are also likely to have been intensively occupied during this period.

The architectural character of' Viking Type' Houses and Buildings

Wallace (1982; 1992, 19) proposed that the house form, or plan of the buildings, should be the principal mechanism used to establish a classification of buildings. He analysed a large sample of buildings excavated from 1961-82 in Dublin city centre and suggested that the buildings could be divided into five principal types. To these may be added two other types (6 & 7) which are predominantly found in Waterford.

- 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 (1992, 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 1992, 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 1992, 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 1992, 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-Norse towns. They have also only been found at Waterford and date to the mid twelfth century.

EMAP's survey of the data has adhered to the classification system purposed by Wallace (1982 & 1992). Buildings were described as 'Viking Building' when no information was given or could be established about the structures. Stave-built buildings whose type were not mentioned or could be established were classified as 'Viking Stave-built Building'. It was often difficult to establish an accurate number for excavated Viking types at a site. Recourse was made to published material however when it was available. It is evident however that this survey was based on partial and incomplete evidence. These early results should then be treated very *provisionally*.

Viking Type 1 Buildings clearly predominate and comprise approximately 300 or so of the total number of excavated buildings. They have discovered elsewhere in Cork, Wexford and Waterford. Type 2, 3 & 5 buildings were found principally in Dublin, Waterford and Cork. Type 2 buildings comprised 33% of the total number of building found during the Waterford excavations from 1986-92 (Scully, 37). They constituted a small percentage of Wallace's (1992) survey results. However, excavations at Essex Street West revealed a vast number of Viking buildings, a large portion of which were Type 1.

It is likely then that the location of different political, economic and industrial activities effected the distribution and density of different building types across the towns. 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. (Scully 1997, 45). Similar structures have been excavated at King John's Castle and date mainly to the twelfth century (Wiggins 1990 & 1993-98). An early-eleventh-century example was recorded at Werburgh Street, Dublin (Hayden 1994). 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, most date to the twelfth century.

The earliest houses from Cork, Waterford and Wexford date from the eleventh century A.D., although excavations in Dublin have revealed building dating from the ninth century A.D. It has been noted by Scully (1998, 37) that the mid-eleventh/early thirteenth century Viking/Hiberno-Norse Type 1 buildings at Waterford can be compared to the Dublin Type 1 examples, which principally date to the tenth and eleventh centuries. This supports Wallace's argument that Hiberno-Norse house-building was influenced by a conservative tradition throughout the Viking period (1992, 11). A change in architectural traditions is apparent in the twelfth century, fro example excavations at Waterford and Cork have revealed evidence that wattle-and-post construction is replaced by the sill-beam structure at this time.

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). It was a rectangular structure (7m long x 4.5m wide) and consisted of a double row of large post holes with a hearth and side entrance (Simpson 1999, 9). 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 indicate a 68% probability of it belonging to between A.D. 780-890. If it does date to around A.D. 800, then it could represent evidence for potential Anglo-Saxon contacts that are occasionally apparent in burial practice, art and trade. It is unique to any other building in Ireland and its function and origin are still a matter of debate.

Table 3:13 Excavated Viking Buildings 1930-2004

Viking Building	Exc. Lic	Site	Total No.	Total Confident	Total approx.
Viking Building	24	23	116	88	28
Viking Stave-Built Building	4	4	8	4	4
Viking Type 1	20	19	340	286	54
Viking Type 2	7	7	70	32	38
Viking Type 3	3	3	20	16	4
Viking Sunken Floored Type 4	9	8	22	22	0
Viking Type 5	3	3	14	10	4
Viking Sill-Beam Type 6	4	4	5	5	0
Viking Stone Building Type 7	2	2	2	2	0
Anglo-Saxon Type Building	1	1	1	1	0
Total	-	-	**598**	**466**	**132**

Excavated Viking Building Types 1930-2004
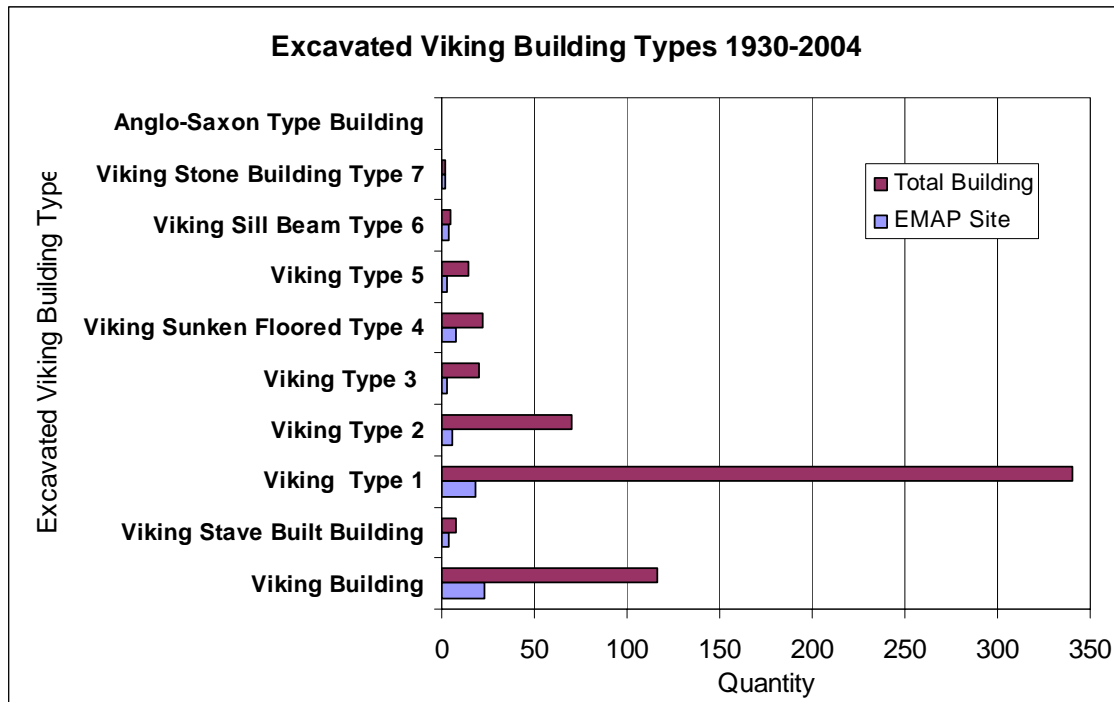
Figure 3:9 Excavated Viking Town Buildings 1930-2004

Conclusions

The most recent synthesis and debate on the social and ideological organisation of houses and buildings in Early Medieval Ireland has been produced by O'Sullivan (2006). Chris Lynn's (1978, 1994) studies have shown that the earliest (between *c.* AD 500-800) house structures were usually roundhouses, constructed of stone or post-and-wattle walls, with wooden poles for joists and roofs of thatch of reed, turf or straw. Most were fairly small (typically 4-5m in diameter) although some were significantly larger (6-10m in diameter). The enclosed house space was typically about 45m^2, comprising a single small room. In terms of location, roundhouses tend to be located towards the centre of enclosures. Both early Irish law and archaeology suggest that these sizes were closely related to social rank, 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 claims of the narrative literature, there is no archaeological evidence 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. This backhouse or *cúile* may have been used as a kitchen, sleeping area or private or exclusive space.

Lynn (1994) has identified a significant change from the use of roundhouses to rectilinear houses after about A.D. 800. Towards the end of the Early Medieval period (tenth to eleventh centuries AD), rectangular houses built in stone or turf were normal, and roundhouses became rare. Moreover, on most ringfort sites where there is clear dating evidence, roundhouses are physically replaced by rectangular structures. These rectangular houses were typically built in stone, earth or turf, with an average measurement of 6-8m in length. They were simply constructed; with low stone walls, lines of boulders, with internal wooden poles to support roof of reed, turf or straw. Rectangular houses are often paved. They also tend to be found closer to entrances and towards the sides of enclosures. The reasons for

this transition in architectural styles from round houses to rectangular houses remain unclear and influences from the Irish church, from later Anglo-Saxon England and the Viking Age world are all possible. It is 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, 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.

Archaeological excavations in Dublin, Waterford and Wexford have also provided much evidence for houses in these towns between the tenth and the thirteenth centuries A.D. In Hiberno-Norse Dublin, houses were usually located on the front-end of long narrow plots, which originally seem to have stretched from the street frontage and occasionally back to the town defences. Each house was entered from the street, with a back or side exit into the plot out the back where there may have been vegetable gardens, pig pens, latrine buildings, workshops and storehouses. Each house also would have had a cess pit out the back. There were several different types of house in use in Hiberno-Norse Dublin and late Viking Age Waterford. Wallace's Dublin Type 1 houses were the most common (comprising about 70% of all houses in Dublin). The origin of the Dublin Type 1 house is still a matter of debate. It may have evolved in Ireland before the tenth century, or it may be an insular version of the rectangular farmsteads found in Norse settlements in the Earldom of Orkney. In any case, it appears to be an ethnically distinctive house type that also influenced other Irish domestic architecture. There are rectangular houses, broadly similar to the Dublin Type 1 house, from rural Irish sites such as Knowth, Co. Meath, White Fort, Drumaroad, Co. Down, Antiville, Co. Antrim and most recently from Truska, Connemara, Co. Galway and from Cherrywood, Co. Dublin. The question of whether the latter two in particular are actually ethnically Viking, Norse or 'Irish' rural dwelling places remains an interesting if controversial topic. By the mid-twelfth century A.D. in Waterford (and slightly later in Hiberno-Norse Dublin) there is a shift towards the use of rectangular houses constructed on sill-beams with earth-fast roof supports or to houses built of stone walls. By the mid-thirteenth century AD, fully-framed timber houses emerge.

In the tenth-century A.D, Dublin's Hiberno-Norse houses were sub-rectangular in plan, with double entrances, aisled partitions and internal roof supports. They typically measured 7.5m by 5.5m; with walls up to 1.25 m high. The walls were of post-and-wattle, typically of ash, hazel and willow. The roofs were supported on four main posts arranged in a rectangle within the floor area. There were usually two opposed doors, located in the end walls, one giving access to the street, the other to buildings at the rear of the plot. Internally, the floor space was divided into three, with the central strip, sometimes paved or gravelled, being the broadest. The floors of the houses were also often covered with laid clay or post-and-wattle. A rectangular stone-lined fireplace was located in the centre. Along the side walls, two low benches were used both for sitting and sleeping. Sometimes corner areas near the doors were partitioned off to form a private space. The front and rear 'porches' are also occasionally distinguished by a separate area of flooring of clay or a distinct panel of wattle. Palaeoenvironmental studies of floor deposits of dung, hair, mosses, food remains, ash, and brushwood have revealed much of living conditions and practices.

Social and cultural interpretations of these Norse buildings would attempt to trace the organization of domestic space in terms of household, ethnicity, kinship and gender. It should also be remembered that these Norse houses were occupied by people who believed in different gods and mythologies; people who lived in a society structured differently to 'native' Irish society. Norse houses in Scandinavia, Iceland and Greenland do seem to be organized into 'rooms' that reflect social, cultural or symbolic spaces - e.g. living areas, sleeping rooms, working areas, rooms for animals. In Hiberno-Norse Dublin there is a sense that the houses have social spaces of some sort. The front porches, often floored differently from the rest of the house (with clay or wattle) and perhaps screened from the rest of the house by post-and-

wattle, perhaps enabled some control of how neighbours would encounter the inner, private household. The back porches leading out into the plots behind the houses may have been used to separate the living space from the backyard, perhaps used as a space to store food, tools or raw materials or to defecate comfortably inside the house (amongst the mosses, textile rags and food debris recovered from Dublin's cess pits have been old, turned wooden-bowls which were presumably used as 'chamber pots' before they were finally discarded!). At Essex Street West, an early tenth to mid-eleventh century house had a concentration of hazelnuts and large animal bones in one corner, suggesting either the storage of food – or food waste. In the town of Hiberno-Norse Dublin (unlike the rural setting of other Norse houses in the north Atlantic), it is also to be presumed that a degree of 'social blindness' – an ability to discretely ignore the noises of the neighbour's family rows through the wattle walls – would be necessary to enable households to live in such close proximity in the densely packed streets of the town.

Chapter 4. The early medieval church

Introduction

The introduction of the Christian religious faith in the fifth century AD represented one of the most significant developments in early Ireland, probably being transformative of society, ideology and concepts of the person, while it also lead to changes in settlement, economy and international trade and exchange. Indeed, its material-culture remains represent one of the visible bodies of evidence for early medieval Ireland and the early Christian 'Golden Age' have been used to affirm the presence of a unique Irish cultural identity since at least the 19th century.

Indeed, the description of this phase as the 'early Christian period' illustrates 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. Its ecclesiastical monuments and artwork have, not surprisingly then, received extensive antiquarian and archaeological scholarly attention from the 19th century and beyond. In the early years of research, antiquarian scholars focused on describing and recording these remains. Art and architectural studies and surveys have since then been at the cornerstone of Irish early medieval archaeological scholarship.

In more recent years however excavation has been undertaken in increasing numbers at early ecclesiastical sites and has added a whole new dimension and set of evidence to interpreting and re-interpreting the early Irish church. This development has coincided with an emerging interest in a variety of research themes dealing with, among others, the character and location of the earliest Christian communities, the layout of ecclesiastical sites, the debate about 'monastic towns', the nature of early medieval pilgrimage and the character of early medieval pastoral care. This chapter will examine these particular research themes in the light of recent archaeological excavation evidence. It will also provide descriptive information about the amount and type of excavated ecclesiastical churches, buildings and structures as well as evidence for industrial and agricultural structures at ecclesiastical sites through the early medieval period.

Archaeological excavations and the early medieval church

Excavated Ecclesiastical Sites 1930-2004

O'Sullivan and Ó Carragáin (2008, 34) have recently noted that there was a new consensus among historians that held that 'only a minority of ecclesiastical settlements were monasteries in the primary sense of the word'. Elsewhere, Stout and Stout (2008, 68-70) have noted that the emergence of a new site type, the 'settlement' or 'secular' cemetery, blurs the boundary between ecclesiastical and secular sites. In the present instance we will not seek to apply all the criteria outlined by Swan (1983) for defining an ecclesiastical site. Instead the assumption of the existence of a church during the medieval period will be considered enough to apply the term 'ecclesiastical'. On the basis of this definition about 225 sites have been excavated in the period between 1930 and 2004 of varying archaeological significance within all of the 32 counties of Ireland (See Table 4:1). A further 52 ecclesiastical sites have also been partially investigated though it is not completely clear if they were founded in the early medieval period. These sites are excluded from the tables and graphs below.

The figures from Table 4:1 below demonstrate that relatively few early medieval ecclesiastical sites were excavated in the northwest, the northern central parts of Ireland and parts of

South Leinster (e.g. Carlow, Wicklow and Laois). Early medieval ecclesiastical sites were however more frequently excavated elsewhere, particularly in North Leinster, the eastern counties of Ulster and counties in the southwest and west adjoining the Atlantic coast. The number of excavated early medieval ecclesiastical sites in Dublin is unique however and indicates that the effects of development-led excavation in this part of the country.

Table 4:1 Excavated Early Medieval Ecclesiastical Sites Per County 1930-2004

County	Exc. Site	-	County	Exc. Site
Antrim	12	-	Leitrim	1
Armagh	6	-	Limerick	3
Carlow	1	-	Longford	1
Cavan	1	-	Louth	7
Clare	7	-	Mayo	8
Cork	12	-	Meath	10
Derry	4	-	Monaghan	1
Donegal	3	-	Offaly	7
Down	11	-	Roscommon	7
Dublin	31	-	Sligo	5
Fermanagh	4	-	Tipperary	12
Galway	16	-	Tyrone	7
Kerry	11	-	Waterford	7
Kildare	8	-	Westmeath	5
Kilkenny	7	-	Wexford	5
Laois	2	-	Wicklow	3
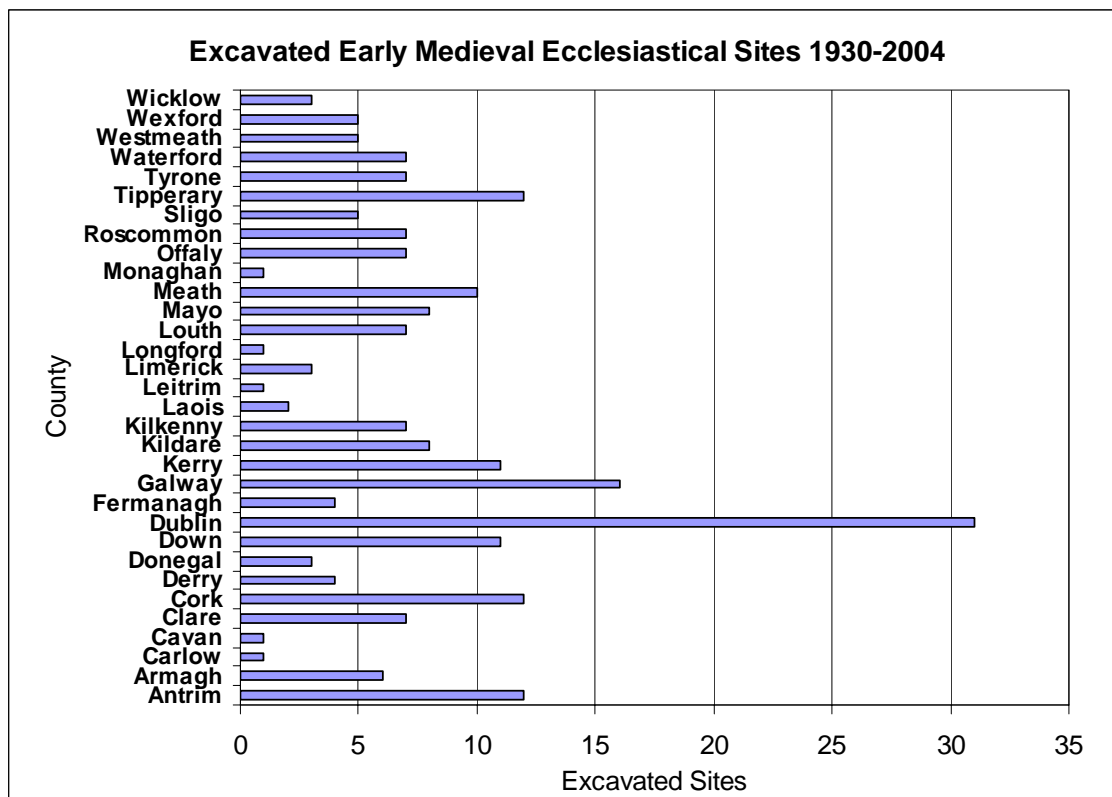
Figure 4:1 Excavated Early Medieval Ecclesiastical Sites Per County 1930-2004

The fact that ecclesiastical sites were generally known prior to excavation meant that they were generally avoided during large scale development schemes. Recent rescue excavations

were therefore generally due to extensions to graveyards, or limited building work in a vicinity of a known site. Urban sites were often particularly productive as they were sometimes located within the enclosures of early monastic sites. In contrast to other site types discussed in this report, the most extensive excavations tended to be undertaken as research programmes but with a bias towards small coastal sites in the west of Ireland.

Significance of Excavated Early Medieval Ecclesiastical Sites 1930-2004

At least 30% of the c. 225 excavated early medieval ecclesiastical sites 1930-2004 have yielded either no archaeology or archaeology of 'uncertain' early medieval significance. There are therefore only approximately 168 ecclesiastical sites which have yielded early medieval excavated archaeology between 1930-2004. 22 of these sites can be described as 'Highly Significant' in terms of excavated early medieval archaeology. Clonmacnoise, Clonfad and Armagh are examples of these particular sites.

Table 4:2 Significance of Excavated Early Medieval Ecclesiastical Sites 1930-2004

Significance	Number	%
Uncertain	27	12
No Significance	30	13
General	81	36
Significant	65	29
Highly Significant	22	10
Total	**225**	**100**
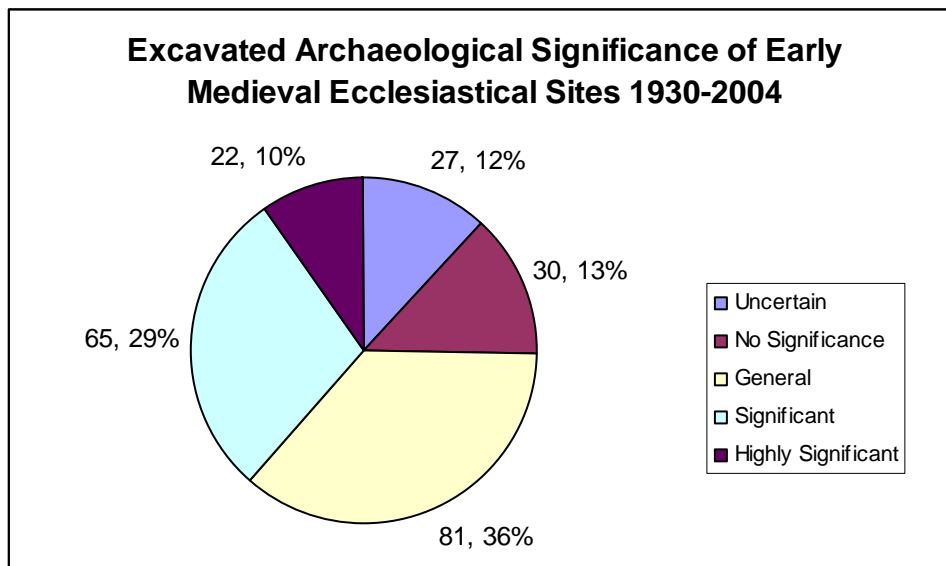
Figure 4:2 Significance of Excavated Early Medieval Ecclesiastical Sites 1930-2004

Early Medieval Ecclesiastical Sites - their Contexts and Locations

Ecclesiastical Settlement continuity with Iron Age

Many early medieval ecclesiastical sites provide evidence for prehistoric settlement, e.g. the extensive prehistoric flint assemblage found at Iona (Barber 1979, 353-354) or Unmask, Tyrone (Ivens 1988, 50), but direct evidence for immediately preceding 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). At Nendrum, Co. Down, Lawlor too had claimed a secular origin for the enclosure walls but there is no evidence for this (McErlean and Crothers 2007, 332).

Evidence for Iron Age settlement at an ecclesiastical site can be found at Randalstown, Co. Meath. The earliest datable find was a Roman imported fibula dated to the first century A.D. (Kelly 1975:32, 1996:20) Shards of B and E-ware and Merovingian glass indicates activity from the 5th century AD onwards. A ditch was excavated at Taghmon, Co. Wexford is said to have returned a radiocarbon dated between the first to fifth centuries A.D, but the raw radiocarbon carbon date was not published (Mullins 1999:888). An early phase of settlement preceding the establishment of an ecclesiastical phase at Kill St. Lawrence, Co. Waterford can be tentatively suggested as charcoal from a pit inside the inner enclosure has returned a radiocarbon calibrated date of A.D. 370-540 (O'Connell 2004, 27). A basal layer in the vallum at Armagh produced a radiocarbon date of 2 sigma AD 130-600 which led the excavators to state that "the date range does allow the possibility that the ditch existed for some time before the traditional mid-5th century date of St Patrick's arrival in Armagh and that the primary silting and its contents were of prehistoric date" (Brown and Harper 1984, 158).

There are also a number of sites that could be variously described as 'ecclesiastical' or 'settlement/cemeteries' (but see discussion in burial chapter below) which have revealed possible preceding settlement evidence. 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 1986, 137-141) but this too is likely to have been a secular cemetery (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 (1987, 58) than an earlier ringfort preceded the ecclesiastical settlement . The feature was not, however, excavated. In general, there is very little evidence that the monasteries were located on pre-existing settlement sites. There were generally 'green field' foundations.

The Location of Ecclesiastical Settlements

The majority of ecclesiastical sites are found in low-lying riverine contexts that were rarely above 120m and almost never above 180m (Swan 1982, 100). Hurley (1982, 310) in the most detailed study of their location suggests that the 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". 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. 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 (1997, 100) found that ecclesiastical settlements favoured a 'low lying riverine distribution' perhaps reflecting a desire to be near communication opportunities afforded by a riverside location. Clonmacnoise and Iniscealtra serves as an 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 and Hamlin 1977, 24). A desire to be near coastal route ways 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.

Ecclesiastical sites seem also to have political reasons for their choice of location. Historical sources suggest that monasteries were sometimes located on the borders of tuath (Ó Rian 1972) but it is difficult to substantiate this because the locations of early political boundaries are generally unknown. A close association between monasteries and important political centres, or at least large ringforts, has been observed in some parts of the country (Stout 1997, 102) but it is by no means clear that this is a universal occurrence. The close proximity between the monastery at Clogher and the nearby seat of the *Uí Crimthainn* (Warner 1988, 55) serves as good example. The proximity between Armagh and Navan Fort, an Iron Age ceremonial centre, is less convincing. Unlike Clogher, the site had been abandoned for several centuries before the foundation of Armagh and there were no important ecclesiastical foundation near the other Iron Age centres of Rathcroghan, Co. Roscommon and Dún Ailinne, Co. Kildare. 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 found to be build on an extensive spread of burning that produced radiocarbon dates ranging between 300BC and AD20 (White Marshall and Rourke 2000, 87). The authors, however, believe that the material was re-deposited but it much have come from a nearby source.

The character of early medieval ecclesiastical enclosures

Introduction

Early Irish monasteries are generally assumed to have been surrounded by an enclosure, or a series of enclosures. These defined the legal area belonging to the ecclesiastical settlement known as the termonn (Hamlin and Lynch 1977, 54). Doherty (1985, 57) have argued that Irish ecclesiastical settlements were designed to a set pattern with a sacred core that was surrounded by a number of concentric boundaries demarcating areas of decreasing holy importance. This template established a model for maintaining the spiritual purity of the holy core. The book of Mulling provides an idealized illustration of this hierarchy of holiness, showing a monastery comprising two concentric enclosures with crosses at the various entrances. Swan's aerial survey suggested that large ecclesiastical settlements generally contain an inner and outer enclosure (Swan 1985) but the surviving visible remains from most ecclesiastical sites appear to have only a single vallum (e.g. Hurley 1982). Nendrum, Co. Down (McErlean and Crothers 2007), is unusual in having three concentric enclosures. The recently discovered site at Clonfad, Co. Westmeath may also have three enclosures (Stevens 2006, 9). The majority of ecclesiastical sites had an enclosure between 90-120m in diameter. In the case of the larger ecclesiastical sites, however, the inner enclosures tended to have diameters of between 100 and 200m, with outer enclosures of between 300-500m (Swan 1985, 97).

There were, however, exceptions to the circular ideal. Iona, for instance, has a rectangular double enclosure. Excavation of part of the vallum bank suggested that it vallum incorporates existing Iron Age earthworks and that this might account for its usual shape (McCormick 1988, 78-80). Thomas (1971, 29) proposed a rectangular vallum at Clonmacnoise but recent excavation and survey suggests a semi-circular shape (Murphy 2003, 21). Hamlin (1977, 85-87) identified a rectangular vallum with rounded corners at Inch, Co Down but the earthwork might be associated with the later Cistercian abbey which also lies within the enclosure

Nendrum (Lawlor 1925) is the only Irish triple enclosed monastery to have been extensively excavated. The early excavation, however, was of poor quality by modern standards, and the report is particularly weak in terms of detailed plans and cross-sections. The Lawlor excavation, and subsequent smaller investigations, has recently been re-appraised by McErlean and Crothers (2008). The inner central enclosure was the ritual focus of the settlement containing church, round tower, burials, cross slabs and sundial (*ibid.* 337- 370). 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.* 370-378). Industrial activity was confined to some evidence for non-ferrous metalworking. The evidence from the outer enclosure was less clear. There was some evidence for ironworking (*ibid.* 386) and the grain-drying kiln present is a later medieval type. There is also evidence that some ecclesiastical sites may have had settlements outside the enclosures. Annalistic evidence for Armagh refers to *Trians* (thirds) that are referred to as being from outside the '*rath*' of the monastic enclosure (Hamlin 2008, 229). Excavations of these areas have produced material of an Early Medieval date (Hamlin and Lynn 1988, 57-61).

Excavated Early Medieval Ecclesiastical Enclosures 1930-2004

One of the most frequently excavated features at an early ecclesiastical site is its enclosures. Excavations of a significant number of ecclesiastical enclosures, particularly in recent years, are beginning to shed some light on the size, depth and width of these features and when they were first dug and subsequently modified during the early medieval period. The EMAP survey has identified 41 excavations associated with 34 EMAP sites that have revealed ecclesiastical enclosure features which can be securely dated to the early medieval period through either finds or dating evidence (Table 4:3 below). It has also identified a significant number of other potential early medieval ecclesiastical enclosures which will be the subject of more detailed research in future years. The results are still provisional as the online excavation bulletin reports were the principal source consulted for this stage of data gathering.

From the emerging archaeologically dated evidence, it appears that ecclesiastical enclosures were being built, often, well before the 8th century A.D. The evidence from a number of sites (e.g. Armagh, Caherhillan, Kill St. Lawrence, Tullylish, Reask and Iona) indicates that enclosures were possibly being built from possibly as early as the 5th or 6th century though there is some doubt as to whether these features were initially associated with ecclesiastical complex or preceding secular sites. Similarly, it has been suggested that ecclesiastical communities at Inishmurray (Edwards 1996, 118), Illauntannig, High Island and possibly Kildreelig (White Marshall & Rourke 2000b) were appropriating cashels and prehistoric stone forts in the early medieval period.

The ditch at the Irish foundation on Iona, for instance, was about 3m deep and nearly 3m wide (Barber 1979, 296-299). The primary ditch at Tullylish, Co. Down was of a similar size (Ivens 1987, 73) as was two sections of the ditch from the vallum at Clonmacnoise, Co. Offaly (Murphy 2003, 16). In some instances there is evidence for the re-cutting or replacement of these enclosures. At Tullylish, Co. Down, the original inner ditch seems to have been re-cut twice. The ditch eventually filled due to a mixture of silting, dumping, and the deliberate slighting of the enclosure bank. It was eventually replaced by a new ditch located some 6 m to the outside of the original ditch (Ivens 1987, 58-61). This ditch was regularly cleaned out during the earlier part of its life" but then allowed to fill up (*ibid.* 60). Regular cleaning was also noted in the vallum ditch at the monastery of Tallagh, Co. Dublin (McConway 1995:111).

At Dunshaughlin, Co. Meath the vallum ditch was deliberately in filled by the destruction of the bank and then re-cut. (Simpson 2005, 233-5) The original ditch at Dunshaughlin had been deliberately kept water-filled by directing the water into a spring into it. The spring was stone lined and capped with large flags and "the water was channelled from this chamber via a stone drain .. [which] fed directly into the ditch, tunnelled through the natural boulder clay

... bank deposits sealed the cut for the spring" (*ibid.* 233-4). The vallum at Clonmacnoise was also deliberately filled, presumably by the demolition of the ditch (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 river Shannon bridge, which dates to A.D. 804 (O'Sullivan & Boland 1997), or with the expansion of the settlement to the east of the core area (King 1992). The infilling of the ditch implies that the location of the vallum could be changed as expansion, or internal re-organisation of a monastery demanded. It may also imply that the function of the vallum might have become obsolete. In comparison to the thousands of ringforts with surviving substantial banks, few banks of early monasteries are still extant. Was there a deliberate policy of levelling these enclosures at some stage?

While they can be regarded as an essential component of an early monastery it need not be regarded as a primary one. This is most clearly demonstrated at Church Island, Co. Kerry. Here the cashel wall was one of the last items in the site's development (O'Kelly 1958, 77). The earliest buildings were the wooden church and sod house. There were subsequently replaced by a stone round house and church. At a later stage again a rectangular house was built on top of the large midden that had accumulated outside the round house's door. The cashel was build after the rectangular house as it curves to avoid it.

Early medieval excavated internal divisions within ecclesiastical enclosures

Internal divisions appear to be feature at a number of sites including Reask (Fanning 1981) and Inishmurray (O'Sullivan and Ó Carragáin 2008). At both sites they seem to demarcate an eastern area associated with the ecclesiastical buildings from the domestic buildings in the western part of the enclosure. The domestic buildings were also located on the western side of Illaunloughan (White Marshall and Walsh 2005). It might be argued that this might be due to purely practical considerations as the western enclosure walls would provide shelter for the living area from the prevailing SW winds. At Church Island and High Island, however, the living accommodation tended to be on the eastern parts of the site (O'Kelly 1957; Marshall White and Rourke 2000).

Inishmurray has not been excavated but the evidence from Reask indicated that the internal dividing wall was an early feature of the site. Some of internal ditches and walls at Moyne also appear to be Early Medieval date (Manning 1897, 45-9). Several recent excavations have also produced features that seem to represent internal divisions within monastic sites. Investigations within the chancel of Cormac's Chapel and beyond its north tower also identified a cut feature filled with limestone rubble which was suggested as representing a division between the east and west sides of the early ecclesiastical site (Hodkinson 1994). Excavations at Kilpatrick, Co. Westmeath (Swan 1976 & 1994-95) and Kill St. Lawrence, Co. Waterford (O'Connell 2004, 27) have also uncovered evidence for ditches and internal divisions.

Table 4:3 Excavated Early Medieval Ecclesiastical Enclosures 1930-2004

Site	Enclosing Feature	Dating Evidence	Date	Reference
Aghavea, Fermanagh	Enclosures	-	Early Medieval	Ó Baoill 2000:0352; Ó Baoill, 2008
Ardfert, Kerry	Enclosure Ditch	Finds and Burials in fill	Early Medieval	Moore 1991:062; Moore, F 2007
Armagh	Outer Enclosure	Twigs from base of Ditch	A.D. 130-600	Gaskell-Brown & Harper 1984, 158
Armoy, Antrim	Enclosure	Finds	8th century	Ó Neill 2004:0008
Butterfield, Dublin	Palisade Trench	Iron slag and finds	Early Medieval	Carroll 1997:184
Carnsore, Wexford	Enclosing Ditch and Bank. 40.5m X 33.5m in size	Broadly contemporary with 7/8th century wooden church and huts.	Early Medieval	O'Kelly 1975; Lynch, A & Cahill, M 1976-77
Church Island, Kerry	Cashel Wall	Cashel = final phase of early monastery.	Early Medieval	O'Kelly 1957-59, 75-77
Clonfad, Westmeath	Outer enclosure Ditch	-	Early Medieval	McGowan 2004:1723; Keeley 2004:1724; Stevens 2007, 42-43
Clonfad, Westmeath	Inner enclosure Ditch	Radiocarbon dates	A.D. 803-856 (Backfilled)	McGowan 2004:1723; Keeley 2004:1724; Stevens 2007, 42-43
Clonmacnoise, Offaly	Outer Enclosure	Animal bone from the bottom fill of the ditch	A.D. 714-873 (Backfilled)	Murphy 2003, 19
Clonfert, Galway	Outer enclosure (east of church)	Suggested 'early medieval'	Early Medieval	Walsh & Hayden 2001:496
Connor, Antrim	Outer enclosure (east side of church)	Souterrain ware pottery and early medieval finds	Early Medieval	Brannon 1986:02
Doras, Tyrone	Inner enclosure	Twigs from the lowest deposit returned date of 1305±90bp.	AD 615-885	McDowell 1987, 147-148
Downpatrick, Cathedral Hill, Down	Enclosure	Souterrain ware in Fill	Early Medieval	Brannon 1988
Downpatrick, Cathedral Hill, Down	Concentric inner and outer enclosure ditches	Souterrain ware in bottom fill of inner ditch.	Early Medieval	Brannon 1997:071
Downpatrick, Cathedral Hill, Down	Two curving Ditches at Cathedral Hill	Souterrain ware in fill of two curving ditches.	Early Medieval	Halpin 1998:115
Dunmisk, Tyrone	Enclosure	-	Early Medieval	Ivens 1980-84:0186; Ivens 1989
Finglas, Dublin	Enclosure Ditch	Wooden Bucket	Early Medieval	Kavanagh 2004:0599
High Island, Galway	Inner Church enclosure wall	Retaining wall with burnt refuse = AD 728–971, 2 sigma. Enclosure wall pre-dates internal church and paving.	Early Medieval/ Pre 11th century	Scally 2000:0391 White Marshall & Rourke 2000
High Island, Galway	Monastic Dry stone enclosure wall	Earliest feature on the site	Iron Age/Early Medieval	White Marshall & Rourke 2000a; White Marshall & Rourke 2000b
Iniscealtra, Clare	No. of Enclosure Ditches and banks were excavated	12/13th Century objects from fill of earlier enclosure ditch (1970)	Early Medieval	De Paor 1970-84, Exc. Bulletin
Kells, Townparks, Meath	Enclosure/Ditch (22m = D)	Possible 7th century brooch uncovered near base of ditch.	Early Medieval	Byrne 1987:41; Byrne 1988:57

Site	Enclosing Feature	Dating Evidence	Date	Reference
Kilgobbin, Dublin	Enclosure Ditches	Early Medieval Glass Bead in top fill of one of the curvilinear ditches	Early Medieval	Larrson 2004:0644
Kill St. Lawrence, Waterford	Outer and inner enclosure ditches	Charcoal from the Primary Fill of outer ditch	A.D. 370-540	O'Connell 2004, 27
Kiltiernan East, Galway	Dry stone enclosure Wall	Early medieval Finds and ironworking from associated layers.	Early Medieval	Duignan 1951; Waddell & Clyne 1995
Lackenavorna(Killederdadrum), Tipperary	Oval-shaped enclosure ditch and bank	Kiln c. A.D. 1000 cut into the inner slope of the ditch.	Early Medieval	Manning 1984
Lusk, Dublin	Enclosure/Ditches	Early medieval finds in the fills of shallow wide enclosure ditches.	Early Medieval	Moore 2001:448; Baker 2001:449
Maghera, Down	Suggested 'Outer' enclosure?	Souterrain Ware in fill	Early Medieval	Lynn 1980-84:0086
Nendrum, Down	Outer Cashel Wall	Charcoal beneath the outer cashel wall (terminus post quem date)	1375±45 B.P.	Brannon 1977-79:0033
Omey, Galway	Rectangular Enclosure Wall (14m X 8m)	Enclosure associated with early burial-ground.	Early Medieval	O'Keeffe 1990:055, 1992:092 & 1993:111; O'Keeffe 1994
Randalstown, Meath	Enclosure Ditch	Saxon glass bead found in ditch	Early Medieval	Kelly 1975:32 & 1976:20
Reask, Kerry	Dry stone Enclosure Wall	Enclosure wall represented one of the earliest features on the site.	Earliest monastic phase	Fanning 1981
Skellig Mhichil, Kerry	Inner enclosure Wall	?	Early Medieval	Bourke 1998:276; Bourke 2001:574
St. Peter's Church, Dublin	Dawson Court- Digges Lane Arcing Ditch	11/12th century roof tile recovered from upper fill of ditch	Pre 11/12th century	Ó'Néill 2001:376 & 2001:391
Tallaght, Dublin	Two Enclosure Ditches: inner enclosure c.130m diameter	Inner Ditch in filled by 14th century. Medieval pottery in upper fill of outer ditch	Likely Early Medieval	McConway 1994:102
Tallaght, Dublin	Outer Enclosure Ditch (discussed above)	Sherd of medieval pottery in basal fill of a secondary ditch re-cut	Likely Early Medieval	McConway 1995:111
Tallaght, Dublin	Enclosure Ditch	Twig lets from the base of the ditch	Mid-6th to 8th century	Meenan 1996:142; Walsh 1997:187
Tallaght, Dublin	Curvilinear Ditch	Animal bone	1210 ± 100 BP	O'Brien 1990:043
Termonfeckin, Louth	Suggested Enclosure	13th century sherd of pottery from fill	Pre 12/13th century	Murphy 1995:202
Tullylish, Down	Great inner Ditch	Charcoal samples from fill of ditch	Inner Ditch: A.D. 455-655: A.D. 340-605	Ivens 1987
Tullylish, Down	Outer Ditch	Charcoal samples from fill of outer ditch. Souterrain ware in fill supports later date for this ditch	Outer ditch: A.D. 680-955	Ivens 1987

Early medieval monastic 'streets' and pathways

Historical Sources

Annalistic sources often refer to 'streets' within monastic enclosures (Bradley 1998, 46). The term generally used is *clochán* which essentially means 'paved way'. O'Corrain (2005, 346) has recently identified, in a previously mis-understood text, a 11-12th century reference to a monastery with seven streets paved with recumbent pillar stones. The location of the monastery, *Cell Belig*, has not been identified. A substantial paved street some 2.4m wide and 70m long survives at Iona, Scotland but is thought to be of Benedictine rather than Early Medieval date (RCAHMS 1982, 142). Excavations between 1930-2004 have uncovered a growing number of examples of potential streets and pathways on ecclesiastical sites.

Excavated Ecclesiastical 'Street's and Pathways

Until recently, no 'streets' of this scale have been excavated in an Irish monastery. The most substantial monastic street in Ireland is at the early medieval monastic settlement at Clonmacnoise, Co. Offaly. This metalled roadway was located to the northwest of the monastery, on the banks of the River Shannon. It measured 3m wide. Its full length was not ascertained (as it ran out of the excavation cutting) but a length of 18.5m of this road was excavated. It is clearly of early medieval date because it was cut by a pit that could be dated to the late 11th century (King 1995, 240). The early medieval wooden bridge at Clonmacnoise, 160m in length by 4-5m in width and dated by dendrochronology to c. A.D. 804, investigated in the late 1990s would obviously also be indicative of some type of roads in the immediate vicinity of the monastery (O'Sulllivan and Boland 1997).

Paved pathways are generally not a feature of early medieval secular sites. Notable exceptions are the unique paved entranceway to Deerpark Farms, Co. Antrim (Hamlin and Lynn 1989, 46) and some pathways outside the rectangular houses at Ballywee in the same county (*ibid*. 33). They tend to be relatively common, however, on monastic sites. At Church Island, Co. Kerry, an extensive paved pathway, running along the inside of the cashel wall, joins the rectangular house (House 2) to the stone oratory (O'Kelly 1958, Plate XVII). At Illaunloughan, a straight section of pavement extends from door of the church while an "L" shaped length of pavement leads to the entrance of the shrine (White Marshall and Walsh 2005, 223). At High, Island the entire area between the church enclosure wall and the church is paved (White Marshall and Rourke 2000, 103). At Reask, Co. Kerry, there are short sections of paving in the entrance areas of some of the buildings (Fanning 1981, 71; 75) while more extensive areas of paving were found around the cells at Skellig Micheal in the same county (Bourke 2005, 132). At Inishmurray, Co Sligo, a paved pathway extends between the cell and the leacht at Trahanareear (O'Sullivan & Ó Carragáin 2008, 224). At Relickoran on the same island, a pavement of large sandstone slabs makes a complete circuit of the enclosure. In general, 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 1988, 3). At Mainister Chiaráin, Inis Mór, Galway an area of cobbling with associated drains provided early medieval radiocarbon dates (Ni Ghabhláin 1996:161; 1998:259). Other examples of paved pathways and surfaces are presented in Table 4:4 below.

Table 4:4 Examples of Excavated Pathways and Surface on Ecclesiastical Sites 1930-2004

Site	Feature	Location	Date	Reference
Cashel, Cormac's Chapel, Tipperary	Occupation Surface	Nave of Cormac's Chapel	Phase2: 9-10th century occupation surface associated with wooden church	Hodkinson 1992:064 & 1993:203 Hodkinson 1994
Cashel, Cormac's Chapel, Tipperary	Stone paving	Cathedral Area	Phase 3: Area of stone paving and stone church 11/12th century	Hodkinson 1992:064 & 1993:203 Hodkinson 1994
Chapelizod, Island/Martin's Row, Dublin	Metalled pathways	?	11/12th century	Walsh, 2002:0492
Clonmacnoise, Offaly	Gravelled Surface	Steeple Gardens	Early Medieval	Manning 1989:078 & 1990:096
Clonmacnoise, Offaly	Road	New Graveyard	Early Medieval	King, H 1990-98, Exc. Bulletin
Devenish, Fermanagh	Stone paving	Adjacent to Round Tower!	Possible	Waterman 1973-74
Dunmisk, Tyrone	Stone Paving	Metal and Glass-working	Early Medieval	Ivens 1980-84:0186; , 1988 & 1989
High Island, Galway	Stone Paving	Church interior church and enclosure wall	11/12th century	White Marshall & Rourke 2006, 100-03 & 124
High Island, Galway	Stone Paving	Exterior of Cells A & B	Early Medieval	Scally, G 95-2002, Exc. Bulletin

Site	Feature	Location	Date	Reference
Illaunloughan, Kerry	Stone paved path	Path towards 7/8th cent. Sod hut	7/8th century	White Marshall & Walsh 2006, 13-14
Illaunloughan, Kerry	Stone paved path	Path towards 8/9th cent. dry stone oratory.	8/9th century	White Marshall & Walsh 2006, 44
Inishkea North, Mayo	Stone paths and surfaces	Buildings & Slabs	Early Medieval	Henry 1945 & 1951
Inishmurray, Relickoran, Sligo	Stone paving	Pilgrimage Station	Paving of large enclosure early medieval	O'Sullivan & Ó Carragáin 2008, 251-98
Inishmurray, Trahanareear, Sligo	Stone paving	Pilgrimage Station	Early Medieval	O'Sullivan & Ó Carragáin 2008, 216-39
Mainistir Chiaráin, Oghil, Galway	Stone paving & Metalled Surface	Associated with Buildings	Possible	Ní Ghabhláin 1996:161, 1997:221 & 1998:259
Mainistir Chiaráin, Oghil, Galway	Cobbled area	Pre-date earlier Building B	Early Medieval	Ní Ghabhláin 1996:161, 1997:221 & 1998:259
Reask, Kerry	Stone paving	Buildings and internal wall.	Secondary monastic phase	Fanning 1981, 78-79
Sceilig Michael, Kerry	Stone paving	Area of Clochans and Oratory	Early Medieval	Lynch 1986:32 & 1987:25; Cotter 1991:071
Swords, Dublin	Stone paving	?	Possible	O'Carroll 1998:218

Early medieval Churches and Oratories

The Historical Sources

The historical annals, genealogies and other sources provide a good deal of evidence for the existence of different types of buildings and specialized communities within the Irish ecclesiastical settlement. The documentary sources refer principally to stone (*damliac*) and wooden (*dairthech*) churches as well as oratories (*Oratorium*) and the bell-tower (*Cloig thech*), more commonly known as the round tower. They also mention the kitchen at Kildare (*Cucann*) in A.D. 915 and the guest house (*Ies Oíged*) A.D. 1003 at Armagh (MacDonald 1981, 310-311). MacDonald has also suggested that the term *taigi aernaighi* refers 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 whether the term *erdamh* may refer to a small subsidiary church associated with but not attached to a larger church. MacDonald (1999) has suggested that annalistic 'recles' refer primarily to reliquary churches contained within small complexes within the settlement dating principally to the eleventh and twelfth centuries. The documentary sources also refer to a range of different groups of people living at ecclesiastical sites including anchorites' *ancoire*, heads of monastic schools *fer leíginn*, scribes *scribae.* The range of terms employed in the historical sources paint a picture of complex ecclesiastical settlements containing a diverse set of ecclesiastical structures which one could expect to find on an ecclesiastical site. Few of these buildings, however can be recognized in the archaeological record.

Wooden churches

Introduction

It is generally accepted that early ecclesiastical settlements from the sixth to ninth century would have been dominated by wooden churches and structures (Hamlin 1985, 286). This view is supported by more recent studies which have indicated that mortared ecclesiastical structures only became common from after the 10th century A.D. The general exceptions to this rule are a set of shrine chapels such as Temple Ciaran at Clonmacnoise and St. Declan's

at Ardmore that may have first emerged in the 8/9th centuries A.D. (Ó Carragáin 2003, 132) and dry stone built oratories frequently found in western monasteries, particularly in Kerry (White Marshall & Walsh 2005). The historical records largely corroborate the view that the first churches were generally built of wood and other organic materials. Manning (2000) has undertaken a comprehensive review of the historical evidence for church building in the Irish annals (A.D. 760-1170) and has found that the earliest references generally refer to churches described as *dairthech*, literally 'oak house'. He has argued that stone churches (*Damliac*) and churches referred to as *Tempall*, which he suggests were principally built of stone, only became more common from the tenth and particularly eleventh century onwards. The historical records also suggest that these wooden churches were complemented by structures of other organic materials in the early medieval period. Hamlin (1984, 118) has documented references to churches built of wattles, mud and clay in the Saint's lives. The construction of wooden churches was regarded as a particularly Irish trait in comparison to the stone building tradition of the Anglo-Saxon church. 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 built of split oak' (O'Keeffe 2003, 64-65). As late as the 12th century St Malachy is described in the life of St. Bernard of Clairvaux as having built and The second pushed forward in time to the twelfth century recounts how St. Malachy built a timber oratory which is described as an 'Irish work' (*ibid* 2003, 65).

Excavated Wooden Churches
There have been relatively few excavated early medieval wooden churches. Thirteen possible wooden churches are listed in Table 4:5. Complete plans are rare and the evidence for the most part comprises series of post holes. They are frequently identified as rows of post holes beneath stone churches. The only two relatively complete plans are from Church. Island, Co. Kerry, and Carnsore Point, Co. Wexford. Both are rather small structures and compare rather poorly with the great wooden church described in Cogitosus' Life of St Brigid.

The wooden church at Church Island, Co. Kerry was approximately 3 x 2m in size. It was indicated by seven postholes and was on the same alignment as the phase 1 burials (O'Kelly 1958, 58-59). Excavations at Carnsore Point revealed a an extremely small potential building, 2.25 by 1.5m in size beneath the extant stone church of St. Vogue's (O'Kelly 1975, 20-22). The possible wooden church was radiocarbon dated to A.D. 660 ± 80 (O'Kelly 1975). The small size of this structure has led Harbison to question its identification as a church. Instead, he suggested that it was a wooden tomb shrine (Harbison 1991, 150). Wallace (1982) argues that the post-holes in these putative wooden churches should not be seen as the external walls of the churches but instead as internal roof supports, as is the case in 10th/11th century wooden houses in Dublin. A further small possible 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). All these structures imply a post and wattle construction of some type. A very limited excavation of the church on White Island, Co. Fermanagh (Waterman 1959, 65-66) produced evidence for a series of 'sleeper trenches' which were 18inches deep and 7-12 inches wide, which may be from an earlier series of wooden churches. These trenches suggest a substantial plank built structure. The potential sophistication of the carpentry work in early churches can be demonstrated by the worked wood found in the waterlogged vallum at Iona (Barber 1979, 242-3). The wooden structure at Dunmisk, Co Tyrone seemed to be composite building combining slot trenches lined, with stone slabs, and post holes (Ivens 1989, 60-61). The building as truncated by burials but appears to have been about 2.5m wide and up to 7m in length. The wooden structure below the south church at Derry, Co. Down was also of composite construction (Waterman 1967, 55).

At Illaunloughan, Co. Kerry a sod-walled structure was found beneath the stone church. It comprised two parallel slot trenches containing upright slabs. It is assumed that these vertical stone rows contained the turf walls of the church (White Marshall & Walsh 2005,23-24). The structure 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 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.

Several unpublished excavation have produced evidence for possible wooden churches. Excavations by Liam de Paor at Inishcealtra, Co. Clare uncovered a possible large wooden church (8 x 5m) built using wattles and clay (Harbison 1982; Hamlin 1985, 285). The preliminary publication of excavations at Cashel, Co. Tipperary have also uncovered a potential wooden church, 4.2m E-W X 2.5-4m beneath the chancel of Cormac's Chapel which Hodkinson (1994, 173) suggested may date to the 9/10th century. Post and stake holes beneath stone churches recorded in the excavation bulletin reports at Church Island, Co. Mayo (Ryan 1993:173); Killtullagh, Co. Roscommon (Gregory 2000:0858) and Killelton, Co. Kerry (Manning 1987:24 & 1988:30) might also indicate wooden churches. A further early *potential* wooden church was excavated at a fifth century ecclesiastical foundation at Caherlehillan, Co. Kerry (Ó Carragain pers. comment).

Table 4:5 Excavated Early Medieval Wooden/Organic Built Churches 1930-2004

Site	Feature	Size	Date	Reference
Ardagh, St. Mel's, Longford	Possible Wooden Church	?	Early Medieval	de Paor; Harbison 1982, 628
Caherlehillan, Kerry	Possible Wooden Church	?	Early Medieval	O Carragain Pers. Comment
Carnsore Point, Wexford	Possible Wooden Church	2.25 by 1.5m in size (O'Kelly 1975)	A.D. 660 ± 80 charcoal sample from a post hole.	O'Kelly 1975; Lynch, A & Cahill, M 1976-77
Cashel, Tipperary	Possible Wooden Church	4.2m E-W X 2.5-4m N-S	Suggested 9-10th century date	Hodkinson 1992:064 & 1993:203 Hodkinson 1994
Church Island, Kerry	Pos. Wooden Church	Length c. 3m or little more Width c. 2m	Early Medieval	O'Kelly 1958
Church Island, Lough Carra, Mayo	Four post holes	No information	Early Medieval	Ryan 1993:173
Dunmisk, Tyrone	Possible. Wooden Church	c.3m wide (S-N) X c. 4.5-7m (E-W)	Early Medieval	Ivens 1980-84:0186; , 1988 & 1989
Illaunloughan, Kerry	Sod walled Oratory	Width 2.0m. Length longer than stone oratory (3.2m)	7-8th century	White Marshall & Walsh 2005
Iniscealtra, Clare	Possible Wooden Church	8 X 5m in size	Early Medieval	de Paor ? Harbison 1982, 628-629
Killelton, Kerry	Possible Wooden Church	?	Early Medieval	Manning 1987:24 & 1988:30
Kiltullagh, Roscommon	Pos. Wooden Church	?	Early Medieval	Gregory 2000:0858
Reask, Kerry	Pos. Wooden Church	Two post-holes 1.2m apart.	Earliest monastic phase.	Fanning 1981, 85-87
White Island, Fermanagh	Possible Wooden Church	Sleeper trenches (18 ins. Deep X 9-12 ins. Wide at base)	Early Medieval	Waterman 1959, 65-66

Pre-Romanesque Stone Churches

Pre-Romanesque Church Types
Early medieval pre-Romanesque stone churches can be broadly divided into four main categories as outlined by Harbison (1982). A large number of stone churches have been excavated which will be considered on the basis of Harbison's typology.
  1. Dry stone built Gallarus-style oratories largely restricted to western Kerry
  2. Simple Rectangular structures with roofs both made of wattle/shingles or supported by a stone roof or vaulting

3. Simple rectangular structures with the addition of antae with roofs both made of wattle/shingles or stone
4. Bicameral churches containing contemporary naves and chancels

Gallarus-style Oratory

Eight of this type, which are mostly restricted to the Dingle and Iveragh peninsulas in Co. Kerry, have been excavated between 1930-2004 (4:6). The only identified Gallarus-style oratories outside this area have been found on the two island sites of Duvillaun More and Inishglora, off the coast of Co. Mayo, and on the summit of Croagh Parick (Walsh 1994). Traditionally, it was believed that Irish ecclesiastical architecture developed typologically from the beehive hut (clocháns) through the Gallarus-style oratory to the church with upright walls and stone roof (e.g. Petrie 1845, Leask 1955). This view remained largely unquestioned till Harbison's thought provoking paper '*How old is Gallarus oratory*' (1970) who like subsequent authorities (e.g. Herity 1995; O'Keeffe 1998) argued that this style of oratory represented a regional western building expression which was not the progenitor of the development of the barrel-vaulted stone roofed church in Ireland (Type 5).

Unlike Harbison, many authorities in the past have however supported the view that the Gallarus-style oratory owed its origins to the curvilinear 'beehive' dry stone-built corbelled clochán. These 'beehive' shaped cells have typically curvilinear external plan and an either curvilinear or rectangular to square internal outline (Herity 1995, 175). Surveys of the Iveragh and Dingle peninsulas have identified that that the dry stone clochán's were an important feature of vernacular architecture on both secular (e.g. ringforts and cashels) and ecclesiastical sites on the Iveragh and Dingle peninsulas (O'Sullivan & Sheehan 1996, 135; Cuppage 1986, 99). In line with previous ideas by Petrie (1845, 132), Herity (1995, 177) and O'Keeffe (1998, 114) have suggested that the innovation of the rectilinear interior in many dry stone clochán's may be due to the influence of Christian rectilinear thought on earlier traditions.

These scholar's (e.g. Herity 1995, 176; O'Keeffe 1998, 114) have viewed the Gallarus-style oratory, with its external and internal rectilinear plan and corbelled stone roof extending up towards an east-west apex, as emerging from the clochán tradition with the square or rectilinear interiors. They have suggested that the Gallarus-style oratory, with its external and internal rectilinear plan and corbelled stone roof extending up towards an east-west apex emerged from the clochán tradition with the square or rectilinear interiors. Recently Rourke and White Marshall (2005) have further refined this typology and have examined how a desire to express rectangularity up to the apex of the structure influenced a progression from early ovoid shaped oratories (emerging from contemporary Clochán's) to the Galllarus-style oratory. In their chronology, dry stone oratories were in existence on the Iveragh Peninsula from the eighth century or even earlier, evolving through the ninth century with the final phase represented by the Gallarus oratory dating to the tenth or early eleventh centuries.

The architectural chronology advanced by White Marshall and Rourke (2005) is supported from other archaeological evidence. O'Keeffe (1998, 114) has suggested that the recurring association of Gallarus-style oratories and clochán's with early cross-slabs and leachta in west Kerry supports an early date for this form of building. The excavations have suggested a broad eighth century date for the dry stone oratory at Illaunloughan based not on direct dating evidence but associated stratigraphical burials and structures. This evidence is consistent with the idea of the oratory with its ovoid (Dome) shaped roof being one of the earliest in Rourke and White Marshall's (2005) chronology of the typological development of the dry stone oratory. The stone oratory was found to succeed a primary monastic phase of an earlier organic built rectangular church and associated settlement; a pattern which was replicated elsewhere at Church Island, Co. Kerry (O'Kelly 1958, 61-65). It has also been suggested that the oratory on the south peak of Skellig Mhichil may date to the ninth century (Horn, White Marshall & Rourke 1990, 71). It has a similar form of construction to the small oratory at Skellig Mhichil which is typologically more advanced than the Illaunloughan

example. A boat-shaped oratory, very similar in form to the Gallarus itself was excavated on the summit of Croagh Patrick in 1994 (Walsh 1994). A sample of charcoal recovered from a context within the oratory was radiocarbon dated to A.D. 430-890. The archaeological evidence then supports the notion that these type of buildings were being were being constructed no later than the 8th century A.D. They should perhaps be regarded as a local building tradition in stone which slightly pre-dated and was also probably contemporary with the earliest mortared stone churches which began to be constructed across Ireland from the 10th century A.D.

Table 4:6 Excavated Gallarus Type Oratories 1930-2004

Site	Type	Size	Reference
Church Island, Kerry	Oratory (Uncertain)	c. 5.7 X 3. 75m internally c. 8.5m X 6.5m externally Wall thickness = 1.1-1.7m.	O'Kelly 1958, 61-65
Croagh Patrick, Mayo	Oratory (Up-turned Boat)	5.57 (E-W) X 3.50 (N-S) internally 7.76m (E-W) X 5.52m (N-S) Externally	Walsh 1994:186 & 1995:224; Walsh 1994
Gallarus, Kerry	Oratory (Up-turned Boat)	4.65 X 3.14m internally 6.86 X 5.74m externally Wall thickness = 1-1.2m thick	Fanning 1970:19; Cuppage 1986, 287-89
Illaunloughan, Kerry	Oratory (Dome-shaped)	3.2m N-S X 2.2.m E-W internally Wall thickness = 1.3- 1.6m	White Marshall & Rourke 2005
Killelton, Kerry	Oratory?	4.87m E-W X 3.15-3.7m wide (west and east ends) internally	Manning 1987:24 & 1988:30; Lynch 1892, 82-83 Cuppage, J 1986, 304-05
Reask, Kerry	Oratory (Dome-shaped)	3.50m X 2.70m internally	Fanning, T 1981
Skellig Mhichil (Large Oratory), Kerry	Oratory (Dome-shaped)	3.65m X 2.45m internally 6.1m (NE-SW) X 4.25m (NW-SE) externally	Lynch 1986:32 & 1987:25 O'Sullivan, A & Sheehan, J 1996, 283.
Skellig Mhichil (Little Oratory), Kerry	Oratory (Dome-shaped)	2.45m X 1.85m internally 4.05m E-W X 3.85m N-S externally.	Lynch 1986:32 & 1987:25 O'Sullivan, A & Sheehan, J 1996, 283-284

Type 2 & 3 Single Celled Rectangular Churches

Plain unicameral mortared churches comprise type 2 & 3 of Harbison's (1982) categorisation of buildings. A detailed survey of these two types of churches has been undertaken by Ó Carragáin 2005a & B) and c.150 has identified belonging to these two groups. These buildings are generally thought to date between the tenth to twelfth centuries (Harbison 1982; O'Keeffe 1998, Manning 2000, 119). The historical evidence would support this dating (Manning 2000). Some characteristic features of many of these unadorned unicameral buildings include the presence of a plinth and large wall-stones, often described as cyclopean, in the masonry of the buildings, steeply pitched gables, flat lintelled western doorways, often with inclined jambs, evidence for the inward sloping of church walls (the batter) and very small flat-headed, lintelled, triangular or rounded windows often set in the east or south walls and again with inclined jambs (Leask 1977, 53-60). A final defining element of these buildings is the presence (Type 3) or absence (Type 2) of antae or corbel stones projecting out from the west and east gable ends.

EMAP has undertaken a very *provisional* survey of evidence for excavated Type 2 & 3 churches. It is by no means exhaustive and a number of other churches have also been identified as potentially belonging to either type. About twenty of these churches have been excavated (4:7). They are generally plain rectangular structures with doors in their western gable. As one would expect, the excavation of church interiors produced little in the way of archaeological material from their primary period of use. The interior of the church at High Island seems to have been completely paved although only a relatively small area, immediately inside the door, survived *in situ* (White Marshall and Rourke 2000, 86). There were further layer of paving beneath thin which 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 flags such as in the case at Church Island, Illaunloughan and Reask, Co. Kerry (Fanning 1981, 77; Marshall White and Walsh 2005, 44; O'Kelly 1958, 62-5). At Church Island the flags were laid down before the gable door jambs were built. The floor flags at High Island appear to have been laid in a bed of mortar (White Marshall and Rourke 2000, 90) The floor level at Illaunloghan is described as 'a formal grey-white pebbled clay/till flooring' (Marshall-White and Walsh 2005, 160) but in most cases no formal floor levels seem to have been identified.

Altars are constituent parts of a church but few have produced evidence for them. Indeed, outdoor *leachts* are more common (below). O'Sullivan and Ó Carragáin (2008, 322) suggest that it is not likely that most early medieval altars were of wood and quote a 12th century Irish synod that prohibited 'priests from celebrating Mass on a wooden table, according to the usage of Ireland'. Stone built altars have only been found in two excavated churches, High Island, Co. Galway and Carnsore, Co, Wexford (Marshall White and Rourke 2000, 83-5. The stone built alter at High Island has been plastered in the same way as the interior walls of the church. Evidence for the internal plastering of churches was also found at Saint Molua's church, Killaloe, Co. Clare and in Clonmacnoise cathedral, Co. Offaly (*ibid.* 85-6). Evidence for plastering and white washing were also found on the small building on Church Island, Lough Key, which as identified as a church shrine (King 2002:1594) Finally, Marshall White and Rourke (2000, 90-1) reviewed the evidence for the use of foundations in early medieval church building in Ireland and surmised that they were no used. In Britain there is evidence for the use of foundations from *circa* AD 1000. Sometimes, however, the bottom course of the buildings comprised of a narrow plinth made to provide a level base for the building. There are also incidences where churches were built on artificially made platforms, as was the case with St Molua's church, Co Clare (*ibid.*).

Table 4:7 Excavated Type 2 & 3 Early Medieval Churches

Site	Type	Size	Reference
Aghacross, Cork	Type ?	?	Monk 1993:014; Dunne 1997:029 Cotter 2000:0106; Monk, J et.al. 1995
Ardagh, St. Mel's, Longford	Type 3	?	Harbison 1982, 628
Ballyovey, Mayo	Type 2?	?	Morahan 1997:407
Banagher (Magheramore), Derry	Type 2?	?	Lynn 1970:10 ; Waterman, D & Hamlin, A 1976
Carnsore, St. Vogue's, Wexford	Type 2?	9.38m E-W X 4.9m N-S	O'Kelly 1975; Lynch & Cahill 1975:37
Clonfert, Galway	Type 3	?	Higgins & Cunifee 1997:App1; Walsh & Hayden 2001 2001:496; Hayden 2002:0721; O'Keeffe 2003, 268-78.
Clonmacnoise Cathedral, Offaly	Type 3	?	De Paor 1950's?
Coolbanagher, Laois	Type 2	9.7m X 6.45m- Existing Nave (Traces of Original church)	Delany 2003
Dalkey, Dublin	Type 3	?	Liversage 1967-68
Derry, South Church, Down	Type 3	16ft 3ins. X 11ft. 9ins. Internally. Walls 2ft. 6-9 ins thick	Waterman 1967
Derry, North Church?, Down	Type ?	?	Waterman 1967
Dungiven, Derry	?	?	Harper 1970:11; Bratt 1975:11; Davies, O 1939; Waterman & Hamlin 1976
Dysart, Kilkenny	Type 2	Unicameral Pre-Norman church: 8.02m x 5.35m internally	Murtagh 1989:061 & 1991:078 Murtagh, B 1994
Freshford, Kilkenny	Type 3		Murtagh 2001:686
High Island, Galway	Type 2	Interior: 3.15m N-S X 3.5m E-W	See White-Marshall & Rourke 2000, 70-124
Iniscealtra, St. Caimin's, Clare	Type 3	?	De Paor 1970:06; 1971:10; 1972:06;1973:06;1974:0009;1975:0009; 1976:10;1980-84:0043
Inisheer, St. Gobnet's Church, Galway	Type 2	?	Walsh 1980-84:0114 Mason 1938

Site	Type	Size	Reference
Kilcash, Tipperary	Type 2	?	Sweetman 1984
Killoughternane, Carlow	Type 3	?	Leask 1943
Kilteel, Kildare	Type 2	7.5m X 5.75m externally; 5.7m X 4.06-8m internally	Manning, C 1981-82 & Manning, C 1996-1997
Kiltiernan East, Galway	Type 3	Original church (Nave)= Exterior 10.5m X 6.3m. Interior= 9.2m X 4.25m	Duignan 1951; Waddell & Clyne 1995
Leigh (1), Tipperary	Type 3	20ft X 12ft internally Walls: 2ft. 6 ins. Thick	Leask & Macalister 1945-48
Leigh (2), Tipperary	Type 3		Leask & Macalister 1945-48
Mainistir Chiaráin, Oghill, Aran Islands, Galway	Type 2	11.5m (E-W) X 5.95m (N-S)	Ní Gabhlain & Moran 1996:161; Ní Gabhlain 1997:221 & 1998:259
Moone, Kildare	Type 3	9.5m X 5.6m internally	Clyne 1998:326 & 1999:407 Clyne, M 1998-99
Peakaun, Toureen, Tipperary	Type 2	?	Duignan 1944
Raholp, Down	Type 2	c. 35 ft (E-W) C 20-25 ft (N-S) (Bigger 1916)	Neill 1989:020; Bigger, 1916
Rosshill, 'Teampull Bhreandáin', Galway	Type 2	Original Church at least 5.6m (E-W) and c. 4.85m (N-S).	Clyne 1990:057 Clyne 1992
Skeam West, Cork	Type 3	3.84m (N-S) x 6.85m (E-W Maximum surviving length)	Cotter 1990:021 Cotter 1995
Skellig Mhichil, St. Michael's Church, Kerry		4.9m NE-SW X 3.8M NW-SE internally. Walls 1.2m wide.	Bourke, E 1993-2002, Exc. Bulletin; O'Sullivan, A & Sheehan, J 1996, 283
St. John's Point, Down	Type 3	c. 7-8m X 4-5m externally	Brannon, N 1980
Tighlagheany, Killeany, Galway	Type 3	5.90m by 2.90m internally	Manning, C 1985

Pre-Romanesque Bicameral Churches

Type 4 Pre-Romanesque buildings are small structures with thatched or shingled roofs and a rectangular chancel separated from the nave typically by unadorned semi-circular arches which are typically prominent in the Dublin/Glendalough region. The nave and chancel can be contemporary with each other or the latter can be a later addition providing that the construction of an unadorned non-Romanesque semi-circular arch is constructed contemporary with the chancel (O'Keeffe 2003). Examples of this church type have been recorded at Reefert and Trinity Church in Glendalough, Confey, Co. Kildare, Palmerstown and Killiney, Co. Dublin (O'Keeffe 2003). It has suggested been suggested that these buildings are likely to date to the late eleventh or early twelfth centuries based partially on architectural details (O'Keeffe 2003, 83-85) and on the negative assumption that relatively few nave and chancel churches lack Romanesque sculpture (Hare & Hamlin 1986, 322).

At least two pre-Romanesque bicameral churches have been excavated in Ireland. Excavations 300m from the Clondalkin Round Tower revealed a mortared nave and chancel church slightly off centre within an oval enclosure (Rynne 1967, 30). The remains of an altar were discovered against the inner wall of the east end of the chancel. The stone church of Peter, Waterford, was begun in the early twelfth century and was modified over several centuries. 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) Five main building phases could be ascribed to the 12th-mid 13th century as the church evolved from a small single celled rectangular building, 5.25x4m, to a complex affair comprising nave, chancel, apse, north and south aisles and a chantry chapel (*ibid. 198*).

Barrel-Vaulted Churches (Early-Mid 12th century)

Small barrel vaulted oratories surmounted by a corbelled roofs can also be discussed as a pre-Romanesque church type (Ó Carragáin 2005). These buildings can be found at Louth, Co.

Louth, St. Doulagh's, Co. Dublin, St. Kevin's, Glendalough, St. Columba's, Kells, Rahan, Co. Offaly, Donaghamore, Co. Tipperary, St. Flannan's Oratory, Killaloe and Cormac's Chapel, Cashel. The roughly triangular void between the barrel-vault and stone roof is a characteristic feature of the superstructure of these churches (See O'Keeffe 2003, 88) and could have been accessed through a trap door in the underside of the barrel-vault (e.g. St. Kevin's House and St. Columb's Church at Kells) or through a small staircase in the north-eastern corner of the church (e.g. St. Mochta's, Louth).

Recent studies suggest that the barrel-vaulted stone roof is an architectural feature of the 11/12th centuries (Radford (1970, 58; Harbison 1970, 46-47; O'Keeffe 2003). One of the largest barrel-vaulted buildings can be found at Cormac's Chapel in Cashel whose construction date has been securely dated to between 1127-34 (O'Keeffe 2003, 123-165; Stalley 2006, 162-175). There is an emerging consensus then that the churches are unlikely to be much younger or older than the barrel-vaulting at Cormac's Chapel (O'Keeffe 2003, 89). It has been suggested by Gem (2006) that St. Flannan's Oratory at Killaloe may date to around 1100. Harbison (1982, 31-33) and O'Keeffe (2003, 85-91) has also argued that St. Kevin's Church at Glendalough, St. Columba's Church at Kells and St. Mochta's church at Louth may date to a similar period.

Cormac's Chapel, Cashel, Co. Tipperary, St. Carthage's church at Rahan, Co. Offaly and possibly St. Doulagh's Church at Balgriffin, Co. Dublin have been the only partially excavated examples of this set of small barrel-vaulted structures. At Cashel, Co. Tipperary, Hodkinson (1994) identified evidence for preceding wooden and stone churches beneath Cormac's Chapel and the present Cathedral respectively, as well as extensive evidence for associated burial and other ecclesiastical structures evidence. The nave and chancel church of has been extensively and beautifully restored since the 19th century. Limited testing along the south side of St. Carthage at Rahan, Co. Offaly, exposed a number of east-west orientated skeletons but here as no evidence for earlier buildings (Cummins 2004:1424). It has also been suggested by Harbison (1982, 31-33) that the eastern part of St. Doulagh's Church, Balgriffin may represent the original single-chambered stone roofed church dating to the pre-Norman 12th century. Another final interesting example relevant to this discussion is the excavations undertaken inside the crypt of Christ Church, Dublin which revealed wall remains of an earlier structure which was partially re-used as foundations for a later pier (Simpson 1999:187 & 1999:186; Kehoe 1999:188). Stalley (2000, 65-66) has put forward the hypothesis that the late Romanesque works at Christ Church was influenced by the presence of an earlier building whose barrel-vaulted crypt could date to c.1100. O'Keeffe (2003, 101) has also added further circumstantial architectural evidence to bolster this theory.

Churches with Attached Round Towers
Finally, moving towards the mid and later 12th century, a number of barrel-vaulted churches with engaged and attached round towers have also been identified (See Lawlor 1999 for list). They include St. Mary's, Ferns, Co. Wexford, Trinity Church, Glendalough, Co. Wicklow and Kilmacnessan, Ireland's Eye, Dublin. It is possible that they may have taken their inspiration from Cormac's Chapel (1127-34) which appears to sit at the junction of the small barrel-vaulted chapels and churches dating to c. A.D. 1100 and churches with engaged round towers which became more common from the mid-later 12th century. The long demolished round tower at St Michael le Pole, Dublin is also thought to have been engaged but the evidence is equivocal. Excavation uncovered the west wall of a 12th – 14th century church and the foundation of an adjacent tower. The excavator concluded that the latter foundations "clearly indicated that the site did produce the foundations of a free standing round-tower close to the western end of the church'(Gowan 2001, 38) while there was also evidence, though "scant and tenuous' for an internal round tower (*Ibid*. 38-9).

Foundation remains of Excavated Early Medieval Churches
A growing number of excavations have uncovered evidence for the foundations or lower wall courses of earlier stone structures beneath extant early and later medieval stone churches. It

is evident that a number of these stone structures may represent the remains of early medieval churches. A list of some examples is provided in Table 4:8 below.

Table 4:8 Foundation remains of Early Medieval Churches (Type Uncertain) 1930-2004

Site	Form	Succeeded: Earlier Church	Preceded: Pre-Norman Stone Church	Preceded: Post-Norman Additions	Reference
Ardfert, Kerry	Northern Wall and plinth part of extant church	Not identified	Yes (Romanesque west door)	Yes	Moore, F 2007
Aghacross, Cork	Wall: 1.2m along the north and west walls of the present church.	?	?	Yes	Monk 1993:014; Dunne 1997:029; Cotter 2000:0106; Monk, J et.al. 1995
Ballynoe, Cork	Foundations under 13th century nave wall	No	No	Yes	Cotter 1995:023, 1996:037 & 1999:074
Cashel, Tipperary	Section of wall extending beneath Cathedral door	Yes (Wooden structure- Cormac's Chapel)	Yes (Cormac's Chapel)	Yes	Hodkinson 1994
Christ Church, Dublin	Wall remains of structure which partially re-used as foundations for a later pier	No	?	Yes	Simpson 1999:187 & 1999:186; Kehoe 1999:188
Church Island, Lough Carra, Mayo	Plinth and internal west corner beneath medieval church	Yes (Wooden)	No	Yes	Ryan 1993:173
Derry, South Church, Down	Dry-stone built structure 13ft 6ins wide.	?	Type 3 church	Yes	Waterman 1967
Donaghmoyne, Monaghan	Two linear mortar structures, 2.2m x 0.4m aligned E-W, Building not fully excavated.	?	?	?	Moore 1999:726 & 2000:0795
Downpatrick Cathedral, Down	E-W battered plinth predate south wall of medieval cathedral. Stone corner-North wall.	No	No	Yes	Delany 1974:0013 Brannon 1986:19 Brannon 1987 & 1995 Rankin 1997
High island, Galway	Phase 2: Base of E wall pre-date other walls. 11th century suggested- White Marshall & Rourke 2000.	Yes (Possible earlier church & paving)	Yes (Type 2)	Yes	Scally, G 1995-2002, Exc. Bulletin; See White-Marshall & Rourke 2000, 70-124
Skellig Mhichil, St. Michael's Church, Kerry	Base of NE end of Church wall contained a plinth incorporating part earlier structure dated to (1250±25 BP).	No	Yes (St. Michael's Church)	Yes	Bourke, E 1993-2002, Exc. Bulletin O'Sullivan, A & Sheehan, J 1996, 283

Early medieval domestic buildings within ecclesiastical sites

Introduction

Excavations are providing increasing evidence for wood and stone domestic buildings on ecclesiastical sites. Most of these comprise houses but other specialised structures have also been identified. The evidence for these is presented in Tables 4:9, 4:10 & 4:11. A significant number of other potential early medieval excavated timber buildings/structures have also been identified on ecclesiastical sites though are not described below.

Timber and sod buildings

As in the case of churches, round stone houses have sometimes replaced wooden buildings of the same shape. Evidence for this was noted at Church Island, Co. Kerry (O'Kelly 1958, 59-61) and the excavator suggested that it was contemporary with the wooden church although this could not be demonstrated archaeologically. It was assumed to be a domestic structure but the presence of iron slag indicates that it was also used for industrial purposes. The

rectangular house at the site was not preceded by a wooden structure. At Illaunloughan, Co. Kerry, the three round huts from the earlier eighth century levels were constructed of sods in the same manner as the early church on the site (Walsh and White Marshall 2005, 11-18). The huts had an internal diameter of about 3.7m and a central rectangular hearth. There was no evidence of industrial activity and it was assumed that the living quarters of the monastery's community. At Doras, Co. Tyrone, (McDowell 1987, 138-144) a round post and wattle house had an estimated diameter of 6.25m. A fireplace comprising of four flat stones was located near the centre of the house. There was no evidence for a central post. A drainage gully surrounded part of the house. Three round houses were present Kilederdadrum, Co. Tipperary with diameters of between 6 and 8.8m (Manning 1994, 245-248. House 1 was delineated by a 'circular' trench with a delineated the doorway. The trench comprised a series of straight, and the absence of postholes or a slot trench suggested to the excavator that the house was constructed in sleeper beams (*ibid.* 245). Four internal postholes in the form of a square suggest roof supports, and there was an informal central hearth. Houses 2, and its replacement House 3, had been severely disturbed by burials. Circular timber buildings have been identified on a significant number of ecclesiastical sites but in most instances there is little information about their size or means of construction. Conjoined wooden houses were also present at Caherlehillan, Co. Kerry (Sheehan 1998:268).

Table 4:9 Examples of Excavated Early Medieval Timber Buildings 1930-2004

Site	Shape	Location	Date	Reference
Ballyvourney, Cork	Rectangular Building	Ecclesiastical Site	Early Medieval	O'Kelly 1952
Caherlehillan, Kerry	Conjoined Building	Centre of enclosure	Early Medieval	Sheehan, J 1993, 94, 98, 99 & 2002, Exc. Bulletin
Church Island Lough Carra, Mayo	Rectangular building	Area of medieval church (Early Church?)	Early Medieval	Ryan 1993:173
Church Island, Valencia, Kerry	Circular Building	East of oratory. Associated with iron smelting	Early Medieval Phase 1	O'Kelly, 1958, 59-61
Clonfert, Galway	Buildings	Field to east of church in vicinity of possible outer ecclesiastical enclosure.	Early Medieval	Walsh & Hayden 2001:496
Clonmacnoise, Offaly	Circular Buildings	Associated with metalworking. Steeple Garden to the west of the graveyard (Location of Visitor Centre)	Early Medieval	Manning 1989:078 & 1990:096
Clonmacnoise, Offaly	Circular and Buildings	Associated with metal and other craft working. New Graveyard	Early Medieval	King, H 1990-98, Exc. Bulletin
Clonmacnoise , Offaly	Rectangular Buildings	New Graveyard	Early Medieval	King, H 1990-98, Exc. Bulletin
Derry Ioran, Tyrone	Circular Building	Western perimeter of site in vicinity of possible early medieval enclosure ditches.	Likely	MacManus 2003:1843
Doras (Tullyniskan), Tyrone	Circular Building	Southwest of extant church immediately inside excavated possible enclosure ditch.	Early Medieval	McDowell 1987
Downpatrick, Down	Circular Building	Southwest slopes of Cathedral Hill	Early Medieval	Brannon 1987:12 & 1988
Dunmisk, Tyrone	Circular Building	Southwest Quadrant; Metalworking area	Early Medieval	Ivens 1980-84:0186; , 1988 & 1989
Dunmisk, Tyrone	Circular Building	Southwest Quadrant; Metalworking area	Early Medieval	Ivens 1980-84:0186; , 1988 & 1989
Dysart, Kilkenny	Circular Building	Associated iron slag: Southwest of Church	Likely	Murtagh, B 1989:061 & 1991:078 Murtagh, B 1994
Kilpatrick, Corbetstown, Westmeath	Circular Building	Southern area of enclosure; Fragments of antler and metalworking associated with building.	Early Medieval	Swan 1975:36 Swan 1976

Site	Shape	Location	Date	Reference
Illaunloughan, Kerry	Conjoined Sod-walled Building (A & B)	Built up against western wall of monastery (Huts A & B)	7-8th century	White Marshall & Walsh 2005
Illaunloughan, Kerry	Circular Sod-walled Building (Hut C)	South-western side of monastery	7-8th century	White Marshall & Walsh 2005
Iniscealtra, Clare	Buildings	Ecclesiastical Site	Early Medieval	De Paor 1970:06; 1971:10; 1972:06;1973:06;1974:0009;1975:0009;1976:10;1980-84:0043
Inishkea North, Mayo	2 Post and Wattle Buildings	Sand Dunnes	Early Medieval	Henry 1945 & 1951
Lackenavorna, Killederdadrum, Tipperary	Circular Building (1)	Western side of enclosure	Early Medieval	Manning, C 1984
Lackenavorna, Killederdadrum, Tipperary	Circular Building (2)	North side of enclosure.	Early Medieval	Manning, C 1984
Lackenavorna, Killederdadrum, Tipperary	Circular Building (3)	North side of enclosure	Early Medieval	Manning, C 1984
Reask, Kerry	Circular Building	Centre of enclosure	Phase 1: Early Medieval	Fanning 1981

Early medieval dry stone cells

Introduction

Dry stone curvilinear houses 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 & Sheehan 1996, 135). These sub-circular dry stone structures 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 (Beehive Clochán tradition) or whether they consisted of low battered corbelled walls with a roof of turf or thatch. There has been some debate as to the origins of the early medieval Beehive Clochán. Traditionally, it has been believed that this form of dry stone construction emerged from an indigenous prehistoric dry stone tradition (Leask 1955). This view is no longer supported as excavations at a number of ecclesiastical sites including Illaunloughan, Church Island, Reask and the Cashel at Loher have demonstrated that organic buildings were built during the earliest phase of the settlement before giving way to circular dry stone cells (Ó Carragáin 2003, 24 & 43, Note 26). Indirect support for this view comes from the understanding that no dry stone structures were found at the ecclesiastical site of Caherlehillan which significantly fell out of use by the 7th century A.D. (Ó Carragáin 2003, 43 Note 26).

Excavated Cells 1930-2004

The excavated examples are listed in Table 4:10. Dating is problematic but a sample from immediately under the wall of a cell at Illaunloughan, Co. Kerry produced a 2 sigma calibrated date of AD 775-961 (White Marshall & Walsh 2005, 42). Other dating for occupation of the site implies that the house is unlikely to be later than the early ninth century. The masonry style of the Illanouloughan cell was comparable to that on several of the Skellig Michael examples though found closest similarity to the excavated cell in the Monks garden below the main settlement at Skellig Michael (See White Marshall & Walsh 2005, 38). Mortar was used to set the paving slabs on the floor of Cell A and B on High Island, Co. Galway. It was also used with the paving in the church which the excavators suggested was built sometime between the 9th and 11th centuries burials (See White Marshall & Rourke 2000, 121). Given the unusual use of mortar in the flooring it is likely that the church and the stone cells are of the same date.

None of the excavated corbelled cells have provided evidence for internal partitioning, as have been noted in some round houses on secular sites. The only internal feature in the Illaunloughan stone house (D) comprised an informal off-centre fireplace (White Marshall & Walsh 2005, 148). Much of the interior had been disturbed by the digging of a later period. The interior of the Church Island, Co. Kerry, round stone house (4.5m diameter) contained one of the most intact floors of any early medieval house. The floor as sealed by charred straw which the excavator interpreted as representing collapsed burnt thatch (O'Kelly 1958, 68). Twelve post-holes along the inside of the wall are likely to have contained roof supports, with the two immediately at the sides of the door opening could have acted as frames for a door. O'Kelly (1958, 123) suggested that the post holes supported elbow crucks or a variation of same. The whole floor was essentially a trampled midden comprising for the most part of shells, animal and fish bones interspersed with burnt grain. The hearth comprised an oval spread of peat ash, located off-centre towards the door. A slightly curved rectangular arrangement of postholes, 2x1m in size, was located against the wall opposite the door. This, O'Kelly interpreted as being the supports of 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). Fanning (1981, 88) interpreted the late insertion of a similar drain into the conjoined houses at Reask and being evidence for their use as byres. It is unlikely, however, that the Church Island cell was a byre house and it is likely that the drain was for human use, thus ensuring that the dwellers did not have to go out outside to relive themselves, particularly during winter. The exposed location of house may have necessitated such an innovation. Such sanitary arrangements have not been noted elsewhere in Ireland. It is likely to be 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. O'Kelly noted that the walls of the Church Island round house were not weatherproof and suggested that it had originally been insulated by a layer of sods on its exterior wall. He suggested that the stonework *annulus* that surrounded the house could have supported this *(ibid* 70-1*).*

The round stone houses are Reask were also devoid of internal partitioning. Houses A and B were conjoined having single entrance in House B with a formally paved entrance (Fannning 1981, 87-92). House B contained a large informal hearth with post-holes at either end, possibly for supporting a spit. There was no fireplace in House B and it is likely to have functioned as sleeping quarters. As in the case of church Island, Houses A and B were surrounded by a stone *annulus* which could have supported a turf windbreak. The two conjoined round houses C and D were smaller than A and B with diameter of 4.6m as opposed to 6m for the individual houses. They also differed in that there was no surrounding *annunus* and the fireplace, actually a fire-pit, was in the inner house rather than in the house with the door. Excavations of the corbelled houses at High Island, Co. Galway revealed stone lined hearths with associated midden material (Scally 1997:210; 1998:256). The houses had paved floors which appeared to be set in mortar (White Marshall and Rourke 2000, 90). Recently the excavation of a partially destroyed dry-stone round house was excavated at Trahanareear on Inishmurray, Co. Sligo (O'Sullivan & Ó Carragáin 2008, 216-39 & 320-21) but unfortunately no archaeological deposits were present in its interior. The excavation found that it had preceded a leacht which may have been built sometime between the 9th-11th centuries (O'Sullivan & Ó Carragáin 2008, 216-39 & 320-21). It was not possible to establish if the walls of this dry stone structure were raised in corbelled courses in the beehive clochán fashion or whether it consisted of low stone walls with a roof of turf or thatch though the excavators did favour the latter option because of the relatively thin surviving walls.

Table 4:10 Examples of Excavated Early Medieval Dry stone Cells 1930-2004

Site	County	Feature	Date	Reference
Ballyvourney	Cork	Circular Stone Building	Early Medieval	O'Kelly 1952
Church Island	Kerry	Circular Stone Cell Diameter = 4.5m	Monastic Phase 2	O'Kelly 1957-59
High Island	Galway	Large Cell (B) 2.63m E-W X 2.74m N-S internally	Early Medieval	Scally, G 1995-2002, Exc. Bulletin
High Island	Galway	Little Cell (A) 2.1m E-W X 1.9m N-S internally	Early Medieval	Scally, G 1995-2002, Exc. Bulletin
Illaunloughan	Kerry	D= 4.3m-4.4m	8/early 9th century	White Marshall & Walsh 2005
Iniscealtra	Clare	Cell	?	De Paor 1970:06; 1971:10; 1972:06;1973:06;1974:0009;1975:0009;1976:10;1980-84:0043
Inishkea North	Mayo	Dry stone Conjoined Beehive structure	Early Medieval	Henry 1945 & 1951
Inishmurray, Trahanareear	Sligo	Sub-circular Cell D= 1.8m Wall thickness = 0.8m	Early Medieval Phase 1	O'Sullivan & Ó Carragáin 2008, 218-19
Reask	Kerry	Conjoined Cell A & B) A: int. D= 5.5m. B: int. D= 6.1m. Wall thickness 1.2-1.3m	Monastic Phase 2	Fanning 1981, 88-92
Reask	Kerry	Conjoined Cell (C & D) C: Internal D= 3.6m (E-W) & 4m (N-S). D: Internal D= 4.5m . Wall thickness c 1.10	Monastic Phase 2	Fanning 1981, 92-94
Reask	Kerry	Cell (E) Internally 5.5m X 2.8m Wall thickness varies from 1.25-1.6m	Monastic Phase 2	Fanning 1981, 94-96
Reask	Kerry	Cell (F) Internal D= 3.5m Wall thickness= 90cm	One of the earliest clochans	Fanning 1981, 96
Reask	Kerry	Cell (G) Internal D= 2.75m Wall thickness .80-1m	One of the earliest clochans	Fanning 1981, 97-98
Skellig Michael	Kerry	Cell (Main Terrace)	Early Medieval	Bourke, E 1994, Exc. Bulletin

Early medieval rectangular stone houses

Rectangular domestic buildings have been found on a number of ecclesiastical sites (See Table 4:11). These tended to be differentiated from churches by the presence of hearths and other domestic or industrial activity. The poorly recorded rectangular house at Nendrum, Co. Down, internally 9x4m, was identified as a 'school' by its excavator on the basis of the presence of styli and slate motif pieces. McErlean and Crothers (2007, 376-7), however, suspect that the building is of later medieval date and that the artefacts are from occupation layers predating its construction. The rectangular stone house at Church Island was built on top of the rubbish midden discarded from the stone round house. The house, which measured 5.5x3.5m internally, had two opposing doors in the gables ends, similar to the arrangement in the wooden houses in Fishamble Street, Dublin. Like the round-house, it too had an internal drain that may have been for sanitary purposes but O'Kelly (1958, 74-5) believed that it was constructed for the collection of water. The drain entered the house under the south-western wall, presumably collecting water from the higher area outside, and exited by the south-eastern door. It seems to have functioned as a reredorter drain. 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. Marshall White and Rourke (2001, 51) suggest that it is a guest house on the basis of the early documentary evidence which indicates that the monastic guesthouse was sometimes located outside the monastic enclosure.

At Reask, a rectangular house, with an internal dimension of 5.5x2.8m, was built into the enclosure wall (Fanning 1981, 94-5). An off-centre hearth was located opposite the single door, which opened from the long axis of the building. Three rectangular houses were present at Kiltieran, Co. Galway (Waddell and Clyne 1995, 162-174) but unfortunately their date could not be clearly ascertained as early medieval and much later finds were often found in the same layers. House I, as at Reask, was attached to the enclosure wall but the others were freestanding. House three was the largest with internal dimensions of 15.9x4.27m. This is much larger than any known house from Early Medieval Ireland (Lynn 1994, 91). Finally, excavations in the New Graveyard, Clonmacnoise have yielded evidence for a rectangular structure (King 1993:187). It appears to have been contemporary with an adjacent round house and was built using roughly coursed limestone boulders measuring on average 0.3m in diameter and standing to a maximum height of five courses. Both were surrounded by a gravelled yard with a wooden gate, walls and a large hearth and were assigned a rough 8-10th century date (King 1996:324).

Table 4:11 Examples of Excavated Early Medieval Stone Buildings 1930-2004

Site	Shape	Location	Date	Reference
Church Island, Kerry	Rectangular (External Rounded Corners)	Northeast of island	Early Medieval	O'Kelly 1957-59, 73-75
Clonmacnoise, Offaly	Stone Buildings (New Graveyard	New Graveyard	Early Medieval	King, H 1990-98, Exc. Bulletin
Inishkea North, Mayo	Stone Buildings	Sand Dunnes	Early Medieval	Henry 1945 & 1951
Kiltiernan East, Galway	Rectangular (I) (External Rounded Corners)	Southeast corner of the site	Early Medieval	Duignan 1951; Waddell & Clyne 1995
Kiltiernan East, Galway	Rectangular (II). (External Rounded Corners)	Southeast corner of the site)	Possible Early Medieval	Duignan 1951; Waddell & Clyne 1995
Kiltiernan East, Galway	Rectangular (III) (External Rounded Corners)	Southeast corner of the site)	Early Medieval	Duignan 1951; Waddell & Clyne 1995
Mainistir Chiaráin, Oghil, Galway	Stone Building (B)	(Abutting south wall of church.	Possible Early Medieval	Ní Ghabhláin 1996:161 & 1998:259
Reask, Kerry	Rectangular Stone Building	Built into enclosure wall	Possible Early Medieval	Fanning 1981

Conclusion

Our knowledge of monastic dwelling houses is unfortunately then biased towards small foundations along the Atlantic seaboard. The impression provided by the evidence that they these monastic cells provided accommodation for a small number of occupants. White Marshall and Walsh (2005, 16) estimated that the two conjoined huts at Illaunloughan would have housed five or six occupants. 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. McDonald (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.

Early medieval monuments: Round Towers

Introduction

The round towers of Ireland have been the subject of two recent monographs (Lawlor 1999; O'Keeffe 2004). Lawlor's work provides a good corpus of the extant surviving and lost round

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towers, with a particular emphasis constructional features of the monuments, reflecting the author's profession as an architect. O'Keeffe's work is more discursive and contains much interesting speculation on the function of the towers. Stalley (2001) has also discussed the function and possible architectural tem-plates for these monuments. The most comprehensive descriptions of the individual towers is still to be found in Barrows (1978) monograph one round towers. There have been at least 6 excavations of round towers in the period under consideration for the present report (4:12).

Table 4:12 Excavated Round Towers 1930-2004

Site	County	Foundation	Burials	Reference
Ardmore	Waterford	Single course plinth resting on footing of uncut sandstone slabs over a deposit of stony clay.	Possible earlier burials (	Lynch 1996:385
Devenish	Fermanagh	'Solid circular mass of stones'	No evidence	Waterman 1973-74
Iniscealtra	Clare	'Shallow foundations'	?	Barrow, L 1979, 61 & 62
Leigh	Tipperary	Built on substantial circular foundation of rough limestone boulders 2.6m deep	Erected over earlier Burials	Glasscock 1970; Glasscock 1971; Glasscock 1970:30
Roscrea	Tipperary	Single layer of footing stones projecting from underneath the tower	Not documented	Lynch 1996:385
Tullaherin	Kilkenny	Internal test-pit revealed no evidence for internal wall footings though 3 clay floor levels were uncovered.	No evidence	Hayden 2004:0930

Excavated Round Towers: Evidence for Foundations

Barrow (1979, 23) has argued that many round towers would have been built on top of substantial foundations filled with rubble cores. Lawlor (1999, 75) too 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'. At Leigh, Co. Tipperary the circular foundation of rough limestone boulders was found to be 2.5m deep 'the bottom stones set deep down into the natural boulder clay' (Glasscock 1070:30). 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, 100-2) revealed that the foundation 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 25cm into the old ground surface. This might explain why the tower failed and needed to be replaced. Waterman exposed and 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 something in between. The tower had a single course plinth of which sat on a 'footing of uncut sandstone slabs' which has a depth of 0.5-.07m (Lynch 1996:385). Lynch also noted that that shallow foundations have been recorded at other towers, e.g. 0.6 at Kilmacduagh and 0.9m at Kilkenny. The excavator concluded of Ardmore that 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. However, Barrow's (1979, 25) photographs of the Leigh foundation indicate that they comprised a thick rough circular ring of stones with a circular hollow area in the middle.

Several round towers including Ardmore, Cloyne, Roscrea, Cashel, Drumbo, Clones, Devenish, Armoy, Drumlahan, Inniskeen, Tory Island and Timahoe were excavated in the 19th century by antiquarians who sought to establish if the basement of round towers were used for sepulchral purposes. Barrow (1978) quotes the findings of these early investigations in his gazetteer of the individual sites and unsurprisingly most provided evidence for burials that predated the construction of the towers.

Early medieval monuments: High Crosses

Excavated High Crosses 1930-2004

Excavations of at least 13 high cross foundations have been undertaken between 1930-2004 (4:13). Most of these excavations have taken place in recent times as part of conservation work on the monuments. The base of the cross at Ballymore Eustace, Co. Kildare, was found to lie on disturbed natural soil and the excavator surmised that the cross was in its original position (King 2004). The base proved to be of the truncated pyramidal shape favoured in early medieval Ireland. The bottom of the base was unworked and its uneven base was in places propped up by small stones to level it. It can be assumed that the unworked part, approximately half its height, was originally buried. Removal of three high crosses to the new visitors centre at Clonmacnoise, Co. Offaly afforded the opportunity to excavate the bases. The South Cross was found to lie on top of some early medieval cross slabs (King 1992, 23) as well as a fragment of post-medieval slab. This would imply that the cross was in a secondary position but the excavator noted that the evidence suggested that the broken slabs 'had been placed beneath the cross slabs in relatively'. Removal of the stone cross-base revealed a pit some 0.6m wide and 0.85m deep which King (1994:196) suggests may be the base of a wooden cross. A similarly positioned pit, some 1.4m in depth was found under the cross of the Scriptures (*ibid.*). The base uncovered under the Northern Cross at Clonmacnoise differed from the usual type. The stone seemed to comprise a re-worked millstone and Manning (2002, 8-9) suggests that it originally may have had a composite base similar to St John's cross Iona. Burials were found either under, or in the immediate, vicinity of the three crosses at the site.

There have been conflicting views about whether or not the Market Cross at Kells was in its original position, an argument that was particularly enlivened by the fact that the cross was located at a considerable distance from the monastic core. Swan (1998) argued the cross was a 'Termon' cross located at the monastic gateway of the outer enclosure of the monastery. Historians, such as Doherty (1980, 83; 1995, 60), Simms and Simms (1990, 1-2) and Swift (1998, 116-7) tended to agree with this hypothesis. Bradley (1985, 440) suggested that the cross might have been moved to this position during the seventeenth century and more recent cartographic and illustrative evidence suggests that the cross have moved a few times in more recent times (King 2004, 240). The recent removal of the cross to a safer location allowed the modern plinth to be removed. Unfortunately the plinth, erected in 1893, had 'dug to a depth of *c.* 1m into subsoil thereby removing and previous occupation material that might have existed and a result the excavations did 'not, unfortunately. Shed any additional light on the on the site on the siting of the cross (King 2004, 238). The high cross at Cashel was also set in a large plinth which its excavator believed was constructed after the 13th/14th century (Lynch 1983, 15-16).

Table 4:13 Excavated Early Medieval High Crosses 1930-2004

Site	County	Original Context	Reference
Boho, Toneel North	Fermanagh	No (1832)	Donnelly, Murphy & Macdonald, 2002:0700; Donnelly, MacDonald, Murphy & Beer 2005
Ballymore Eustace	Kildare	Likely (South of Cathedral)	King, 1999:357; King 2004
Cashel, St. Patrick's Rock	Tipperary	No	Lynch, A 1983
Clonmacnoise (North Cross)	Offaly	No (17/18th century)	Manning 1990:096; Manning 1992; King 1993:186
Clonmacnoise (South Cross)	Offaly	Yes (South of Cathedral)	King 1992; King 1994:196
Clonmacnoise (West) -Cross of Scriptures	Offaly	Yes (West of Cathedral)	King 1992; King 1994:196
Glendalough, St. Kevin's Cross	Wicklow	Possible (Southwest of Cathedral)	Lynch 1989:101
Kells, Market Cross	Meath	Uncertain (Market Cross- Outer enclosure to east)	King 1997:423; Swan, L 1998
Kilfenora (Dorrty Cross)	Clare	Uncertain (Graveyard)	Rogers 2004:0166
Labbamolaga Middle	Cork	No	Cleary 1995:035
Moone	Kildare	Uncertain (South of Church)	Clyne 1998:326 & 1999:406; Clyne 1998-99
Peakaun, Toureen (East Cross)	Tipperary	Possible (Graveyard)	Duignan 1944
Roscrea	Tipperary	Likely (South of Cathedral)	Manning 1997:555
St. Stephen's Leper Hospital	Dublin	No (High Cross Find)	Buckley & Hayden 2002
Tighlagheany, Aran Islands	Galway	No (High Cross Find)	Manning, C 1985, 96-120

Early medieval monuments: the archaeology of pilgrimage

The Archaeology of pilgrimage has received detailed attention by a number of scholars, particularly in recent years (e.g. Harbison 1991; Herity 1995; Ó Carragáin 2003; O'Sullivan & Ó Carragáin 2008). A range of architectural features including various forms of tomb-shrines, shrine chapels and leachta have been investigated in recent years shedding new light on the character of pilgrimage in early medieval Ireland.

Tomb-Shrines

Introduction

The tomb-shrine of the founder saint was an important focus of ritual at early church sites (Thomas 1971, 132-166). Several recent works have emphasised their role in pilgrimage in Ireland during the early medieval period (Harbison 1991; Herity 1995; O'Keeffe 1998; Ó Carragáin 2003). It has been suggested that these tomb-shrines operated as *memoria* or *martyria* containing the corporeal remains of the founder saint (O'Keeffe 1998, 116). There has been a tendency to suppose that these shrines were an essential component of early monasteries and Swan (1983, 274) includes them as among his criteria for identifying an ecclesiastical site. As a result of this, excavators have sometimes applied the term 'shrine' to features which are of questionable function.

Slab-Shrines
One example is a small paved structure associated with two small pillar stones at Reask, Co. Kerry which has been identified as a 'slab-shrine (Fanning 1981, 84-5) of the type discussed by Thomas (1971, 142). It was found at the same level as the lintel cemetery and in a context below the oratory and its associated paved entrance. Had it not been found in proximity with early burials, it is extremely unlikely, however, that this structure would have been considered as a shrine.

Box or Corner Post Tomb Shrines
A more elaborate type of box structure with corner posts which can be confidently described as a tomb shrine has been identified by Herity (1993, 191). These small structures are typically decorated all over the outer surface and are constructed with stone slabs whose edges are placed inside grooves of the corner-post pillars. Previous studies (e.g. Henry 1957) have described a number of these structures in the Kerry region. Though there are no surviving examples, Herity (1993, 191) has proposed that the size and shape of a number of decorated slabs at High Island, Co. Galway, Carrowntemple, Co. Sligo, Tullylease, Co. Cork, Iniscealtra, Co. Clare and Toureen Peakaun, Co. Tipperary (Waddell & Holland 1990) fits neatly with their role as side and end slabs of small box shrines. Potential corner-posts for these ornamented box shrines have been recorded by Herity (1993, 191) at a number of other sites including Kilnaruane, Co. Cork, Kildrenagh on Valencia Island, Co. Kerry (Henry 1957, 88-90) and possibly Killeen Cormac, Co. Kildare (Macalister & Praeger 1928-29, 254-55). Similar evidence for small corner-post shrines has also been recorded by Thomas (1971, 150-59) at a number of Scottish sites including Iona and St. Ninian's Isle who has dated these monuments to the 8th and 9th centuries A.D.

Excavations exposed a possible corner post shrine inside a natural hollow in the southeast corner of Church Island (O'Kelly 1957-59, 87-90; Henry 1957). Ó Carragáin (2003, 144) believes that this is a corner-post type shrine although O'Kelly believed that its grooved corner stones were later additions. Excavations failed to establish whether the shrine marked a special grave or a number of burials due both to the heavily disturbed nature of the monument and the acidic nature of the surrounding soils. Another possible corner post shrine contemporary with a wooden church, has also been excavated by John Sheehan (forthcoming) in the northeast corner of the ecclesiastical enclosure at Caherlehillan, Co. Kerry. It had been covered by a mounded deposit of quartz pebbles and appears to have represented the last addition to a site which went out of use in the 8th century A.D. Excavations at Caherlehillan identified that the corner post shrine was built over 'a graves whose lintels exhibited wear-patterns consistent with devotional pilgrimage activity (Ó Carragáin 2003a, 134; See Sheehan forthcoming). The cist-like burial beneath the shrine was one of the two earliest graves within the cemetery and was found associated with 7th century E-ware pottery (Laing 2006, 230).

Gable Shaped Tomb Shrines
A-roofed or gable shaped tomb-shrines have been recorded in number of sites of such Killabuonia, Kilreelig and Killoluaig, Co. Kerry (Henry 1957, 96-112), St. Chrónáin's Bed, Teampall Chrónáin, Co. Clare and Kilcholan on Inishmore, Aran Islands (Harbison 1991, 151-154). Westropp (1901, 405) believed he had found part of a gable-shaped or A-roofed shrine at Slane, Co. Meath which, if correct, might indicate that this type of shrine had a wider island-wide distribution (White Marshall & Walsh 2005, 56). Many of these gable-shaped shrines like Killoluaig, Illaunloughan and Killabuonia in the Iveragh Peninsula in Co. Kerry were found situated on raised areas or low mounds demarcated by vertical-set stones (White Marshall & Walsh 2005, 56-58). The actual complexity and monumentality of these shrines in their original form has recently been strikingly revealed at Illaunloughan, Co. Kerry (Marshall White 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. Two stone cists were present within the gabled chamber. 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. Radiocarbon dates the burials to between seventh – eighth centuries.

Shrine Chapels

A group of small mortared rectangular unicameral buildings, often containing deep antae and a western doorway, are present on a number of important ecclesiastical sites across the country. A number of examples belonging to this group of buildings include St. Diarmuid's, Inishcleraun, Co. Longford, St. Columba's Shrine, Iona, Tech Molaise, Inishmurray, Co. Sligo, Temple Ciaráin, Clonmacnoise, Co. Offaly, St. Declan's, Ardmore, Co. Waterford, Labbamolaga, Co. Cork and potentially the lower part of St. Columba's House, Kells, Co. Meath (Ó Carragáin 2003, 131; O'Keeffe 1998). Hagiographical, archaeological and folkloric evidence has long suggested that these small churches were regarded as saint's burial shrines (Ó Carragáin 2003, 130-76; Harbison 1991, 147-51, Herity 1993, 190-91, O'Keeffe 1998, 116). Ó Carragáin's (2003, 134) 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 were built over the original founder's grave-site.

Ó Carragáin (2003, 130 & 165 Notes 11 & 12) has suggested that these buildings should be described as 'shrine chapel' 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". Documentary references and radiocarbon dates have suggested that these mortar built shrine chapels may date from as early as the eighth and ninth centuries (Harbison 1991, 151, O'Keeffe 1998, 116; Berger 1992 & 1995; Ó Carragáin 2003, 131-33 & 165 Notes 13-16) and therefore pre-date mortared stone churches. It should be noted, as noted above, that the radiocarbon dates derived from the mortar samples are suspect. The characteristically deep dimensions of the antae in proportion to the size of these buildings can also be used as a pointer to indicate an early date (Manning 1998, 76; Ó Carragáin 2003, 133 & 2005 a, 139). A chapel shrine on island of Inchmacnerin, Lough Key, Co. Roscommon was recently excavated by King (2000:0860;2002:1594; 2007). The building was located to the north of the main church and measured 4.7m east-west by 2.5m north-south externally. Two human burials contained within partly stone-lined graves were discovered in the interior of the structure. These provided radiocarbon dates at two sigma A.D. 1021-1216 and A.D. 1034-1229. 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).

Excavated *Leachta* 1930-2004

Introduction

Leacht's are open air altar-like dry-stone constructions which are commonly found on a number of western monasteries including Inishmurray, Co. Sligo (O'Sullivan and Ó Carragáin 2008) Illauntannig, Illaunloughan and Skellig Michael, Co. Kerry (Cuppage 1986, 295; Marshall White and Walsh 2005, 46-51; Horn et al 1989, 42-5) and High Island (Marshall and Rourke 2000, 36-7). Recent excavation of leachts on Illaunloughan and Inishmurray have resulted in re-appraisals of the monument type. The ethnology of the term 'leacht' implies as association with burial and can be translated as a 'memorial or monument', a 'heap or mound', a 'memorial cairn' or a 'grave' or 'grave mound' (White Marshall & Walsh 2005, 49). Thomas (1971, 168-72) has argued that it derives from the words *Lectus* in Latin and *lecht* in Old Irish, both of which mean 'bed' in the early medieval sense of a 'grave'. They are often assumed to be 'open air alters' but Hunwicke (2006, 49) has noted that 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 are 'not constructed so that Mass could be celebrated facing east'. O'Sullivan and Ó Carragáin (2008, 321) note that of the sixty five known leachts in peninsular Kerry only two are likely to have functioned as altars.

Excavated Leachta 1930-2004
A small number of leachta have been excavated (Table 4:14)). Both Inishmurray, Co. Sligo and Omey, Co. Galway provided evidence that leachts were rebuilt and renewed over time. At Omey the original dry-stoned leacht was replaced by a mortared form "probably in the late middle ages" (O'Keefe 1992, 5). The excavated leachts, however, have failed to produce conclusive dating evidence. A glass vessel from the base of the core of a leacht at Trahanareear, Inishmurray, could possibly be of Roman date but the excavators concluded that it was more likely to be modern (O'Sullivan and Ó Carragáin 2008, 233). The excavations at the large oratory on Skellig Michael and at Illaunloughan have also both demonstrated that these buildings were structurally integrated into early medieval *leachta* (White Marshall & Walsh 2005, 48-49). Similarly, excavation on the Little Oratory Terrace on Skellig Michael identified a possible rectangular dry stone-built leacht which was coeval with the surrounding paving, revetment walls and oratory (Lynch 1987:25). The leacht at Illaunloughan was contemporary with the monastery as its construction 'predates the stone oratory but possibly not by a significant period' (Marshall White and Walsh 2005, 156). Some of the excavated leachts 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 (*ibid*. 156-7) so a direct association is improbable. It has however been suggested by White Marshall & Walsh (2005, 53) that the *leacht* at Illaunloughan may have been used as an open-air altar with a potential liturgical purpose which marked 'the place of the earliest oratory and honoured the earliest monks buried around the oratory'.

The two leachts in Relickoran, Inishmurray were also built over burials which provided calibrated 2 sigma dates of AD 711-982 and AD 893-1148 (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 small 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 the leacht was intentionally located to mark these burials. O'Keefe (2004, 16) states that the leacht on Omey 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 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 alter' mounted on a single wooden prop. Thomas (1971, 176-178) argues for the presence of this type of altar in Ireland at the time. The implication, therefore, is that the stone *leacht* would also have functioned as an altar. O'Sullivan and Ó Carragáin (2008, 319-23) conclude that the leachts on Inishmurray were most likely to have been altars and that 'a plurality of altars with different dedications was regarded as a basic requirement for important ecclesiastical establishments' (*ibid*. 323). They would have been used regularly by the resident clerics but also as part of the liturgy of pilgrimage which they argue was an important component of religious life during the early medieval period (*ibid* 318-9).

Table 4:14 Excavated Early Medieval Leachta 1930-2004

Site	Context	Size and associated Features	Date	Reference
High Island, Galway	Cashel (East side)	Leacht outside Cell B entrance	Uncertain	Scally, G 1995-2002, Exc. Bulletin; White Marshall & Rourke 2000
Illaunloughan, Kerry	Cashel (North side)	Leacht (North side of Dry stone oratory)	8th/early 9th century	White Marshall & Walsh 2005
Inishmurray, Sligo	Laghta Patrick	Herity (1995, 115) = rectilinear dry stone leacht c. 1.92m X 2.3m with no cross-slab	9-12th century	O'Sullivan 1999:792; O'Sullivan & Ó Carragáin 2008, 239-43
Inishmurray, Sligo	Ollamurray	Original Leacht= 1.8m E-W X 1.4m N-S. 0.4M high	9-12th century	O'Sullivan, 2000:0887; O'Sullivan & Ó Carragáin 2008, 298-313.
Inishmurray, Sligo	Relickoran	Two Leachta inside conjoined enclosures. Rectilinear Leacht inside main enclosure= 1.9m N-S X 1.8m E-W. Small leacht = 0.8m high X 1.9m E-W and 1.2m N-S (remnant)	9-12th century	O'Sullivan 1999:793 & 2000:0888; O'Sullivan & Ó Carragáin 2008, 251-98
Inishmurray, Sligo	Trahanareear	Leacht (0.7m high X 1.9m in max. length). inside small enclosure abuts earlier cell	9-12th century.	O'Sullivan 1997:468; O'Sullivan & Ó Carragáin 2008, 216-39
Omey, Galway	Rectangular Enclosure	Leacht inside small enclosure	Early and Late Medieval	O'Keeffe 1992:092 & 1993:111
Skellig Michael, Kerry	Large Oratory Terrace	Leacht (Structurally associated with oratory)	Early Medieval	Bourke 2001:574; White Marshall & Walsh 2005, 48-49
Skellig Michael, Kerry	Little Oratory Terrace	Rectangular Leacht (l.65m x 0.85m x 0.75m high) Structurally associated with Oratory	Early Medieval	Lynch 1987:25

The Organisation and Layout of Early Medieval Ecclesiastical Sites

Introduction

There has also been much discussion about whether and if yes, when, did early medieval ecclesiastical sites begin to take on a standard plan. The extant stone remains at western monasteries offer a unique glimpse into the layout and organisation of early medieval monasteries. Michael Herity has dealt in detail with this question in a collection of articles about western monastic sites published together in 1995. He has noted that the church or oratory and the founder tomb or cross-slab were undoubtedly the focal points of these western monasteries (Herity 1995, 15) with domestic huts often situated in marginal places along the edge of the enclosure at Illaunloughan (White Marshall & Walsh 2005), Reask (Fanning 1981), High Island (White Marshall & Rourke 2000) and Kiltiernan, Co. Galway (Waddell & Clyne 1995). These focal ecclesiastical structures were however primarily situated towards the eastern sides of the monastic enclosure (Herity 1984; White Marshall & Rourke 2005, 128). Herity (1995) has suggested that the drystone domestic clochán's were often placed on the side furthest from the church, often facing across to it from an open space called the *platea*. This open space (*platea)* was located at the west façade of the oratory or principal church and may have been used as a place of congregation or point of crossing where monks traveled from their sleeping quarters to the church buildings. This layout in

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which the church or oratory is located in the east and is separated to the domestic huts to the west by an open *platea* can be found at Inishmurray, Loher (Kildreenagh), Reask (Herity 1984, 109), Kilreelig, Co. Kerry (Herity 1995, 35) and Illaunloughan (White Marshall & Walsh 2005). The space did not need to be demarcated by partitioning walls though such evidence has been found at Reask (Herity 1995, 30; Fanning 1981) and Inishmurray (1995, 39). A similar form of division also appears to have been in existence at Cashel, Co. Tipperary (Hodkinson 1994, 173). The excavator noted a clear division of space in the Pre-Cormac Chapel (Pre 1127-34) phase where a boundary appears to have been created to demarcate the space between a graveyard to the east and a more profane area to the west. Hodkinson has noted 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. In other sites such as Killabuonia and Skellig Mhichil, it appears that the church authorities manipulated the local hilly topography to creat terraced slopes which were ideal for organizing and demarcating space at these sites.

Excavations have yet to clearly establish when these ecclesiastical sites began to acquire some form of standard form and how the layout of these sites changed over time. The excavations at Church Island and Reask revealed evidence for two major phases of occupation where organic built structures were replaced by stone buildings (O'Kelly 1957-59; Fanning 1981). Such a scenario has also been uncovered at Illaunloughan where the excavators have dated the transition from sod-walled structures to stone churches to the eighth century (White Marshall & Walsh 2005, 37). Indeed there is indirect evidence indicated by a cross-decorated ogham stone that Church Island was occupied from an early date. An early date for Reask is also likely due to the recovery of an early cross and spiral carved pillar as well as imported Bii pottery sherds. Both sites revealed evidence for churches and structures which were most likely contemporary with each other and dated to both phases through this could not unfortunately be proved stratrigraphically. The evidence at these two sites and Illaunloughan does appear to suggest a conscious re-organization of these sites sometime in the seventh and eighth centuries which was reflected through the superimposition of new Gallarus-style oratories and drystone clochán's on top of previous organic structures and burials. Evidence from Reask also suggests that the enclosure was repaired and the areas between the church/cemetery and domestic structures divided by an internal wall in this second phase (Edwards 1990, 118).

Christian Ideology and the Organisation and Layout of Ecclesiastical Settlements

It has been argued (1995, 17) that the conjunction of the oratory, cross-slab and founder tomb and leachta at early church sites was once common throughout the entire country. Herity has argued that monasteries to the east developed into something more elaborate and complex through the early and later medieval periods, with those hugging the Atlantic coast preserving their archaic and conservative qualities. There is a strong argument to be made that the cult of the relics and the associated growth of pilgrimage a fundamental impact on the growth and organisation of early ecclesiastical settlement as centres of worship and pilgrimage (Ó Carragáin 2003). There has been an emerging understanding that these monuments associated with pilgrimage and founding saints can provide valuable information about how ecclesiastical sites were organised in this period. A number of recent studies have sought to explore how broader ecclesiastical topographical templates and religious ideas shaped and informed the architectural form and location of churches, domestic buildings, high crosses, *leachta*, tomb shrines and cemeteries during the early medieval period (e.g. Doherty 1985; Aitchison, 1994; Ó Carragáin 2003)

A key characteristic, as mentioned above in the discussion of the various tomb-shrines at many Irish ecclesiastical sites is the 'prevalence of enshrinement in modest structures removed from the main liturgical space and often over the saint's original graveyard' (Ó Carragáin 2003, 134). The position of these shrine houses varies greatly in relation to the main liturgical church at the ecclesiastical settlement because they were built over the graves of founding saints prior to the formal organisation and layout of ecclesiastical sites in the 7/8th century (Ó Carragáin 2003, 134). Studies of the architectural setting of relics in Francia and

Anglo-Saxon England have found that the shrines of founding saints were however situated next to the altar in the church (Ó Carragáin 2003, 139). This contrasts to the Irish model of separating liturgical and reliquary space into two distinct structures. Ó Carragáin has suggested that the Tomb of Christ (Aedicule) in Jerusalem may have provided the prototype for the Irish architectural setting for early relics. Adomnán, bishop of Iona c. 680 appears to have been familiar with this complex as he depicted both the primary liturgical building (Constatine's Basilica) and the aedicule or tomb of Christ as distinct structures. The aedicule was contained within the Anastasis (Resurrection) Rotunda which was shown as a series of concentric circles enclosing the sacred space. It is instructive to note that both Doherty (1985, 57) and Aitchison have argued that Irish ecclesiastical settlements were also conceived as having a religious template in which a sacred core was surrounded by a number of concentric boundaries demarcating areas of decreasing holy importance. This template which established a hierarchy of holiness in which a priestly elite was based in the sacred core and the laity based out in the periphery provided a model for maintaining the spiritual purity of the holy core.

It is likely that the organization of pilgrimage activity was a fundamental feature of important early ecclesiastical settlements. It is evident that the growth of the cult of relics corresponded with increasing formalisation of ecclesiastical cemeteries in the seventh and eighth centuries as the church sought to root out the continuing use of ancestral burial mounds in this period. This is clearly illustrated through the use of the term *reliquiae* or 'remains of saint' to denote an early Christian cemetery or *reilig* in the seventh and eighth centuries (Doherty 1984, 53; Ó Carragáin 2003, 147). They sought to achieve this as O'Brien suggests by replacing the tradition of burial beside the bones of ancestors for burial beside the bones of saints (O'Brien 1992, 136). At the same time, it appears that relics were brought on a circuit through the local region (Lucas 1986, 16) to reinforce the authority of the local saint as a patron (érlam) of the local secular community. The church authorities sought to further reinforce their authority by developing the motif of the Irish saint collecting soil from the Holy Shrines of Rome and sprinkling it across the Irish cemetery. These particular cemeteries were known as *Ruáma* or Romes and serve to further illustrate the role in which important shrines at Rome and Jerusalem played in developing and organising the church elsewhere in Christendom.

The early medieval 'Monastic Town debate': interpreting settlement, industry and agriculture at significant church sites:

Introduction

The character and extent of settlement, industry and agriculture around larger ecclesiastical sites has been the subject of intense debate, particularly in recent years. There has always been some hazy understanding about nucleated settlements around important ecclesiastical cores with Henry (1967, 42) suggesting that the population of some of these sites like Armagh may have surpassed 3,000 people. The first theoretical explicit explanation of early medieval 'monastic town's in Ireland emerged following the publication of three successive articles by Charles Doherty in the early 1980's (1980, 82 & 85). The final article, 'the monastic town in early medieval Ireland' was a logical conclusion of a theory which suggested that the monastic settlement was the primary agent in stimulating urban development during this period (Doherty, 1985). It has had a profound effect on how archaeologists conceptualised economic, social and political developments in this period and has largely been taken at face-value by eminent historians and archaeologists such as Ó Corrain (1994) and Edwards (1996). Doherty's theory evolved from an assumption that every ancient city grew out from a sacred core (Doherty, 1985, 46). The idea of the 'monastic town' in early medieval Ireland has been a persuasively popular idea because it has cut to the heart of a range of issues including the question of the indigenous origin of Irish towns and the role of monastic sites within their regional landscapes.

Doherty's theory first evolved from an assumption that every ancient city grew out from a sacred core (Doherty, 1985, 46). He explored the concept of the 'celestial or ideal city' as a means of thinking about how people cross-culturally mentally organised their cities and created order (cosmos) in the past during an early phase of urbanisation. In a Christian European context, he suggests that the idea of the New Jerusalem, which acted as an *imago mundi* or image of the universe, was the symbolic template for how Irish churches were spatially ordered. He then suggested that the church emerged as the dominant institution of Irish society by the eight century because it had monopoly over literacy, manpower, donations, secular political support, craft-working and agricultural techniques. This development increasingly posed a major theological problem to the Christian cosmology (Doherty, 1985, 55). This fact that the church served as the major fixed point within a landscape ensured that it drew a large secular population that increasingly threatened to pollute the sanctity of the sacred core of the New Jerusalem. The solution was to take the idea of the city of refuge (*civitas refugii*) from the bible and to maintain the purity of the settlement by clearly demarcating the complex into areas of different sanctity. This resulted in the 'creation of an idealised form, a schema, which allowed a monastic site to have a holy of holies at the core, around which were areas of sanctuary that decreased in importance the further they were from the centre' (Doherty, 1985, 57). The large secular population or *manaig* were restricted to the *suburbana* along the edges of the complex, thus preserving the purity of the sacred ecclesiastical core. Therefore Doherty concluded that a process in which a standard cosmological layout was imposed on ecclesiastical sites had taken place by c.800. An architectural monumentalisation of the sacred core and the appearance of market crosses at the periphery of such settlements then followed in the 10th century and with Doherty safely concluding now that 'it is at this point, that one might with confidence begin to use the term urban' (Doherty, 1985, 60).

The idea of 'monastic towns' has been challenged by a growing number of historians and archaeologists. Graham has discussed a number of issues with Doherty's theory in publications in 1987 and 1993 and in an important review of the 'progress in medieval Irish studies', a number of other scholars including Ryan (1996, 162) and Etchingham (1996, 138) have called for a complete reassessment of the concept of the 'monastic town' in early medieval Ireland. Subsequent papers by Valante (1997) and Swift (1998) have discussed in detail a number of potential problems with Doherty's concept of 'monastic town's'. Both Swift (1997) and Valante (1998) have challenged Doherty's use of urban terminology such as *civitas* and *suburbana* in his discussion of settlements like 7th century Kildare. Doherty, in fairness, never talked about 7/8th century monastic towns, but his use of such terms in promoting his own argument, they argue, have led to many archaeologists taking these translations at face-value and interpreting large nucleated settlements around monastic cores from the 7-9th century. This has led, as Swift (1997, 118) has outlined to 'the belief in the existence of somewhat ill-defined pre-tenth century towns... because of his use of 7th and 8th century texts which are laced with what appears to be urban terminology'.

Swift has analysed these terms in detail. She has argued that the urban terms like *civitas* and *suburbana* used by Doherty can be equated with terms like *tabernauclum, atrium* and *platea* that were used to depict a distinctive Irish dispersed ecclesiastical settlement pattern. She suggests instead that when Irish monastic communities used such urban terminology, that they were not referring to the idea of urbanism as shared with the Great Eastern cities, but were instead interpreting such ideas in an Irish localised context. She identifies the different tenants and secular communities living around these places from the sources, but she concludes that 'here again, the *civitas* is surrounded by pastures, enclosures and the houses of the peasants rather than the streets, fortified defences and the semi-industrialised craftsmen favoured by proponents of the early monastic town' (Swift, 1998, 113). She has also argued that Doherty's model fails to consider the possible role of secular sites in the origin of towns in Ireland. Both she (1997, 113-114) again suggests that the words *civitas, platea* and *atrium* were terms used to describe settlement areas in both high status ecclesiastical and secular sites. This is evident in a Patrician hagiography which describes the royal Leinster site of Dun Ailinne as a *Civitas Regalis* (Swift, 1998, 114). She argued that the

use of the terms *civitas, platea* and *atrium* in both ecclesiastical and secular contexts in the seventh and eighth centuries, suggests that it would be dangerous to see monastic sites 'as being organised in a fundamentally different way from secular sites' (Swift, 1998, 119).

It is important to emphasis however that Doherty's (1985) claims for 'monastic towns' refers to the tenth century and afterwards following the emergence of Hiberno-Norse towns. So how applicable is the theory of the 'monastic town' from the tenth to twelfth century? Graham (1993) has suggested that Ireland was in the process of feudalising in the eleventh and twelfth century and seems to have been prepared to accept that urbanisation around monastic cores was an important element of this development. As noted above (See Section), Valante (1997) has challenged the whole notion of 'monastic town's at any stage in early medieval Ireland. She has challenged Doherty's (198!) that monasteries were at the centre of a re-distributive economic system and has argued that there is no evidence that monasteries were controlling trade and exchange during the early medieval period. She (1997, 15-18) has claimed that these sites, even in the eleventh and twelfth centuries cannot be described as urban as the majority of people living in these settlements relied instead on agricultural production. While she acknowledges that the historical sources records houses and buildings around major ecclesiastical sites like Armagh, she has concluded, like Swift (1997) in her discussion of seventh and eight century monasteries, that eleventh and twelfth century ecclesiastical sites were surrounded by a dispersed form of secular settlement. These ecclesiastical sites did accrue an urban status, she argues, but only in the thirteenth century after the arrival of the Anglo-Normans.

The Excavated Archaeological Evidence in the Context of the 'Monastic Town' Debate

Introduction

This review of the monastic town debate has just touched on some of the principal ideas that have been put forward by a number of eminent historians, and historical geographers. Parallel with these ideas, a number of archaeologists (e.g. Swan 1985; Bradley 1992, 1998, 1995; Stout 2000) have been discussing the subject of urban origins in early medieval Ireland. Many of these archaeologists (Bradley 1992; 1999; Stout 2000) have suggested that early medieval ecclesiastical sites were displaying proto-urban qualities as they were operating as centres of trade and markets and that there is a growing body of evidence to support the idea of settlement complexity, density of population and evidence for specialised industrial and agricultural activities at these sites. While beyond the remit of this chapter, a crucial and vital element of this debate is our archaeological definition of what constitutes a 'town'. Can archaeologists further build on the work of Bradley (1998) and develop a range of criteria which can be used to assess whether one can identify sites with potential 'urban' qualities? It is evident that these ideas need to be examined in light of the growing body of excavated evidence for craft working, industry and trade from ecclesiastical sites in recent years.

Early Ecclesiastical Sites

The character of the early pre-tenth century church in Ireland has always been something of a conundrum. Few scholars today would suggest that ecclesiastical sits were displaying 'urban' qualities prior to the tenth century. It has been suggested by Herity (1977) and Swan 1982 & 1985) that ecclesiastical sites were beginning to display a remarkable consistency in their basic format and layout across the country from the seventh and eighth century though a contrary view of ad hoc development has been traditionally postulated (See de Paor 1958, 64; Killanin & Duignan 1967, 26; Hughes & Hamlin 1977, 73). Herity (1995, 17) has suggested that the conjunction of the oratory, cross-slab and founder tomb at early church sites was once common throughout the entire country. Swan (1985, 97) has similarly argued that the size and layout of ecclesiastical settlements across the whole island generally display some key consistencies comprising enclosures, ecclesiastical cores and boundary crosses. Like Doherty (1985), both archaeologists have suggested that ecclesiastical sites were developing

a standard layout during the 7/8th centuries though this was not architecturally manifested in stone till the ninth and tenth century.

If ecclesiastical sites were beginning to display some consistency in the layout of their ecclesiastical core, can we also begin to speculate about the character and extent of settlement at these sites? In recent years excavations have revealed a whole set of new archaeological evidence which has the opportunity to contribute to the debate. Evidence for pre-tenth century iron and metalworking has been uncovered at a number of western monasteries (e.g. Reask, Church Island, Illaunloughan) as well as at significant sites such as Iona, Kilpatrick, Clonmacnoise and Armagh. The evidence for specialized high status metal and glass working at Cathedral Hill, Armagh and the presence of imported wares (c. 400-700) at many ecclesiastical settlements indicates that these sites were also emerging as significant economic centres of society. There is also a growing set of evidence for early milling and corn-drying activities at ecclesiastical sites. The potential evidence for the role of monasteries like Nendrum as specialised grain-producing sites highlights the important economic functions of various ecclesiastical settlements across the country. It has been suggested (Murphy 2002) that the backfilling of the substantial enclosing outer ditch at Clonmacnoise may have coincided with the construction of the river Shannon Bridge which dates to A.D. 804 (O'Sullivan & Boland 1997) and the expansion of the settlement to the east of the core area (King 1991-2000, Excavation Bulletin). Along with the evidence for the digging of large enclosure ditches across the country in this period, this suggests that certain early sites could command control over considerable labour resources at particular times in this formative period.

How can we interpret settlement around ecclesiastical cores from this disparate bunch of archaeological evidence? Swift (1998) has suggested that the archaeological evidence corroborates her assessment of the documentary sources which indicate that important seventh and eighth century ecclesiastical sites were surrounded by 'pastures, enclosures and houses of the peasants' in the seventh and eighth centuries. While the archaeological evidence is still too patchy and partial to attempt any substantial re-evaluation of the ideas for a dispersed non-nucleated ecclesiastical sites forwarded by Hamlin and Swift, there is potential emerging evidence that some key sites were developing into significant economic centres fulfilling various agricultural and industrial activities in this period. One of the key arguments of Swift (1998) is that ecclesiastical sites were not organized in 'fundamentally different way to contemporary secular sites'. An important area of research would be to consider the character of the archaeological evidence at contemporary high status ringforts, crannogs and settlement/cemetery sites in relation to the evidence at ecclesiastical sites to understand both the nature of settlement at these various sites and their various economic, social, political and religious roles and functions within their wider regional landscapes.

Later Ecclesiastical Sites
The theory of the 'monastic towns' principally referred to the tenth-twelfth centuries. A range of historians (Doherty 1985), historical geographers (Graham 1993) and archaeologists (Swan 1985; Bradley 1992, 1994, 1995) have pinpointed the time around the tenth century as a significant period in the formation of 'monastic towns'. These ideas have coincided with ideas that Irish society was displaying proto-feudal characteristics in the later early medieval period (Ó Corrain (1972, 171-172 & 1978; Byrne 1973; Ó Cróinin 1995, 291-292; O'Keeffe 2000, 26). Graham (1993) has also specifically examined the relationship between the development of urbanisation and the growth of proto-feudal structures in Irish society. As outlined above, Swan has suggested a link between the location of high crosses and the existence of outer market-places immediately outside the entrance of the significant monastic sites like Armagh, Kells and Glendalough. He suggested that this point of mergence of ecclesiastical worship and the secular activities it generated could represent evidence for the gradual 'transformation of monastic communities into centres of trade and commercial activity' (Swan 1985, 101). In line with Doherty (1985), it has been suggested by Bradley (1995, 5 & 14) that 'monastic towns' began to develop in the tenth century and by the mid-twelfth century 'the Irish urban network consisted of five port towns and about fifteen monastic towns'.

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How have archaeological excavations in recent years contributed towards further advancing our knowledge and understanding about ecclesiastical settlement in this period? A cursory review of the evidence suggests that there is a growing body of evidence for iron/metalworking and agriculture at a large number of sites with some sites such as Armagh, Clonfad, Clonmacnoise and Dunmisk exhibiting evidence for highly specialized craftsmanship. The potential role of ecclesiastical sites in exploiting marine resources on a large scale is well documented in the medieval period and the potential association of a number of eleventh and twelfth century fish-traps with Movilla Abbey could represent evidence for the practice in an earlier context. The continuing discovery of both Hiberno-Norse and Anglo-Saxon coins in ecclesiastical contexts also indicates the importance of these centres in this period though they cannot however be used to suggest the presence of a market-economy.

It could however be argued that a particular number of these sites are beginning to display some evidence for considerable settlement complexity in this period. In 1994, Bradley sought to archaeologically test the theory of a 'monastic town' through selecting Clonmacnoise as a suitable case-study. He suggested a range of archaeological criteria to define an Irish monastic town; these include settlement complexity with a central core, domestic houses, workshops, streets, fairs, trade, enclosure and defence, a political role for the site as well as documentary evidence. He has argued that Clonmacnoise fulfils these suggested criteria and can be identified as a 'monastic town' in the later early medieval period. It is evident that the documentary sources record the presence of precincts surrounding the ecclesiastical core that were commonly known as trians at a number of sites including Armagh and Clonmacnoise (Bradley 1994, 44). The excavations at these larger ecclesiastical sites are uncovering increasing evidence for zones of industrial and agricultural activities in these 'suburban' areas beyond the inner ecclesiastical enclosure (See Craft Chapter). Evidence for intensive agricultural exploitation, stone sculpture, bone, antler, textile and leatherworking and highly specialised iron, metal and glass-working points to the important diverse economic role of these ecclesiastical sites within their wider regional landscapes. While, these sites have only been partially excavated, it is nevertheless clear that these monasteries had emerged as significant economic, social, religious and perhaps political centres within their regional landscapes.

Ecclesiastical Sites as centres of Trade and Exchange

Introduction

Much has been written about monasteries of centres of trade and the possibility that they functioned as urban centres (Doherty 1980; Swift, 1998; Valante 1998). It is extremely difficult to unequivocally identify evidence for internal trade in Ireland. Early monasteries were centres of craftwork (Ryan 1998) so it is unlikely that one could demonstrate that an object found was result of internal trade rather than being manufactures on a particular site. The discussion will therefore be confined to foreign trade. It can be assumed that all ecclesiastical sites were involved in some way an international trade network because wine is an essential libation of the Eucharist.

Imported Pottery

There is evidence for imported of pottery from western and northern modern-day France and the Mediterranean dating the fifth to eighth centuries at high status contemporary secular and ecclesiastical sites across Ireland. The evidence has recently been reviewed by Campbell (2007) although he does not list the individual sites where the material was discovered. Phocaean Red Slipware (A ware), dating between the 4th and 7th century, was manufactured in western Turkey add has been found on one ecclesiastical site in Ireland, Cabinteeley, Co. Dublin (*ibid.* 14; Conway1998; 124; Conway 1999, 41). Late Roman Amphorae (B ware) date mainly to the 5th and 6th century and are a general Mediterranean type and were manufactured in several locations (Campbell 2007, 19). This has been identified at several Cabinteely, Co. Dublin (Conway *ibid.*) Caherhillan, Co. Kerry (Sheehan 1999:326), Reask,

Co. Kerry (Fanning 1982, 114), Randalstown, Co. Meath (Kelly 1995:32), Derrynaflan, Co. Tipperary (O Floinn 1985:53; 1987:44), St. Patrick's Rock, Cashel (Hodkinson 1994, 171).

'E ware', which comprises a large range of vessel types including jugs, beakers, bowls, pitchers and storage jars, and is the most frequently encountered imported pottery in Ireland. It dates primarily to the sixth and seventh century and is thought to originate in south-western France (Campbell 1997, 28). E-ware has been recovered from a growing number of early ecclesiastical sites including Armagh (Gaskell-Brown & Harper 1984, 157), Cathedral Hill at Downpatrick (Brannon 1988, 63), Killederdadrum, Co. Tipperary (Manning 1984, 253), Clonmacnoise, Co. Offaly (King 1991:110), Cabinteeley, Co. Dublin (Conway 1999, 34), Caherlehillian, Co. Kerry (Sheehan 1999:326), Kilpatrick, Co. Westmeath (Swan 1995, 79) and Inishcealtra, Co. Clare (de Paor 1974:9).

D ware is also derived from France and like E-ware, has been dated to the 6th-7th century (Campbell 2007, 27-8). It can be found in the form of bowls, plates and moratoria. The latter type was used for the pureeing of fruit and vegetables (*ibid*. 27). The only Irish incidence of this type on an Irish ecclesiastical site is at Cabinteely, Dublin (Conway 1999, 41).

Glass vessels
Bourke's (1994) review of imported glass in Ireland indicate that that the majority was found on high status secular sites, with only two ecclesiastical sites producing material. Randalstown, Co. Meath produced a fragment of French cone beaker while a bowl fragment was found at Reask (*ibid*. 206; Fanning 1981, 123).

Fragments of porphyry have been found on several Irish sites and these have been discussed in detail by Lynn 1994). With the exception of a single piece of red porphyry from Armagh, all was of the green type. This red type was quarried in Egypt while the green type came from Greece (*ibid*. 19) but it was used mostly by the Romans as a decorative building material. Several reasons have been suggested for its importation into Ireland. One is that because of it association with Rome it was thought to be an appropriate material for inclusion in portable altars. Lynn noted that fragments have been found at the ecclesiastical sites Armagh, Downpatrick, Movilla Abbey, CO. Down and Kilteel, Co. Kildare. Generally, they were found in contexts that post-dated AD 1000. There were also seven separate finds of the material from Fishamble Street and Christ Church Place, Dublin. Since Lynn's survey, further examples of green porphyry have been found at Clonmacnoise (King 1992:157) and Derrynaflan, Co. Tipperary (O Floinn 1985:53). The bias of the material towards ecclesiastical sites would tend to support the theory that it had some religious function.

Coinage
Gerriets (1985, 132-133) and Kenny (1987, 517; 2005, 844-45) has cited the presence of coin hoards at ecclesiastical sites as supporting the theory that monasteries tended to be markets centres. Hall (1974) assembled the then available evidence for such deposits, mostly chance finds Hoards of Anglo-Saxon or Viking coins were found a Durrow, Co. Offaly (deposit *c.* 940), Glendalough, Co. Wicklow (3 hoards *c.* 942, *c.* 975 and *c.* 1090), Monasterboice, Co. Louth (*c.*953), Armagh (2 hoards *c. 970* and *c.* 1103), Rahan, Co. Offaly (*c.* 970), Kildare (*c.* 991). Several more coin have been found on excavations since this survey. A single Hiberno-Norse coins (*c.* 1000) was found at Downpatrick (O Baoill 1993:034), two Hiberno-Norse coins (*c.* 1020-1060) were found at Clonmacnoise (King 1992, 15), while a mid 11th century Norwegian coin was found at High Island, Co. Galway (Scally 1999:305).

Early medieval church archaeology – some concluding thoughts

Despite the enormous riches of the archaeological record for the early medieval church and its iconic role in early medieval studies generally, our understanding of the chronological and structural development of early medieval ecclesiastical and hermitage sites during the early medieval period is still quite limited though steadily improving.

Many western hermitage sites such as Illaunloughan, High Island and Reask, Co. Kerry have been extensively excavated and we have a good understanding about the chronological development and organization of activities at these few sites. Yet, it is evident that few ecclesiastical sites across the rest of the country have been comprehensively excavated, with the exception of a very small number of sites including Armagh, Clonmacnoise and Clonfad.

We still lack a clear understanding then 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 evident that a detailed study of this settlement, industrial and agricultural evidence could identify regional patterns in terms of the organization, character, layout and function of ecclesiastical sites through the early medieval period.

In recent years, there has also been a growing interest in a variety of both art/architectural and landscape research themes dealing with, among others, the archaeological evidence for the earliest Christian communities, the layout of ecclesiastical sites, the debate about 'monastic towns', the nature of early medieval pilgrimage and the character of early medieval pastoral care. Studies in these diverse areas also have the opportunity to shed new light on various facets of the early church in Ireland, particularly in light of recent archaeological excavations.

Chapter 5. Early medieval burials and cemeteries

Introduction

The centuries from A.D. 400-1200 are commonly regarded as the 'early Christian period'. Yet 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. Christianity only appears to have emerged as the dominant religion by perhaps the 6th century A.D. However old traditions died hard and burials continued to be interred in many diverse, often probably ancient contexts up to the 7th/8th century A.D. and even beyond. In the 9th and 10th century, we see the re-introduction of 'Pagan' Norse burial rites in the Viking Age and throughout the period, there is also an intriguing, idiosyncratic range of human burials placed in 'odd contexts' such as early medieval house floors (e.g. at Newtown, Co. Limerick (Coyne and Coyne 2003, 17-18), or in caves as at Cloghermore, Co. Kerry (Connolly and Coyne 2000) and at Kilgreany, Co. Waterford (Dowd 2001, 2002). It is certainly true that Irish archaeology has uncovered an extraordinarily rich array of evidence for people's beliefs, ideologies and ritual practices. The most challenging aspect of this material for the future is that we do not 'normalise' it to fit in with our neat – and poorly understood - social identity categories of 'Irish', Anglo-Saxon', 'Viking', 'Pagan' or "Christian', especially given that archaeologists have recently recognised that early medieval social identities of community, personhood and belief can no longer simply be 'read' in the traditional fashion, from the archaeology of burial (Williams 2006).

A wide range of authors have previously published on early medieval burial practices in the period 1930-2004. There are of course, large numbers of publications of early medieval cemetery site excavation reports (e.g. Burke and Clinton 1983-84; Hurl 2004; Manning 1985-1986, Manning 1986, O'Neill 2006, 2007, 2008, to choose a few at random). There have also been a wide range of primary and secondary publications of early medieval burials and cemeteries that give a sense of changing practice and beliefs across time, ranging from the transitional Iron Age/early medieval period (e.g. Eogan 1974, 1974; McCormick 1995; O'Brien 1990, 1993, 2003; MacGarry 2005, 2007; Clarke and Carlin 2006) to the Viking Age (Hall 1974, 1978; Sheehan 1987; Ó Floinn 1988, 1998; O'Brien 1995, 1998; Harrison 2001; Simpson 2003). Elizabeth O'Brien (1992, 1993, 1995, 1998, 2003) has written some of the key texts in understanding and interpreting the burial practices of the peoples of early medieval Ireland that have emerged from such site excavations. Finally, there is also a growing and welcome number of published specialist osteological reports analysing the genetics, health, diet and diseases of the human bodies themselves (e.g. Howells 1940-1941; Power, 1994; Buckley 1991; Ó Donnabháin and Hallgrímmsson 2001; Fibiger 2005; Channing and Randolph-Quinney 2006; Hallgrímmsson *et al*, forthcoming) and this latter area will be 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') - the only way after all that any person could have experienced the early medieval world.

This chapter describes and analyses at a preliminary level, the wide range of early medieval burial evidence that has been discovered in Ireland, AD 400-1100. The first section describes the rites and practices used in burying the corpse of the deceased, in other words the actual treatment of the body itself. The chapter then examines the diversity of burial practices in the Iron Age/early medieval transition period (i.e. in the 5th-6th century A.D.), in enclosures, mounds and other contexts and describes the increasingly rich evidence for unenclosed burials and cemeteries in the early medieval archaeological record. The function and role of these sites still has to be established. We then explore the emerging evidence for early medieval 'settlement/cemetery' sites – a distinctive and new type of archaeological site used

right across the period (in reality, an old type of site only recently recognised as distinctive) that warrants much greater analysis and thought (e.g. Manning 1986, O'Neill 2006, 2007, 2008; Wiggins 2006; Seaver 2005, 2006). We then move on to explore the evidence for 'Christian' burial practices as Irish society evolves into the early medieval period proper, with the emergence of burial in ecclesiastical or monastic contexts (e.g. Fanning 1981; Fry 1999; Scally 1999, Swan 1976; Marshall and Walsh 1994, 2005) and here we review the emergence of ecclesiastical cemeteries possibly in the 7th/8th century, their links with earlier funerary sites and the evidence for diversity in burial rites within these sites. As mentioned above, there is intriguing evidence that 'Pagan' burial practices continued well into the early medieval period – suggesting that the hegemony of Christian authorities was not total in the landscape. In any case, 'Pagan' burial practices are certainly re-introduced in the 9th century AD, when Viking raiders were being buried in Dublin and elsewhere, until the Hiberno-Norse were converted to Christianity and merge into the gradually more homogenous burial practices of the developed Medieval world. This chapter also provides a preliminary review of that 'Norse' furnished burial practice, AD 800-1170.

Burying the dead in early medieval Ireland – how was the corpse treated in rites and practices?

We can firstly explore the rites of burial itself. Early medieval people in Ireland buried their dead in a range of ways, using a variety of rites and practices, involving the placing of the body in slightly different positions and using grave goods, stone, wood and cloth in different ways (O'Brien 1992, 1993, 1995, 1998, 2003).

Almost all early medieval burials were buried without grave goods, in an east-west orientation (with the head to the west), in an extended, supine position (i.e. lying on the back) in a long dug grave (that may be defined in various ways). This is a burial practice that is not entirely Christian in origins, as it emerges in Roman-Britain in the 2nd/3rd century AD. Rarely, early medieval burials are in a prone (lying face down) or flexed (with legs drawn slightly upwards); practices that may be contingent on events (hurried burials during war, disease) or cultural practices (Anglo-Saxon influences or the treatment of marginalized people such as criminals or outlaws).

However, it is not as simple as this and it is now known that the treatment of the corpse itself (as well as the grave furniture, see below) shows some chronological development through the early medieval period (e.g. the gradual shift away from an unwrapped body towards the use of a shroud cloth tightly wrapped around the body), but there is also evidence for continuities (e.g. the use of unprotected or unlined graves - simple dug pits – across the entire early medieval period) and for rites that vary within burial grounds at the same time (e.g. the use of stone slab-lined cists in the 5th/6th century or lintelled graves in the 7th/8th century *at the same time* as unprotected graves). This means that although patterns can certainly be discerned, it would be unwise to date excavated burials by burial rite alone. There are also a few practices that, although rare (such as the very rare use of 'pillow stones' placed behind the head) can be found across all periods. In crude summary, burial rites in the early medieval period include:

- **Iron Age/early medieval transition period burials (5th/6th century AD)** (evolving from Iron Age traditions in the 3rd/4th century AD): Bodies are buried as extended inhumations, east-west in orientation, in long stone slab-lined cists or in unprotected dug graves. The corpse is placed 'loose' (i.e. not wrapped in a shroud or cloth binding - although there may have been a covering cloth over the face - so that arms and feet are apart). The long stone cist might be defined with upright kerbstones along the sides and ends of the grave, with stones also laid as a base and across the top as capstones. It is not possible to say whether such burials in slab-lined graves are 'Pagan' or

'Christian', as extended inhumation in east-west orientation is a rite descended from Romano-British, non-Christian practices

- **Early medieval 'Christian' and 'Pagan' burial (7th/8th century AD, or later).** Early medieval Christian – as most of them probably were by the 7th/8th century AD - burials were often (but not always) in ecclesiastical graveyards: Bodies must have been tightly wrapped in a cloth shroud, causing the arms to lie tight against the body while the feet are close together at ankles (as depicted on Cross of Scriptures). Bodies may be placed in a 'lintelled' grave (with stones at edges and ends, but NOT with laid stones in the base of grave) or alternatively in a dug, unprotected grave. Lintelled graves tend to be dated to after the seventh century AD. The head may be flanked or propped by 'ear-muff' stones (preventing the head from slumping sideways) or there may be a 'head-cist' (i.e. an arrangement of stones around head only). Other unusual burials are also known in caves that might be 'Christian' burials, but some of these may well be 'Pagan' burials (e.g. at Cloghermore, Co. Kerry) well into the Christian era (i.e. in the 7th/8th century AD). There are also some burials from the 6th/7th century AD, mostly along the east coast, that have produced a few grave goods (e.g. brooches, knives, deposits of charred grain) that might be interpreted as Anglo-Saxon burials.

- **Early medieval 'Norse' furnished burials (9th/early 10th century)** will usually be in unprotected graves, typically with various associated objects (e.g. males with daggers, swords, shield bosses or females tortoise shell brooches – although it is possible for such gender roles to be not so clear). It should be noted that not all Norse people were buried with such high-status grave goods, suggesting that it may be difficult to distinguish between Christian 'Irish' and Pagan 'Norse' unfurnished burials in the 9th and 10th century AD.

- **Early medieval Christian burial with recumbent decorated/cross slabs (8th-11th century AD)**. The burial is associated with gravestones, such as recumbent slabs. The burial may be in unlined graves or lintelled graves, but the distinctive touch is the recumbent slab over or beside the grave. This practice was probably reserved for people of high (e.g. aristocratic or ecclesiastical authority) status. High status recumbent slabs have also been recovered from a large number of significant early medieval ecclesiastical sites particularly at Clonmacnoise and Gallen, Co. Clare, Iniscealtra, Co. Clare, Glendalough, Co. Wicklow, Nendrum, Co. Down, Inishmurray, Co. Sligo, the Aran Islands, Co. Galway, Kilpeacan and Kilberrihert, Co. Tipperary and Tullylease, Co. Cork (Lionard 1961). A number of high status burials at Iniscealtra and Glendalough were lined with slabs that project over the surface. They were then covered with recumbent slabs, many of which were decorated with incised and carved crosses. Small socket-holes were present at the head or foot of the graves and would have held upright crosses (Lionard 1961, 150). These burials tend to date to after the 8th century and may represent the burial places of high status ecclesiastics and secular individuals.

- **Late Medieval burials (12th/13th century and later)** Corpses are placed in wooden coffins (with surviving iron coffin nails), arms will be placed crossed across chest, and body will be tightly wrapped in a shroud – and shroud pins will be associated with body (as at Ardfert, Co. Kerry).

Iron Age/Early medieval burials in penannular burial enclosures and in annular enclosures/ring-ditches (5th-7th century A.D.)

Introduction

O'Brien (1993) was the first archaeologist to note that Iron Age/Early Christian transitional burials were being interred in annular burial enclosures (i.e. circular ditched enclosures, descended from the very long tradition (i.e. as in Bronze Age and Iron Age) of burial in ring-ditches and barrows). She showed how historical sources like the *Collecto Canonum Hibernensis* provided information about the continuing practice of burial within possible pagan unconsecrated cemeteries in the 6/7th centuries. O'Brien (1993, 133) noted a comment by Tirechan which mentioned the burial of two daughters of a king inside a round ditch "after the manner of a *ferta*, because this is what the heathen Irish used to do, but we call it a relic". O'Brien suggested that Iron Age/early Christian ring-ditches or ring-barrows were the possible location of these pagan *ferta* or *relic* cemeteries in the 5th/6th/7th centuries AD. O'Brien's (2003) paper mentioned five annular burial enclosures known at that stage which could be examples of *ferta* or *relic* cemeteries.

Iron Age/Early Medieval burial in Penannular Enclosures

In the Iron Age/early medieval period transition there seems to have been a few places where the very rare practice of burying the dead in *penannular* enclosures was carried out.[2] One of the earliest hints of this Iron Age/early medieval burial tradition ironically came from the later prehistoric research of the Discovery Programme. The Ballyhoura Hills Project's (directed by Martin Doody) excavations at Chancellorsland, Co. Tipperary discovered that a fill (not a burial deposit) from the ditch of a ring barrow produced a radiocarbon confirming its use in the 7/8th centuries – although the site had originally been excavated as it was thought to be a Bronze Age barrow located close to a confirmed Bronze Age settlement enclosure (O'Brien 2003, 69). However, O'Brien (1993) recognised the implications of 'late' date and also noted how a similar ditched enclosure containing extended inhumations in unprotected graves was revealed 200m to the southeast of the ecclesiastical enclosure at Durrow, Co. Offaly. Though the dates of this annular ditched enclosure were not available at the time (they have since suggested a 9th century AD date; Elizabeth O'Brien, pers comm.), she postulated whether it might represent a pagan cemetery (ferta) that was Christianised later.

Iron Age/early medieval *penannular* enclosures are now known to include Westreave, Co. Dublin and Colp, Co. Meath, (Gowen 1989, 31-2; O'Brien 1992, 133; 1993, 98) Greenhills, Co. Kildare (Keeley 1991), Chancellorsland, Co. Tipperary, Castleupton, Co. Antrim (Gahan 1998, Excavation Bulletin) and Ardsallagh I and Ardsallagh II, Co. Meath (Clarke and Carlin 2006). These enclosures with entrance gaps in the ditches became the focus of inhumation cemeteries containing both east-west unprotected and stone/slab-lined graves (O'Brien 2003; Clarke and Carlin 2006).

At Greenhills, near Kilcullen Co. Kildare a number of unprotected and stone/slab-lined east-west inhumations, including an adult female and a child, were situated inside and outside the ditched enclosure (Keeley 1989-1991). A burial outside the enclosure produced a radiocarbon date of between the 4th and the 7th centuries AD.

At Castle Upton, Templepatrick, Co. Antrim, a centrally placed stone-lined grave and an unprotected parallel grave were found inside a penannular enclosure (Gahan 1998, Excavation Bulletin).

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[2] Pennanular enclosures are those ring-ditches where a single causewayed entrance is left, so that the ditch is not continuous; In contrast, more common annular enclosures are continuously circular ring ditches: Elizabeth O'Brien pers comm).

At Chancellorsland, Co. Tipperary, a pennanular enclosure was excavated and ditch fill was radiocarbon dated to the 7th/8th century AD (O'Brien 2003, 69).

At Westereave, Co. Dublin, the first phase saw the establishment of a well-ordered cemetery containing east-west unlined pit burials inside a penannular burial enclosure or ring-ditch. The second phases saw further stone-lined burials extending out over the fill of the ditch into the surrounding area. In total 52 burials were excavated at the site (Gowen 1988, Excavations Bulletin)

At Colp West, Co. Meath, excavations revealed a cemetery of over 100 inhumations, 14 of which were set in stone-lined burials. A number of primary burials appear to have been contained within a penannular burial enclosure, 15m in diameter that in turn was succeeded by a cemetery of approximately 100 burials (Gowen 1988, Excavations Bulletin; O'Brien 1993, 98).

At Ardsallagh II, Co. Meath, archaeological excavations by Linda Clarke (ACS) in advance of the M3 Clonee to north of Kells Motorway, identified an early medieval penannular enclosure, 21m in diameter with an entrance causeway. The excavations revealed two early Bronze ring-ditches containing flat cremation cemeteries. The early medieval pennanular ring ditch was found beside these features and was found to have imitated them in form (a feature noted at Rathdooney Beg, Co. Sligo, where a Neolithic bowl barrow was similarly replicated in the Iron Age (Carlin & Clarke 2006)). Its primary and main fills were radiocarbon dated to between the fifth to the eighth century and it was later re-used as a segmented enclosure. There was no clear evidence for burials (Linda Clarke pers. Comm.).

At Ardsallagh I, Co. Meath located close by, a pennanular ring-ditch, 14m in diameter, was also recently excavated by Linda Clarke (ACS). Late Bronze Age and Iron Age cremation burials were found on the site, indicating that it already existed as a ritual locale. The Iron Age/early medieval transition pennanular enclosure ditch, with an entrance to the west, was dug in the 4th-6th century AD and the burial enclosures showed evidence for use in the 5th-7th century AD. The early medieval burial ground had up to 30 east-west inhumations, including 5 stone-lined inhumations outside the enclosure and 24 interred bodies inside the ring-ditch. Four radiocarbon-dated burials ranged from the fourth to the seventh century AD (Clarke & Carlin 2006; Linda Clarke pers comm.).

A penannular ring-ditch (II) was excavated by Christine Baker at Cloncowan, Co. Meath in advance of the Bord Gáis Pipeline Scheme to the West. Sixteen burials were excavated, 13 of which were found within the ditch with the remainder in the interior. There was no consistency in their alignment though one burial was defined by earmuffs while another contained a pillow stone. Most of these burials have proven to be late medieval in date, though early medieval burials are also present (Baker 2002:1438).

Iron Age/Early Medieval Burial in Annular Enclosures/Ring-Ditches

Early medieval burial in annular enclosures (i.e. with continuous, circular ring-ditches) is much more common. EMAP's review of the excavation evidence has thrown up other potential sites which could be considered in such a category involving burial inside ditched enclosures described in this instance by O'Brien as "Annular Burial enclosures" but which could also be variously described as ring-ditches or ring-barrows.

Excavations at Mell II, Co. Louth in advance of the M1 Motorway revealed nine crude stone-lined graves in close proximity to a ring-ditch that may date to the Bronze Age. A silver ornament was found interred with one inhumation while a cremation pyre was also potentially excavated (Breen, excavations Bulletin, 2000).

Excavations at the large settlement-cemetery site at Raystown, Co. Meath also revealed a 4/5th century ring-ditch, 20m in diameter that served as the setting for an inhumation cemetery of 93 people that continued through the early medieval period.

Excavations at Armagh by Lynn in 1979 revealed a Neolithic ring ditch, 11m in diameter which was found associated with a cemetery of approximately 60 east-west inhumations. The site was located in the postulated area of the historically known *Temple na Ferta*. A radiocarbon determination for one grave returned a date spanning the mid fifth-mid seventh century (cal. A.D. 430-640) (Edwards 1990, 130). One of these was interred within a wooden coffin and marked out by wooden posts which Ó Carragáin (2003) suggested might represent evidence for a translation. The cemetery appears to have fallen out of use by the 9th century when the area was used for industrial purposes.

Excavations at Corbally, Co. Kildare revealed a site that began as a small ring-ditch but later evolved into a large sub-rectangular enclosure, c. 50m in diameter. Eight simple dug graves were excavated. Burials inside the ring-ditch were radiocarbon dated to between 330AD and 540AD, while those from outside the enclosure were dated to between 770AD and 820AD (Stout 2006). It appears then that burial activity switched from the interior of the ring-ditch to around the monument as appears to have occurred at Westereave and Colp West. A vast quantity of settlement evidence was also uncovered. The site appears to have been an important settlement site with some burial activity from the Late Iron Age to the 10/11th century at least.

Excavations at Coldwinters, Lusk, Co. Dublin in advance of the M1 Airport-Balbriggan Motorway Bypass (Opie 1999, Excavations Bulletin) revealed a double-ditched enclosure. The outer ditch was 45m in diameter while the inner enclosed an area of 39m. Six east-west burials were excavated within the interior of the site. A small circular ring-ditch measuring c. 10m in diameter, 0.8m wide and 0.3-0.8m deep was cut into the large enclosure. A single human extended supine burial contained within a slab-lined grave and covered by a few covering lintels was excavated within the centre of the ring-ditch and was aligned south-east/north-west. There were no grave-goods present. A limited quantity of settlement evidence was uncovered.

Iron Age/Early Medieval Burial in Ancient Ring-Barrows

One interesting facet of this burial evidence is the hint that some communities buried their dead in barrows and ring-ditches that had actually been created in prehistory. In other words, people were actually using ancient monuments, as opposed to building new monuments that either respected or mirrored ancient forms. Excavations have therefore revealed that Iron Age/early medieval transition inhumation cemeteries were interred inside and around pre-existing ring-barrows.

An Iron Age ring-barrow was excavated at Bellinstown, Co. Dublin in advance of the M1 Balbriggan-Airport Bypass (Lynch 2002 Excavation Bulletin). A deer antler and a small deposit of cremated bone were found inside the monument. The northeastern side of the monument was cut by five unprotected east-west inhumation. Immediately beside these inhumations were four others, orientated northeast-southwest.

A possible annular enclosure or 'ring-barrow' was found 10m to the north of the ecclesiastical cemetery at Derrynaflan monastery, Co. Tipperary and excavated by Elizabeth O'Brien, under a licence held by Raghnaill Ó Floinn (E. O'Brien pers. comm.). The barrow had been extensively disturbed by later activity but survived as a shallow flat bottomed ditch 1.0m wide and enclosing an area of 6m in diameter. Two pits were found to contain quantities of charcoal, cremated bone and animal bone as well as potential undisturbed burials. No human bone was identified (O'Floinn 1985: 53).

Excavations by Finbar McCormick (1995) at Kiltullagh, Co. Roscommon revealed a cemetery of stone/slab-lined and unprotected inhumations and Iron Age cremations pits beside a

standing stone and ring-barrow on the summit of the hill. One stone/slab-lined inhumation burial was dated to the 5th century A.D. It is clear that the ring-barrow and standing stone had become the focal point of later inhumation burials in the Iron Age/early medieval transition in the 5/6th centuries.

Recent excavations at Cross, Co. Galway in advance of the N6 Galway-Ballinasloe Road Scheme revealed two ring-barrows that appear to have been the focal point of burials in the early medieval period (Bermingham 2007).

The Origins and Chronology of the Iron Age/Early Medieval Pennanular and annular Burial Enclosure

In summary, there is increasing evidence for the burial of predominantly east-west inhumations (that may or may not be Christian burials) inside, outside and around ditched enclosures that were variously penannular enclosures, annular enclosures, ring-ditches and ring-barrows. It is clear that excavations in recent years have increased the number of known ditched enclosures with Iron Age/early medieval east-west inhumations, many buried within stone/slab-lined cists. Radiocarbon dating indicates that some of these were re-used Iron Age monuments; some were located on or close to Late Bronze Age or Iron Age burial grounds (although these ancient cremation burials would hardly have been distinctively marked or highly visible in the fifth century), while some were actual Iron Age/early medieval dug monuments constructed *a novo* in the mid-fifth century AD and after (i.e. contemporary with the earliest Christian missions in Ireland, although this of course does not signify that these were Christian believers).

What are the origins of these Iron Age/early medieval burial grounds – that may well be the form of monuments known to Tirechan as *ferta*? O'Brien (1993, 2003) noted that the Iron Age/early medieval burial enclosures had possible common ancestral antecedents in the Irish landscape in the form of the Bronze Age and Iron Age ring-ditch and/or ring-barrow. It is certainly possible that Irish Iron Age/early medieval transition burial enclosures have their origins in native Irish prehistoric monuments (and it is striking that at Ardsallagh I and II, there was clear Late Bronze Age and Iron Age burial activity there beforehand). Clarke and Carlin (2006), amongst others, have also noted how the annular ditched enclosure (ring-ditch, ring-barrow) is a monument that is continuously found from the Neolithic through to the early medieval period.

O'Brien (1993, 2003) has noted that Iron Age/early medieval *penannular* enclosures tend to be located in areas of Ireland that had both historical and potential archaeological links with Anglo-Saxon England in the 7th century; i.e. the kingdom of Brega on the east coast. She noted that her five examples of penannular burial enclosure (i.e. penannular referring *only* to those enclosures with an entrance gap in the ditch, *not* the much more common annular enclosures that are fully circular enclosures) could be compared particularly to sites in Anglo-Saxon England. These pennanular enclosures, which remain rare and are almost exceptional, invariably date to the 6th/6th centuries AD. O'Brien suggested that the penannular burial enclosure was probably a once off phenomenon which was due to contacts with Anglo-Saxon England in the 6th and 7th century (although she also suggested potential influences or links with Scotland, north Wales and Gaul).

Early medieval Brega undoubtedly shows other evidence for contacts with Anglo-Saxon England, both in historical and archaeological terms, building on cultural contacts that stretch back into the Iron Age. However, it is also true that the dating evidence shows that penannular enclosures certainly show many essential similarities (in size, location and general appearance) with fully circular, annular enclosures and many of these of course can be dated to the period AD 300-500, potentially well before any Anglo-Saxon connection. Excavations at Ardsallagh II, Co. Meath and Raystown, Co. Meath have confirmed that the early ring-ditches date to the 4/5th centuries A.D. The fact that burials tended to be located in the interior, inside the ditch and around the ditched enclosures at a number of the sites including Bellinstown and Ardsallagh 2 supports the idea that the ring-ditches predated the inhumation

cemeteries by at least some time (although the enclosing ditches could be merely days or weeks earlier than the *first* burial within them).

Undoubtedly, a range of traditions influenced burial in the Iron Age/early medieval transition, both native, ancestral and new. While it is possible that penannular enclosures may be related to influences from Anglo-Saxon England in and around the 7th century, the re-use of pre-existing funerary monuments such as ring-ditches was also an important component of religious practices in this period. This is particularly relevant when we understand that many of these like Ardsallagh and Chancellorsland contain evidence for ritual practices extending back into the Bronze Age. It is evident then that we should then consider the power of ancestral places as a powerful motivation factor in the location of transitional burials. This is clear when we consider the other settings and forms of 5th/6th/7th century burials and cemeteries across the island.

The abandonment of Iron Age/early medieval transition annular enclosures as we move on into the early medieval period

It is interesting that some penannular/annular enclosures were abandoned, whilst others continued to be used as places for the dead. Some ring-ditches possibly like Chancellorsland, Castle Upton, Templepatrick and Greenhills appear to have only been used for a limited number of burials in the transitional 5-7th century A.D. period. The penannular enclosures at Westereave and Colp West though appear to have provided a focal point for subsequent unenclosed early medieval cemeteries that later developed over the fills of the ditch and into the surrounding area. Both sites appear to have revealed no settlement evidence though it must be stated that only a small part of the sites, particularly at Colp West were fully excavated in 1988/89. Excavations at Ardsallagh II, Bellinstown and Kiltullagh also attest to the continued practice of limited early medieval burial in the interior and exterior of these monuments. The ring-ditches at Raystown and Corbally appear to have developed into subsequent significant enclosed settlement sites with evidence for burial well into the early medieval period (See Settlement/Cemeteries-Settlement Section below).

It appears then that many Iron Age/early medieval ring-ditches which may have been used for burial in the 5-7th century A.D. only saw limited activity and fell out of use after this period. The bulk of sites though appear to have seen intermittent burial evidence up around the 8th century A.D with a minority of sites developing into significant settlement/cemetery sites and possible ecclesiastical cemeteries.

Iron Age/Early medieval burials in association with prehistoric standing stones (5-7th centuries A.D.)

While the Iron Age/early medieval transition penannular/annular burial enclosure or ring-ditch/ring-barrow was possibly the most significant form of burial monument in the 5th/6th/7th century, it is also clear that other types of burial places were also popular across the island in this period. Some of these are similar to the above evidence, in that pre-existing funerary or ritual monuments provided a focal point for transition-period burials. Standing stones were one important ancestral monument that appear to have been *foci* for burial in this period.

The Evidence for Standing Stones and Iron Age/early medieval transition Burial

Excavations at Kiltullagh, Co. Roscommon (McCormick 1995) mentioned above were undertaken beside a standing stone indicating the important significance of this site in the period. Excavations at Kiltullagh, Co. Roscommon revealed a cemetery of stone/slab-lined and unprotected inhumations and Iron Age cremations pits beside a standing stone and ring-barrow on the summit of the hill. One stone/slab-lined inhumation burial was dated to the 5th

century A.D. It is clear that the ring-barrow and standing stone had become the focal point of later inhumation burials in the 5/6th centuries.

Excavations at Ballykeel South, Co. Clare revealed a stone/slab-lined cist burial that was radiocarbon dated to c. A.D. 400 beside a standing stone and near the enclosure known as Ballykeel Fort (Cahill 1988, Excavations Bulletin).

Excavations on the summit of an artificially constructed mound at Kilgowan, Co. Kildare revealed at least 9 extended east-west inhumations besides a cross-inscribed standing stone (Valerie Keeley 1987, Excavations Bulletin). A ditch-type feature (ring-ditch?) was excavated to its east though it was unclear if it enclosed the burials. Though no dates were given for these extended inhumations, it is probable that they date to this transitional period.

Excavations at Brackloon, Co. Kerry (Fionnbarr Moore, Excavations bulletin 1991) revealed a roughly east-west slab-lined burial situated halfway between a cross-inscribed pillar stone and an outcrop of rock art. No dates were available for this burial though it could potentially be early in date.

Excavations at Forenaughts Great, Co. Kildare (Grogan 1980) revealed a carefully constructed mound 1m in height containing a cremation burial dating to the 5th century A.D. It is unique in that it is the only excavated cremation burial site that dates to the fifth century A.D. A standing stone was located the Longstone Rath where Early Bronze Age cist burials had been excavated beneath previously. It is evident then that Standing Stones were considered as important ancestral monuments that could be reused in a funerary context in and around the 5/6th centuries. The antiquity of these Standing Stones is still a matter of debate with some commentators suggesting dates from the Neolithic to Iron Age, although ogham stones are obviously also standing stones.

Continuity of burial on into the early medieval period

A number of these examples such as Ballykeel South and Brackloon appear to represent isolated examples of stone-lined cists which potentially date to the 5/6th centuries A.D. Along with Kilgowan, it appears that these sites did not continue to remain a focal point of burial into the early medieval period. The cremation burial at Forenaughts Great remains an enigma. Its discovery beneath a mound suggests that that it fits neatly with the 'mound burial' category which appears to also have been a once of construction during the transitional 5-7th century A.D period. Kiltullagh was located both beside a ring-ditch and standing stone. The site is likely to have provided foci for an ecclesiastical site with early medieval origins at the summit of the hill. Another possible exception is Millockstown, Co. Louth where an important early medieval 'settlement/cemetery' site was excavated in close proximity to a standing stone.

Iron Age/Early medieval burials in prehistoric mounds and cairns (5-7th century A.D.)

It is also evident that ancient prehistoric mounds or cairns could also provide a focus for burial from the 5-7th centuries A.D. Evidence for this form of burial has been excavated in a variety of contexts including Neolithic passage tombs, early Bronze Age cemeteries and Bronze Age cairns.

The evidence for the re-use of prehistoric monuments by Iron Age/early medieval transition burials

Excavations at Knowth (Eogan 1974) revealed nine crouched, four flexed, eight extended and thirteen disturbed inhumations around the circumference of the passage tomb at Knowth, Co. Meath. The crouched and flexed inhumations contained grave goods and are Iron Age in date. Four extended slab-lined graves were set slightly apart and Elizabeth O'Brien (pers

comm.) suggested that these were likely to date to the fifth century A.D. They indicate the continued importance of this ancestral funerary monument during the transitional Iron Age/early medieval period.

Excavations at Betaghstown, Co. Meath revealed another complex funerary landscape dating from the Neolithic to Bronze Age. The prehistoric evidence there took the form of a Neolithic timber circle and an early Bronze Age cemetery. It was possible that the Bronze Age burials excavated by Kelly in 1979 may have been covered by a mound (Kelly 1979; Meenan 1998). Excavations also discovered an inhumation cemetery dating from the Late Iron Age/early medieval transition. A number of crouched pit and slab-lined cist burials were excavated at the primary levels of the site. One of the crouched pit burials was by an iron belt buckle, two penannular brooches, stone axe pendant and bronze plate and is likely to be late Iron Age/early medieval in date (Kelly 1979). Elizabeth O'Brien (pers comm.) suggests that the ritual and grave goods indicate that this could be a Romano-British or early Anglo-Saxon burial.

Early medieval burials were also found in a Bronze Age cairn, 25m in diameter, excavated by Elizabeth O'Brien in 1997 and 1998 at Ballymacaward, Co. Donegal, not far from the sea. The cairn measured 25m in diameter and was surrounded by a later stone kerb. A Bronze Age cist was probably the primary use of the cairn. Iron Age cremated bone mixed with charcoal and contained within two small bowl-shaped pits were uncovered near the centre of the site and radiocarbon dated to 2/1st centuries B.C. A total of ten Iron Age/early medieval east-west inhumations were also uncovered. Three were contained within slab-lined cists, one of which was radiocarbon dated to the mid fifth century AD. The remaining burials were in unprotected dug graves; some wrapped in shrouds, and were dated to around the 7th century AD. Ballymacaward is a fascinating example of a burial ground used periodically across later prehistory and into the early Middle Ages, with interesting connections being established by early medieval communities with the past.

Excavations along the M1 motorway at Claristown 2, Co. Meath revealed an enigmatic site that dated from the Neolithic to early medieval period. The earliest Iron Age phase consisted of a circular hut measuring 6m in diameter. It was succeeded by the burial of an adult inside a stone-lined cist in the centre of a possible ring-ditch that was then covered by a small mound. A possible circular structure was then built over the central burial. The structure was eventually dismantled and covered by a cairn of stones. Nine stone-lined inhumations were found to the north of the cairn and are likely to be Late Iron Age/early medieval in date, while another four unprotected burials were interred to the south of the cairn in the early medieval period (Russell, 2001). It is possible that people in the late Iron age/early medieval period understood the mound covered by a cairn of stone as an ancient ancestrally funerary monument.

Excavations were undertaken at Knoxspark, Co. Sligo (Mount 1994, Excavations Bulletin-94E060). A large early medieval cemetery with possible Late Iron Age/early medieval origins was excavated around two cairns which contained a cremation and child burial. It appears that the site was then enclosed by a rectangular promontory fort measuring 23m north-south by 19m east-west. Evidence for settlement evidence was also recovered indicating the site's possible function as an early medieval 'settlement/cemetery'.

Continuity into the early medieval period

Ballymacaward appears to have been re-used in the fifth century with a final number of unprotected burials interred around the site in the 7th century. A similar phasing of activity may have taken place at Claristown 2 where number of Late Iron Age/early medieval slab-lined burials were succeeded by unprotected burials dating to the early medieval period. No accompanying settlement evidence appears to have been uncovered at these sites. The burial sites at Knowth and Betaghstown are likely to date to the 5/6th centuries A.D. However the burials and the megalithic tomb at Knowth provided a focus for the development of a

significant early medieval settlement site with royal associations. Similarly, the burials at Betaghstown were located a short distance from an unenclosed early medieval cemetery (See Below), while an important enclosed settlement/cemetery site appears to have developed around two cairns at Knoxpark in the early medieval period.

Iron Age/Early medieval burials in 'mounds' (5th-7th century A.D.)

Elizabeth O'Brien (2003) has noted another type of Iron Age/early medieval transitional burials that she has described as "Mound Burials". O'Brien's (2003) 'Mound Burial' typically takes the form of classic transitional stone/slab-lined cists which were covered beneath low mounds.

The Evidence for Iron Age/early medieval Mound Burials

O'Brien (2003) noted four burials excavated beneath a low mound at Pollacorragune, Tuam, Co. Galway (Riley 1937, 44) that were subsequently dated to approximately the fourth/sixth centuries A.D.

An excavation at Muckduff, Co. Sligo undertaken by Joseph Raftery (1941, 302) also revealed an extended inhumation beneath a low mound which O'Brien (2003, 66) suggests dates to a similar period.

O'Brien (2003, 65) has also observed that extended east-west inhumations were excavated beneath a mound at Ninch, Co. Meath, one of which was possibly stone-lined. The mound measured 5m in height and 24m in diameter. One burial was radiocarbon dated to the fifth century A.D (Sweetman 1983).

A burial contained within a long stone cist was excavated beneath a low mound 14m in diameter at Farganstown & Ballymacon, Co. Meath (Kelly 1976). No radiocarbon dates were available for the site although it is quite likely that it is also transitional in date.

Other potential sites in which Iron Age/early medieval transition burials may have been interred in a raised mound include Knocklore, Co. Louth that was bulldozed in 1964. No extant remains of the raised mound survive though it was believed that upwards of 20 burials were recovered of uncertain date. Testing was conducted at the area in 1996 by Martin Fitzpatrick in advance of the N2 Ardee-Rathory Road Realignment but nothing appears to have been recovered. The site is of uncertain date though could potentially date to this transitional period.

Fifty inhumations were also excavated inside a mound at Johnstown, Co. Meath and dated to around the Late Iron Age. A charnel pit contained three inhumations and dated to AD 370-640 (Carlin, Walsh & Clarke, 2008). This cemetery later provided a focus for a significant early and late medieval settlement and cemetery site. In this case, the mound was probably a natural hill feature, but it may well have been that Iron Age/early medieval communities – unaware of its natural origins - regarded the site as a *ferta*.

Eoin Grogan's (1980) excavations at the low mound containing a cremation burial at Forenaught Great, Co. Kildare could potentially be regarded in this category. The presence of a 5th century cremation appears to represent an aberration in the burial data however as cremation appears to have fallen out of use by the 2nd/3rd century A.D.

Ad hoc burial and the concept of the 'burial mound'

It is clear then that pre-existing burial places – possibly regarded as ancestral or ancient monuments - were significant sites of high-ranking burial from the 5-7th century A.D., O'Brien (1992, 133) has however also alluded to another type of isolated burial. She has noted a number of historical references by Muirchu and Tirechan to people being buried on the spot of their death. Another reference by Adomnán refers to how after Columba had baptized an old pagan man, he presently died and was buried beneath a cairn of stones. It is evident that slab-lined cist burials were interned beneath a number of mound burials at Ninch, Co. Meath, Ferganstown & Ballymacon, Co. Meath and Pollacorragune, Tuam, Co. Galway and Muckduff, Co. Sligo as noted by O'Brien (2003, 65). A further slab-lined burial was interned beneath a cairn of stones at Claristown 2 although there was evidence for preceding prehistoric evidence. It is possible however that the examples of Knocklore and Johnstown 1 provide exceptions to the idea that transitional mound burials were associated with ad hoc burial as they appear to have contained in themselves important cemeteries.

Continuity of burial into the early medieval period

The 'mound burials' typically take the form of one or a limited number of inhumations, often set inside stone/slab-lined burials that were interred beneath small mounds. These small burial mounds do not appear to have remained a focal point of burial after the 5/6th century A.D. The possible exception listed under this category is at Knocklore, Co. Louth where upwards of 20 undated burials and Johnstown 1 that continued to be used as a settlement and cemetery site into the post medieval period. It is possible that these two examples belong to different categories as 'mound burials', observed by O'Brien (2003) appear to have been a once of construction built during the 5-7th centuries A.D.

Iron Age/early medieval burials in other forms of enclosure

There is also a growing body of evidence to suggest that large, pre-existing enclosures – or newly built enclosures (subtly different from the annular enclosures described above) - were used for burials in the Iron Age/early medieval transition period (4-7th centuries A.D.) some of which also became a focus for later settlement activities (See Settlement/Cemetery below Section). There is however no evidence for any churches on these sites, suggesting that they are some form of 'secular' burial ground. Some of these enclosed burial grounds became a focus for settlement.

The Evidence

Excavations at Cherrywood, Co Dublin revealed a 6/7th century inhumation cemetery containing 38 burials inside an enclosure measuring 43m x 20m. The site was situated in a rich prehistoric funerary landscape and was subsequently reused by later early medieval and potential Viking settlements (O Neill 1998, Excavations Bulletin- 98E0526).

Excavations at Mount Offaly, Co. Dublin revealed a large cemetery dating from the 5/6th century-11/12th century A.D. was enclosed within a bivallate enclosure (inner 50 x60m; outer 60-65m) at Mount Offaly. The enclosure was subsequently expanded in the early medieval period.

Excavations at Parknahown, Co. Laois by ACS also recently revealed a double-ditched enclosure (60m in diameter) whose ditches fill contained a late 7th century brooch. It enclosed a cemetery of approximately 600 people and was used for a number of centuries during the early medieval period.

Excavations at Faughart Lower by NAC also revealed a double-ditched enclosure that was dated to the 4-6th century A.D. The enclosure appears to have pre-dated the burials that began in the 5-6th century A.D.

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(http://www.nra.ie/Archaeology/LeafletandPosterSeries/file,9105,en.pdf).

Excavations at Millockstown, Co. Louth in Phase 1 revealed an enclosure measuring 65m x 56m. The enclosure was subsequently succeeded by a ringfort and later lintel cemetery (Manning 1986).

A similar scenario occurred at Ninch, Laytown that revealed that a number of enclosing ditches possibly indicative of a ringfort preceded the construction of a lintel cemetery c. 6-9th century A.D. (James Eogan; Cia McConway 2000-2002, Excavations Bulletin- 98E0501).

It must be said that 4-7th century A.D enclosures appear to have provided a foci for burial at these places though not all sites necessarily contained 5-7th century burial. These enclosures all appear to date to the Iron Age/early medieval transitional period. They were however not all necessarily associated with other prehistoric monuments though this appears to have been the case at Millockstown and Cherrywood. There are a number of other settlement/cemetery sites that contained large enclosures (See Gazetteer). No approximate dates were provided for the enclosures though they are likely to belong to roughly the same period.

Undated Enclosed Cemeteries

The EMAP survey also identified a number of enclosed undated cemeteries that could possibly date to the early medieval period.

Rescue excavations were undertaken at Sand Pit Grove, Caherabbey Lower, Co. Tipperary when a number of burials were uncovered during quarrying activity along a gravel ridge beside the River Suir. Six burials orientated east-west and buried within unlined graves were discovered during the excavation. The dates of the burials are uncertain though their location along a gravel ridge might suggest an early date. Cartographic evidence suggested that the cemetery was situated within an enclosure of undetermined size (Mary Cahill, 1988, Excavations Bulletin).

Excavations at Murphystown, Co. Dublin in advance of the M50 South-eastern Motorway in 2002 revealed a possible enclosed cemetery of uncertain date (Valerie J. Keeley 2002, Excavations Bulletin- 02E0153). The site was situated near a stream. Seven wholly or partially intact skeletons were found along with 13 disarticulated skeletons. The burials were extended east-west inhumations with no grave goods. One burial was however orientated north-east/south-west. A possible enclosure was represented by a shallow depression in the landscape (Breen, 2002, Excavations Bulletin- 02E0153).

Excavations at Rathmiles, Co. Laois in advance of the construction of a golf course in 2001 revealed a sub-circular enclosure containing a cemetery. The east-west inhumations were uncovered. No associated settlement evidence was uncovered. The date of these burials is uncertain (Delany, 2001, Excavations Bulletin- 01E1100). The dates of these enclosed cemeteries are uncertain though the potential remains that they could be early medieval in date.

Early medieval unenclosed cemeteries

Excavations in recent years have also revealed a number of *apparently* unenclosed cemeteries that date to the early medieval period. In many cases, the site appears, from Excavations Bulletin reports, to have only been partially excavated leaving open the possibility that some form of enclosure may have existed in the past (or still exists on the site) that was not identified in the fieldwork project. The origins and character of these unenclosed cemeteries have yet to be established. It is not yet clear who was buried in these sites and whether they represent a different cemetery site type to 'settlement/cemeteries' and ecclesiastical cemeteries. Some of these sites have revealed a locational preference for gravel

ridges and prominent topographical features. It also appears that a number of these sites may also have originated in the late Iron Age/early medieval period.

The evidence: unenclosed cemeteries

Excavations at Betaghstown (The Anchorage) by James Eogan (Rosanne Meenan 1998 & 1999 Excavations Bulletin- 98E0072) in advance of a development revealed an unenclosed burial-ground of approximately 60 burials situated approximately 500m from a small transitional Iron Age/early medieval burial-ground uncovered by Kelly in 1977 (Kelly, 1987- See above). The site appears to have been fully excavated by Eogan but no enclosure appears to have been discovered. The majority of the burials were set into stone-lined pits although a few were found within lintel and slab-lined graves. Two burials were crouched. No accompanying settlement or ecclesiastical evidence appears to have been uncovered.

Excavations at Mount Gamble, Miltonsfields, Cobbe's Hill, Co. Dublin revealed an unenclosed cemetery (and this site was fully excavated) just southeast of the early ecclesiastical site at Swords, Co. Dublin. The excavations revealed 287 burials, the vast majority set in simple unprotected graves though some were also found to incorporate ear-muffs (O'Donovan 2002, Excavations Bulletin; Frazer 2003, Excavations Bulletin). The cemetery dated from the 6-12th century and no accompanying settlement evidence appears to have been uncovered. This excavation seems to indicate that this was the burial ground of a community across time, with the burial of a few individuals every few years, as might be expected in the normal mortality rates of a rural community (Edmond O'Donovan, pers comm.).

Excavations at Kilshane, north Co. Dublin (Gowen 1988, Excavations Bulletin) revealed a further unenclosed cemetery containing 123 burials. The inhumations appear to have been interred 3-4 deep in unprotected graves although about a dozen did contain ear-muffs on either side of the skulls. Some burials had grave goods in the form of knives and there was also burnt grain. Consequently, O'Brien (1993, 98) has suggested that there were some early Anglo-Saxon influences at the site. No date was provided for this site though it is quite possible that it was in use by the 6/7th century A.D. and continued into the early medieval period.

Excavations were undertaken at Peterstown, Trim, Co. Meath in advanced of a road development in 1997 (Murphy 1997, Excavations Bulletin- 97E0389). Four unprotected east-west inhumations were excavated. One returned a radiocarbon date of 1594±37 years BP (cal. AD 414-532). The site may represent a small isolated transitional Iron Age/early medieval cemetery. It is not clear if the whole site was fully excavated.

The evidence: unenclosed cemeteries located along gravel ridges/mounds

A large number of burials were recovered from beneath and adjacent to two burial mounds at Ballysadare, Co. Sligo in advance of N4 Ballysadare-Collooney Bypass Road (Opie 1995; 1996). Excavations revealed a burial with an associated pillow-stone, a large number of east-west unprotected inhumation burials, two lintel graves as well as two furnished inhumations apparently containing a ribbon torque and a bronze ring. Though no dates were available at that time, it is possible that this cemetery was in use from the late Iron Age through the early medieval period.

Excavations at Ardnagross, Co. Westmeath in advance of a quarry extension along a gravel ridge in 1995 revealed an unenclosed cemetery dating from the mid 6th-early 9th century A.D (James Eogan 1995, Excavations Bulletin). The small cemetery consisted of two rows of burials, 6 in the eastern row and 8 in the western. Approximately 20 burials were discovered. The majority were extended inhumations. One was interred in a prone position and others were in flexed positions (with a radiocarbon date of AD 548-820; Elizabeth O'Brien pers comm.). One definite stone-lined burial was discovered while another contained ear-muffs. Further burials had been revealed during initial quarrying activity so it is likely that the

cemetery is somewhat greater. A bronze annular ring was also excavated from one grave. The cemetery then appears to go from an Iron Age/early medieval transitional period to well into the early Middles Ages, with burials taking place into the 9th century A.D.

Excavations at Boolies Little, Co. Meath by (David Sweetman 1982) revealed the remains of a souterrain and a small along a pronounced ridge of land. The earliest burials amounted to 16 internments and were contained in shallow stone-lined graves dug into stratified boulder clay. Some of them had secondary burials inserted directly above them but all predated the construction of the souterrain. Associated finds included a polished bone pin and iron plough sock. Post medieval burials were found above this early medieval cemetery.

A potential early medieval cemetery was excavated at Sarsfieldstown, Co. Meath (Mary Deevy 1999, Excavations Bulletin). At least 8 east-west unprotected inhumations with no associated grave-goods were excavated beneath a gravel mound. A preliminary analysis of the skeletons by Laureen Buckley suggested that they are very likely to be pre-medieval in date (Mary Deevy 1999, Excavations Bulletin). This suggests that they may date to the early medieval period.

Other potentially early unenclosed early medieval cemeteries include Cushinstown, Co. Meath and Ahena, Co. Mayo. At least 14 lintel graves (usually dated to after the seventh century AD) were uncovered at Cushinstown, Co. Meath (Victor Buckley, 2000, Excavations Bulletin). The site is located 200m from a medieval church so the possibility remains that they form part of an ecclesiastical burial-ground. This is strengthened by the presence of lintel burials that O'Brien (2003, 67) has noted tend to be discovered in ecclesiastical contexts and date from the 7/8th century A.D. It has been tentatively classified as unenclosed.

Excavations at Ahena, Co. Mayo revealed nine east-west inhumations during gravel quarrying (Murphy 1998, Excavations Bulletin). The dates of these burials are uncertain.

Burial across the early medieval period

It is likely that the cemeteries at Kilshane and Betaghstown were in use from the 6/7th century-8/9th century A.D. Although no dates are available, a similar phase of activity could be suggested for Boolies Little. This site appears to have originally been used as a cemetery before it was succeeded by a possible phase of occupation attested by the souterrain. Only a part of the site was excavated so it is possible that further cemeteries and habitation evidence could await discovery. It is possible that some of these burials may have interred at the site from 6-10th century as souterrains are usually found to date to the 9/10/11th century (Clinton 2001).

The cemetery at Ardnagross was radiocarbon dated to the mid 6th-early 9th century while that at Ballysadare is likely to have spanned this period at the very least due to the size of the cemetery.

Excavations at Mount Gamble revealed an unenclosed cemetery dating from 6-12th century A.D. The site at Sarsfieldstown can only be broadly dated to the early medieval period while that Peterstown is rooted in the transitional Iron Age/early medieval period. The evidence suggests that these unenclosed cemeteries are likely to have originated in the transitional Iron Age/early medieval period and have continued well into the early medieval period. These sites appear to have revealed no definite evidence for associated settlement sites, except possibly at Boolies Little though both the cemetery and habitation evidence here do not appear to have been contemporary with each other. The majority of these sites are then likely to have been in use from the 5/6th century-8/9th century with the exception of Mount Gamble and possibly Ballysadare that continued to be used up to the end of the early medieval period.

Isolated Unenclosed Burials

O'Brien (1984) has further documented the discovery of a number of isolated slab-lined cists across the country from time to time, particularly in the counties of Kerry, Mayo, Meath, Offaly, Cork, Galway, Waterford, Wicklow and Dublin. A number of these isolated slab-lined burials such as Belladooan, Co. Mayo (Morris 1932), Dooey, Donegal (Duignan 1945; Ó Ríordáin and Rynne 1961), Aghhalahard, Cong slab-lined grave (Raftery & Moore 1944) and Killaree and Sheastown, Co. Kilkenny are likely to date to around the 5th/6th/7thcenturies A.D. based on the form of their graves and on occasional grave-goods that might suggest an early Anglo-Saxon association (O'Brien 1993, 97). Other potentially early stone/slab-lined graves have been found at Ballybunion, Co. Kerry (O'Floinn, 1987, Excavations Bulletin), Ballysimon, Co. Limerick (Collins, 2001, Excavations Bulletin) and Margaretstown & Baltrasna, Co. Dublin (Stout 1991, Excavations Bulletin).

Isolated lintel graves have been excavated at Dromkeen East, Co. Kerry (Bennett, 1985 Excavations Bulletin), Drumbaragh, Co. Meath (Cahill 1988, Excavations Bulletin), Carrowsteelagh, Co. Mayo (Cahill 1990, Excavations Bulletin) and The Fisherman's Grave, Lackan, Co. Sligo (Buckley 1991 Excavations Bulletin). O'Brien (2003, 67) has suggested that lintel graves originally evolved from 5/6th century stone/slab-lined burials and were a significant form of burial rite, mostly found in ecclesiastical contexts, from the 7/8th century A.D. These sites were reported as isolated lintel burials in the excavations bulletin, so it is always possible that some could represent solitary graves of Christians buried away from ecclesiastical contexts in the early medieval period. However, it is clear that the great majority of these excavations did not examine the area around the reported disturbance which revealed the stone/slab-lined or lintel burial so it is more likely that they formed part of a larger early medieval cemetery.

Burial with the ancestral dead? Interpreting Iron Age/early medieval transition and early medieval burial practices

Burials in the landscape: natural landmarks and *ferta* cemeteries: hill-tops, gravel ridges and waterways

It is interesting that some transitional Iron Age/early medieval cemeteries have a propensity to be located on hill-tops, gravel ridges and close to important boundary markers. Hill-tops and low rises above the landscape appear to have been significant locations for Iron Age/early medieval transitional inhumation cemeteries as is indicated at Kiltullagh, Co. Roscommon; Kilgowan, Co. Kildare; Corbally, Co. Kildare; Raystown, Co. Meath; Johnstown, Co. Meath; Colp West, Co. Meath; Claristown, Co. Meath; Westreave, Co. Dublin and Knoxspark, Co. Sligo. Prominent gravel ridges also appear to have been significant with a number of sites located on such places, including Ardnagross, Co. Westmeath; Ballysadare, Co. Sligo and Boolies Little, Co. Meath. Waterways may have also been another topographical location that was a focus of burials in this period.

O'Brien (1992, 133) has noted that Colp West (*Inber Colpdi*) was located near the mouth of the River Boyne in a mythologically and historically important area. O'Brien (1997, excavations bulletin) also noted that Ballymacaward, Co. Donegal was located on the northern bank of the River Erne which was an important boundary in the early historic period. Eamonn Kelly has recently pointed out that many Iron Age bog bodies have a tendency to be found along tribal and baronial boundaries. The antiquity of these divisions is still a matter of debate although it is worth pointing out that both Kiltullagh and Johnstown straddle the boundaries between the counties – and presumably local baronies - of Roscommon/Mayo and Meath/Kildare respectively. It is evident then that these potentially pagan Iron Age/early medieval *ferta* cemeteries displayed an interest towards pronounced topographical points of the landscape such as hill-tops, ridges and waterways which were likely operated as important boundaries that were imbued with significant mythological and ancestral meaning.

Who was buried? The burial rite

It is then clear that pre-existing funerary monuments were an important determining factor in the location of burial sites from the 5-7th century A.D. O'Brien (2003, 66) has noted that east-west extended inhumation skeletons containing no grave-goods and enclosed within slab-lined cists was an important burial rite from the 5-7th century A.D. She notes that these types of burials are typically found inserted into or around these pre-existing funerary monuments. Slab-lined cist burials have been excavated at a number of the above sites including Betaghstown, Claristown 2, Boolies Little and Knowth, Co. Meath, Castle Upton, Co. Antrim, Kiltullagh, Co. Roscommon and Ballymacaward, Co. Donegal among other places. It is evident in some cases that these were often the earliest (i.e. in the historic period, there were Bronze Age and iron Age burials there) burials inserted into prehistoric monuments as was the case at Ballymacaward, where fifth century slab-lined inhumations were later succeeded by unprotected burials dating to around the 7th century A.D.

O'Brien (2003, 67) has suggested that high-ranking, probably Christian, individuals, were interred in and around these prehistoric monuments among (their putative) pagan ancestors in this period. That the amount of slab-lined cist burials excavated at these sites and dating to this period is generally low in number supports this hypothesis. This act undoubtedly served to reinforce the link between themselves and the indigenous ancestors to create a claim of sovereignty to the land. One good example was at Ballykeel South, Co. Clare, where a stone-lined cist dating to the fifth century was interred close to a Standing Stone.

The archaeological record also confirms the presence of east-west extended inhumation burials containing no grave-goods and dating to this period. The earliest burials at Johnstown, Co. Meath were unlined as were a number of others at Betaghstown, Co. Meath (Eamonn Kelly, 1977-79, Excavations Bulletin- E814) and Cooleeshalmore, Co. Kilkenny (Neary, 2003) among other places. Other sites containing unprotected burials that may date to this period include Maddens Hill, Kiltale, Co. Meath, Ballinlough, Co. Laois (O'Brien 1993, 133) and Bellinstown, Co. Meath (Lynch, 2002, excavations Bulletin).

It is evident then that this type of burial (i.e. unlined graves) was largely contemporary with the stone/slab-lined cist burial. In some cases, however, as at Ballymacaward, Co. Donegal, fifth century slab-lined inhumations were later succeeded by unprotected burials dating to around the 7th century A.D. (Elizabeth O'Brien 1997 & 1998, Excavations Bulletin- 97E0154). They cannot however be used as a realistic indicator for the burial of a less high-status individual. The location of the burial-place of the general populace in this period is still unclear.

Early medieval Anglo-Saxon burials and contacts

O'Brien (1993, 2003) has also highlighted some strong similarities between some of the Irish burial archaeological record and those of the Anglo-Saxons in England around the 7th century A.D. She has documented the historical evidence for contacts between the two peoples in the form of raids, religious studies in Ireland and Irish missionary activity. It is evident that a number of accounts refer to Anglo-Saxon ecclesiastics leaving to study among the Irish, as was the case with a certain Egbert who together with Aethelhun and other figures resided at the Irish monastery of Rath Melsigi, identified today as Clonmelsh, Co. Carlow in the mid 7th century (O'Brien 1993, 94). A number of other ecclesiastical sites such as Glendalough, Co. Wicklow and Killegar (Cell Adgair), Co. Wicklow have also revealed possible Anglo-Saxon connections while 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. Finally, O'Brien (1993, 95) has also noted that the Anglo-Saxon King, Egfrith, lead an attack on the district of Brega (Meath) in the territory of the Southern Uí Neill in A.D. 685 when a number of captives were taken.

It is well known that contacts with both Gaul/Merovingian Francia and Anglo-Saxon England was responsible for a cross-fertilization of artistic, iconographic and decorative ideas which

combined Celtic, Germanic and Romanic elements from the 7/8th centuries A.D. It is possible then that we must also consider another form of archaeological evidence in the form of burials and grave-goods, to further understand the extent of Anglo-Saxon influence and contacts in Ireland in this period.

O'Brien (1992) has noted that the dominant burial rite from the fourth century A.D. to the present is that of east-west extended supine inhumations, with no grave-goods either in unprotected dug graves, graves outlined with stones or lined with slabs, with or without covering stones. She has noted then that clothed burials or those accompanied by grave-goods, ear-muffs or other features such as wooden biers should be subjected to closer scrutiny. O'Brien (1993, 96 & 97) has noted a crouched clothed burial at Betaghstown, Co. Meath that contained a number of grave-goods including penannular omega types brooches. These brooches were worn in a fashion – one on each shoulder – as in Anglo-Saxon dress, implying that the burial is in the Anglo-Saxon tradition. She has further documented further possible enigmatic burials often containing grave-goods with Anglo-Saxon associations at a ringfort at Raheenamadra, Co. Limerick (Stenberger 1966); Aghalahard, Cong, Co. Mayo (Raftery & Moore 1944, 171-2); Killaree, Co. Kilkenny and Sheastown, Co. Kilkenny and inside the cemeteries at Dooey Co. Donegal (O'Riordain & Rynne 1961, 58-64) and Westreave and Kilshane, Co. Dublin. She has also noted that 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. A later possible Anglo-Saxon burial was also excavated at Mayfield, Co. Waterford in advance of the Bord Gáis Cork-Dublin Pipeline 1986 (O'Donnell, 1986 excavations bulletin). A small stone-lined burial pit was excavated which contained a small amount of cremated bone, a bronze strap-tag comparable to similar 9th century Anglo-Saxon types 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 even Viking along the bank of the River Suir in county Waterford.

Finally, O'Brien (1993 & 2003) has suggested that a number of very rare penannular burial enclosures such as Westreave, Colp West and Greenhills could attest to further early Anglo-Saxon influences in places in Ireland that are known to have had historical contacts with these people. While, it is clear that one could argue that this type of monument simply represents a variation of a ring-ditch with Irish prehistoric antecedents, it is nevertheless worth bearing in mind, particularly as the great majority of these sites have been excavated in eastern counties like Meath – precisely where these Anglo-Saxon connections are strong. This is a subject of interest, whatever the agents behind such burial practices; whether they be the ongoing cultural contacts and exchange of ideas and practices between Ireland and Britain or actual Saxon immigrants into Ireland.

Early Medieval Settlement/Cemetery Sites

Introduction

In recent years, there has emerged a growing body of evidence for 'settlement/cemetery sites' (often alternatively called cemetery/settlements) which are neither exclusively ecclesiastical or secular in character. Early medieval settlement/cemeteries include Millockstown, Co. Louth (Manning 1986); Westreave, Co. Dublin (1988); Mount Offaly, Co. Dublin (Conway 1998); Cherrywood, Co. Dublin (O'Neill 1999); Balriggan, Co. Louth (Delaney and Roycroft 2003); Johnstown, Co. Meath (Clarke 2002; Carlin, Clarke and Walsh 2008; Clarke and Carlin 2008); Dunmisk Fort, Co. Tyrone (Henderson and Ivens 1992), Dooey, Co. Donegal (A. Ó Ríordáin and Rynne, 1961); Corbally, Co. Kildare (Tobin 2002; Coyne 2003); , Carrowkeel, Co. Galway (O'Sullivan 2006); Clongowan II, Co. Meath (Baker 2007); Site M Knowth, Co. Meath (Stout and Stout 2008); Ninch, Co. Meath (McConway Excav. Bulletin), Colp West, Co. Meath (Gowen 1989; O'Brien 1992, 133), Gracedieu (Gowen 1989);

Augherskea, Co. Meath (Baker 2002:1422), Parknahown, Co. Laois (O'Neill 2006) and Raystown, Co. Meath (Matt Seaver pers comm.). The excavation reports for a number of these sites have been fully published; Knowth site M, Co. Meath; Millockstown, Co. Louth and Johnstown, Co. Meath (Clarke and Carlin 2008).

Excavated early medieval settlement/cemeteries 1930-2008

A range of sites, including those above and others, could now potentially be categorised as 'settlement/cemeteries' (see Table 5:1 below). In general these sites comprise of a large, rounded or oval enclosure, but generally, not circular that contains evidence of burials but also of occupation, or at least non-funerary activity. There are often a series of enclosures, some concentric to each other and perhaps representing expansion of the settlement as in the case of Knowth, Site M (Stout and Stout 2008). In other instances, such as Johnstown, Co. Meath the secondary ditch cut the earlier one and thus replaced the earlier ditch without significantly expanding the site's area (Clarke 2002, 14).

Table 5:1 Excavated early medieval settlement/cemeteries 1930-2008

Site name	County	Burial evidence	Ref
Balriggan	Louth	Enclosure, burials, post-structures and second enclosure	Delaney 2003:1226, Delaney and Roycroft 2003
Castlefarm	Meath	Early medieval settlement(?) enclosure with associated burials	O'Connell 2006, 19-21. Seanda
Carrowkeel	Galway	Early medieval enclosure with 128 burials (minimum), radiocarbon dates, 8th-11th century AD	J. O'Sullivan, 2006; J. O'Sullivan 2007
Cherrywood	Dublin	Iron Age enclosure, used for early medieval burials and then re-used as 'Norse' settlement	O'Neill 1998:127; O'Neill 1999:169.
Colp West	Meath	Pennanular burial enclosure, with outer enclosure, burials	O'Brien 1999; O'Brien 2003; Gowen 1988)
Corbally	Kildare		Tobin 2002:0899; 2002:0900; 2003
Coldwinters	Dublin		Opie 2001: 244
Corkagh	Dublin		Carroll 2001:340
Faughart Lower	Louth	Multivalllate enclosure, burial ground, souterrains and settlement	Stout and Stout (2008, 165-6)
Gracedieu	Dublin		Gowen 1988:16; Conway 1999: 248
Gneevebeg	Westmeath		Wallace 2002:1864
Knoxspark	Sligo	Iron Age/early medieval burial ground in enclosed promontory	Mount 2004:206
Harristown	Louth		Murphy 1994:181
Johnstown I	Meath	Iron Age/early medieval burials (4th-7th cent. AD) under mound, followed by early medieval burials, with enclosure (5th-7th cent. AD) with associated settlement and ironworking	Clarke 2002:1470;Clarke 2002, 13-15; McCormick and Murray 2007, 243-245.
Loughboy	Kilkenny		Cotter 1998:392
Marlinstown	Westmeath	'Ringfort' with burials in ditches and outside enclosure	Keeley 1990:113; Keeley 1991:126
Mount Offaly	Dublin	Large cemetery of 1553	Conway 1998:124

Site name	County	Burial evidence	Ref
		burials, multivallate enclosure, dated to 5th-12th century; metalworking activity	
Ninch (Laytown)	Meath	Multivallate settlement, cemetery with souterrains	Eogan 2000:0760; McConway 2001:1007; McConway 2002:1489
Parknahown	Laois	Bivallate enclosure with burial ground, souterrains and settlement	O'Neill 2006, 32 (Seanda) O'Neill 2007, 133-139 NRA Mono
Parkwest	Dublin		Purcell 1999: 246; Purcell 200:299
Raystown	Meath	Multivallate enclosure, with enclosed burial ground, watermills, corn-drying kilns and agricultural settlement	Seaver 2006
Westreave	Dublin	Ring ditch with burials outside	O'Brien 1999, 2003; Gowen 1988)

There is great variation in the archaeology, chronology, organisation and material culture of these sites, but they are all essentially early medieval burial grounds with accompanying settlement evidence, neither of which are explicitly associated with any known ecclesiastical site. It might seem strange to us that people would bury their dead beside them; or more to the point, that they would choose to live beside a burial ground when it might be expected by a superstitious community that spirits and ghosts might pervade the area. It could be suggested that this occurred because only a select number (people of high status, clerics, monks) of the community were allowed to be buried in ecclesiastical sites as the church slowly became established. It might also be suggested that people's sense of ancestry and memory lead them to desire to be buried 'with their own people'. However, it is also possible that early medieval communities preferred to bury their dead 'on the land', close to crops, animals and the homestead, thus reflecting their strong sense of connection to places associated with daily life, work and practice. There is anthropological evidence (from early Christian Greece, for example) that rural, farming communities buried their dead beside the agricultural homestead rather than in a nearby church.

O'Brien (1992) had highlighted the probability of such burial sites existing noting that burial in non-ecclesiastical sites was tolerated up until the 8th century. There are numerous references to burials before his taking place in the ancestral burial grounds *ferta* (*ibid*) or what might be termed 'familial burial grounds'. Thereafter, Church legislation required that people be buried in consecrated ground. O'Brien (1999) noted how the early Irish sources indicated that the Irish were reluctant to abandon their ancestral or familial burial grounds. There has been a general tendency to translate this term *ferta* as a 'burial mound' from very scanty historical evidence, but O'Brien noted that Tírechán, in his life of St. Patrick, states that the *ferta* had a 'rounded ditch' (*ibid.,* 133). Charles-Edwards (1993, 260) expanded upon the definition of the term *ferta* believing that it was a 'collective' burial place enclosed by a bank and ditch. Stout and Stout (2008) have recently published their excavation of such a site at Site M, Knowth, Co. Meath. In this publication they review the evidence for such sites, which they refer to as 'secular cemeteries', in northern Leinster. They (*ibid*, 74) publish simplified plans of 16 sites that they believe belong to this group which shows that they are generally of sub-circular plan, containing between one and three enclosures, and ranging greatly in size. These sites do not display most of the criteria outlined by Swan (1983) in his definition of an ecclesiastical site. Stout and Stout (2008) believe that their 'secular cemeteries' are the *ferta* of the early medieval sources. They do not believe, however, that they were settlement sites and (*ibid.,* 78) interpret the animal bones from the site as being the remains of funerary meals associated with feasting during the burial ceremonies.

Already some assumptions about early medieval settlement/cemeteries have emerged that could already be challenged by the known archaeological evidence. There has been a tendency to assume that early medieval settlement/cemetery sites emerge from the Iron Age. Certainly, some of these 'settlement/cemetery' 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. However, a more complete analysis of the radiocarbon dates does not indicate that they spring from very long lived traditions from the Iron Age and that the sense that they are 'ancient family burial grounds' does not stand up when it is noted that they are no older than contemporary church burial grounds (Matt Seaver, pers. comm.). Indeed, after the fifth or sixth century A.D. they also show great variability, and the developmental sequence of individual sites varies dramatically in the scale of burial and settlement and also the longevity of use. It is clear that many of the Late Iron Age/Early Medieval transitional burial sites (see above) 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.

At Knowth Site M, The burial area, consisting of 52 graves, lay within an inner ditched enclosure measuring 40x48m. Two burials dated to AD579-673 and AD 782-989 (2 sigma) (Stout and Stout 2008, 79). This was surrounded by a second ditch which had a diameter of 74x63m and produced a date of AD573-568. In the area between the ditches there was some limited evidence for habitation in the form of 'a compacted surface with embedded pebbles (*Ibid*. 79). The only evidence for a structure comprised four irregular shallow pits that 'could represent the remains of a trapezoidal structure' (*Ibid.*). An outer enclosure, consisting of two banks with intervening ditch, had an overall diameter of 110m. The excavators argue that the enclosures represent a gradual expansion of the site between the seventh and 9th/10th centuries. The site produced evidence of bone working with cinders, possibly representing ironworking, dating to about AD700 (*Ibid.* 76). The excavators noted that the site produced contradictory evidence for 'status'. An imported 7th Anglo-Saxon mount and a perforates sperm whale tooth are interpreted as being indicative of high status while the dominance of oats in the charred grain assemblage is interpreted as being of low status (*Ibid.* 80-1). The excavators noted that cultivation occurred within the inner enclosure during the period it was in use as a burial ground. The furrows cut, and were cut by, burials. Radiocarbon dates of AD548-654 and AD690-886 were provided by two furrows (*Ibid.* 80).

Millockstown, Co. Louth was interpreted by its excavator (Manning 1986, 163) as a sequence of settlements from between the 4th and 8/9th centuries. The first phase, dating to the late Iron Age comprised an oval enclosure, of 60m diameter. The suggested early date for the phase is based on an early pennanular brooch terminal which was found in the site interior, rather than the ditch (*Ibid.* 154-5). The radiocarbon date (AD 240-620 2 sigma) likewise was not from the ditch but from a habitation layer. This phase as then succeeded by a ringfort of 37m diameter. The final phase comprised a large oval enclosure, 40x100m which enclosed a lintel-grave cemetery and contained two souterrains. The lintel grave cemetery was confined to the centre of the site and enclosed by all three enclosures and Manning (1986, 144) admits that there is no direct evidence to associate the cemetery with the largest enclosure. The excavator views the sequence as that of a ringfort being locates on the site of an Iron Age enclosure which during its final phase was transformed into an ecclesiastical site. Stout and Stout (2008, 69-70) re-interpret the site as being a 'secular cemetery' evolving in the same way as Site M, Knowth. There was no dating evidence for the 'ringfort' stage at Millockstown and the author's interpretation was based on the circularity of the ditch, in contrast to the other, larger, enclosures. There is also no direct dating evidence for the Phase 1 ditch. It may well be that it is the earliest enclosure, contemporary with the cemetery and the enclosures developed outwardly as at Site M, Knowth.

Dunmisk, Co. Tyrone, may also be a settlement cemetery (Ivens 1989). The enclosure on this hilltop site was created by the levelling and scarping of a drumlin summit, producing a heart-

shaped enclosure with a maximum diameter of about 50m. The eastern part of the site comprised a cemetery of at least 535 graves, and a rectangular structure 7x3m with a roughly e-w orientation that may have been a church. The structure, however, has been destroyed by grave digging. Ivens notes that the greatest concentration of burials, and some of the most elaborate were located immediately east of the building (*Ibis.* 61). Elaborate burials were also found immediately east of the church on High Island, C. Galway (White Marshall and Rourke 2000,104) so it is likely that the structure is church. If this is the case, the site is clearly not a 'settlement cemetery'. The western part of the site provided evidence for intensive metalwork and glassmaking.

There is huge variation within the type. Stout and Stout (2008, 74) published plans of sixteen sites that they considered to be of this type and they range from sites with enclosures of diameters of nearly 100m such as Knowth, Site M, Co., Ninch, and Balriggan, Co. Meath to sites such as Westereave, Co. Dublin where the enclosure has a diameter of only 25m. In general the sites range from 50m - 70m, similar in size to many non-circular enclosures such as Killickaweeny, Co. Kildare (Walsh and Harrsion 2003, 34-6) and Ballyconneely, Co. Clare (Breen 200: 047). Ecclesiastical sites in contrast typically measure on average between 90m and 120m and contain one enclosing element (Swan 1983, 274) though there are examples present that measure from 140-400m in size. The average size of these enclosures is therefore generally a good deal less than that of ecclesiastical sites.

Some, as in the case Knowth, Site M, seem to show a chronological progression of increasingly sized enclosures. At Faughart Lower, Co. Louth. The first enclosure had a diameter of 29m, followed by an enclosure of 40m and finally by an enclosure of 55m (Stout and Stout 2008, 165). Balriggan consists of an inner enclosure of *c.*50 diameter and an outer enclosure ditch of 80x90m (*Ibid.* 165; Delaney and Roycroft 2003, 17-18) although it is not clear if this represents chronological expansion. The site certainly underwent periodic re-construction as the inner ditch had been re-cut to make it deeper and wider (*Ibid.* 17). Castlefarm, C. Meath (O'Connell 2006, 19-21 Seanda) displayed concentric ditches with a secondary annex added to the outer enclosure.

The burial areas were generally located within the inner enclosure or was confined within the single enclosure if only one existed. Stout and Stout (2008, 74) comparative plane show that the burial areas at Millockstown, Co. Louth Knowth, Site M (Stout and Stout, 74) an Balriggan, Co. Louth are all within the inner enclosure, but generally not central within it. At Ninch, Co. Meath and Cherrywood, Co. Dublin, the burial area is within the single enclosure (*Ibid.*). In some instances, such as Loughinstown, Co. Dublin, however, the burial area extends across the enclosure ditches, although in that instance was constrained by the third, outer, ditch.

The number of burials present varied greatly. Mount Offaly, Co. Dublin produced at least 1,500 burials (Conway 1998:124) while Cherrywood, in the same county produced only six, although the burial area was not completely excavated (Stout and Stout 163, 163). Other sites produced the following numbers of burials: Butterfield, Co. Dublin, 200+; Cherrywood, Co. Dublin 38, Gracedieu, Co. Dublin, 58; Oldtown, Co. Dublin, 120; Balriggan, Co. Lout, 47; Faughart Lower, Co. Louth, 772; Johnstown, Co. Meath, 346; Raystown, Co. Meath 133 (Stout and Stout 2008, 162-169); Parknahown, Co. Laois, 472 (O'Neill 2007, 137). The graves tended to consist of a mixture of males and females, mature, immature and infants.

The burials tended to occur in discrete areas within the settlements. In some cases the burial areas were confined within enclosures. At Raystown, Co. Meath, the burials were for the most part confined within two concentric enclosures, but some were inserted in to the ditches and some were located outside the enclosures (Seaver 2005, 10). At Parknahowen, Co. Laois, the burials were enclosed within an internal enclosure located next to the ditch of the main enclosure. The cemetery ditch was much less substantial than the outer ditch and unlike the Raytown examples was rectangular in shape (O'Neill 2007, 135-138). In other sites the

burials have less formal, if any, boundaries. There was no formal boundary, for instance, to cemetery in the enclosure at Carrowkeel, Co. Galway (O'Sullivan 2007, 90-92).

Chronology

These sites are generally characterised by large enclosures, a mixture of both burial and 'habitation' evidence, and the absence of a church and other typical 'ecclesiastical' features. The dating evidence to date as most been derived from the burial evidence and this may not necessarily coincide with the habitation dating evidence. In some instances burial continues long after settlement ceased. At Johnstown, for instance, the site continued to be used as a *cillín* until relatively recent times (Clarke 2002, 15). It is also likely that burial pre-dated the settlements at some of these sites.

One of the most extensive series of radiocarbon dates are from Raytown, Meath. The earliest burial provided a date of AD260-540 (2 sigma; O'Sullivan and Stanley 2006, 133). Most of the burials can be dated to the 5-7th centuries but there are a few later examples, the latest providing a date of AD700-950; *ibid*.). The settlement evidence, which includes souterrains, kilns and a mill-complex, extends from the 5/6th century until after AD 1000. The earliest date is derived from cereal from a kiln (AD410-560: 2 sigma) with the latest, from the backfill of a mill, providing a date of AD 1020-1170 (2 sigma: *Ibid* 132-134). At that site burial decline rapidly from the 8th century which probably coincides with the transfer of burial to consecrated ecclesiastic burial grounds. This pattern, however, is not universal. At Carrowkeel, Co. Galway the burials only begin in the eighth century and continue until the later medieval period. The earliest burial provided a date of AD 667-861 (2 sigma) with the latest providing a date of AD1400-1477 (O'Sullivan and Stanley 2007, 155-167). The majority are of 8th-11th century date. It is interesting that the three latest burials (AD1400-1477; 1284-1396;1169-1269:- 2sigma) are all foetuses suggesting that the site was beginning to develop into a *cillín* at this stage. There are presently no radiocarbon dates for the settlement on the site.

The dates from Johnstown, Co. Meath were provided by Beta Analytic and therefore tend to have a much larger error date than those from Raystown and Carrowkeel which were provided by different radiocarbon laboratories. The earliest date is of AD 370-640 with the latest being dated to AD 1500-665 (both 2 sigma: O'Sullivan and Stanley 2005, 151-152. The majority seem to date between the 7th and 11th century. In this instance there are no published dates for the settlement of the site. At Parknahowen, Co. Laois, a date of AD 420-640 (2-sigma) was obtained from the main enclosure ditch but to date no date are available for the burials (O'Neill 2007, 135). It is possible that burial on some of these sites may have been episodic rather than continuous. At Mount Offaly, Co. Dublin, for instance, the excavator noted that "During its last two stages the site was possible no longer used as a cemetery, and during these periods cobbled surfaces were constructed ... before it reverted back to a burial ground (Conway 1999, 34). At Site M Knowth, Co. Meath, the use of the site for agricultural cultivation (Stout and Stout 2008, 80) might imply that the site had temporarily ceased to function as a burial ground.

The suggestion has already been made that these burials were the equivalent of the *ferta* burial grounds mentioned in the texts. These are regarded as tradition 'ancestral' burial grounds. Ownership of the deceased remained with the living, unlike ecclesiastical consecrated grounds where the church took over ownership of the body and 'curated' until that anticipated 'second coming' and resurrection of the dead. However, as the radiocarbon dates above show, these 'ancestral' burial grounds do not, however, seem to have their origin in the pre-Christian era. There are no burials that can be unequivocally dated before the fifth century and there is little evidence for Iron Age ring ditch type burial monuments associated with these enclosures. Stout and Stout's (2008, 169) statement that 'burials within the innermost enclosure dated to between 260AD and 990AD' at Raystown is a misleading

misrepresentation of the radiocarbon-dating evidence.   The evidence suggests that these 'cemetery settlements' are a fully Christian phenomenon.

Settlement evidence

The settlement evidence in 'cemetery settlements' for the for the most part comprises, artefacts, food refuse, industrial material and activity associated with the processing for crops. Evidence for houses is limited but souterrain frequently occur. The low incidence of house remains may be attributable to the fact that most of the sites, especially, those discovered during road buildings, tend to be plough-truncates which would have removed such evidence. It is 'negative feature' such as ditches, pits, souterrains, grain drying kilns, and burials that have tended to survive. Stout and Stout (2008, 76) suggested that the actual settlement evidence for these sites was rather limited hence their choice of the term 'secular cemeteries' for the sites. They saw them as burial and industrial sites suggesting that "the primary function of the sites under discussion was burial but also other dirty and dangerous pursuits took place, like iron smelting and corn working' (*Ibid.* 77). This implies a Roman-like pagan attitude to the dead, but without the desire to celebrate remembrance. The dead were shunned and kept away from the living, outside the walls of the town. There is certainly some evidence that this was the case during the early centuries of Christianity in Ireland (McCormick 1997, 63-67) but the association between burial and 'dirty and dangerous pursuits' is more difficult to demonstrate and the abundant evidence for settlement on many of these sites belies a sense of 'shunning the dead'.

Where soil conditions permit, these settlement cemeteries, or secular cemeteries, have tended to produce large quantities of animal bones, e.g. Knowth, site M, Co. Meath (Bonner 2008; Hughes 2008), Raystown, Co. Meath (Seaver 2006, 83), Parknahown, Co. Laois (O'Neill 2007, 136), Johnstown, Co. Meath (McCormick and Murray 2007, 243-5). In the case of Knowth, Site M, Stout and Stout (2008, 78) interpreted the animal bone as 'suggestive of feasting associated with the burial ceremony'. Ceremonial feasting as part of burial ritual is not something that has been considered as part of Christian burial practice before, and the documentary evidence is silent on the matter. The survival of feasting at the graveside, at the time of burial or on anniversaries, was a Roman practice that survived in to 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. The Gaulish church, however, eager to promote the symbolic feast of the mass as being the appropriate method of honouring the dead 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. There is therefore possibility, if not a probability, that such ritualistic activity was occurring in Ireland, especially in the cemeteries under discussion where burial rite may not have been under the control of the church.

Ceremonial activity cannot, however, explain much of the other activity on such sites. The processing of agricultural produce commonly noted on these sites. Raystown, Co. produced five cereal drying kilns and up to eight watermills (Seaver 2006, 83). Corbally, Co. Kildare (Tobin 2002:0899) produced sixteen kilns. Johnstown, Co. Meath, The exceptional nature of this activity can be appreciated when one remembers that cereal drying kilns are virtually absent from excavated ringforts. The evidence for cereal processing was much less intensive at other sites. Only one drying kiln was present at Balriggan, Co. Louth (Delaney and Roycroft 2003, 19) and they were absent from several sites.

There was also extensive evidence for metalwork – particularly ironworking - on some of these sites. Some two tons of waste slag and furnace bottoms were present at Johnstown I, Co. Meath (Clarke 2002, 15). At other sites the evidence was more limited. The evidence form Balriggan implied 'a small-scale industry, perhaps forging/iron tool making, and repair work (Delaney and Roycroft 2003, 19). Marlinstown, Co. Westmeath produced crucible

fragments, vitreous material (Keeley 1990:113; 1991:126). Carrowkeel, Co. Galway seems to have only produced small quantities of slag (O'Sullivan 2007, 91) while there does not appear to have been any evidence for metalwork a Raystown, Co. Meath. In summary, industrial activity and agricultural processing were important on some sites but not on others.

The paucity of structural evidence on these sites has already been mentioned. Raystown, however, produced two souterrains and a possible house (Seaver 2006,80) and what appears to be a round house was present at Parknahown, Co. Laois (O'Neill 2007, 134). It is not clear, however, if the evidence for houses is much greater on the many plough-truncated ringforts that have been excavated in recent years. Most of them have produced a wide range of artefacts that compare favourably with material from ringforts.

Early medieval settlement/cemeteries – some emerging research questions

A classic term used in post-procession archaeology is 'contingency', meaning that every population group experiences historical and cultural processes differently. Some social groups prosper, while others suffer – and every archaeological site has been created by unique circumstances and historical events. Early medieval settlement/cemeteries are different from each other, because they were used by different peoples whose fortunes waxed and waned across centuries. We need to appreciate the complexity and diversity in the chronology and character of these sites that we have dubbed *settlement/cemetery* sites – and be wary of classifying them too dogmatically as a 'type' of archaeological site (and many of the sites we list above have been discussed elsewhere both in this chapter and elsewhere in this report). Notwithstanding this, there is a range of questions that we can begin to ask. Why did some people either bury their dead beside them – or live on a place previously used as a burial ground – or bury their dead in a place previously used as a dwelling place? We should probably be aware that the boundaries between life and death may have been permeable and for a society used to death in all its forms, death may have held the terrors that it does today, where it is pushed to the edge of our experience and our landscapes. However, the question remains; how did people regard these places and why did people bury their dead there, as opposed to in neighbouring ecclesiastical cemeteries (at Raystown, Co. Meath, there are probable early medieval church sites not too far from the site)? This is an interesting archaeological phenomenon and it will repay further investigation (Matt Seaver, is currently pursuing a PhD on this with INSTAR EMAP funding support and his analyses will undoubtedly explore this topic in much great and fruitful detail).

Early medieval ecclesiastical burial grounds – the emerging role of church graveyards in Christian burial practice

Background

Despite the various practices outlined above, Irish society was gradually converted to Christianity from the fifth century AD onwards, and the conversion of aristocracy and the common people shifted burial practices by at least the 7th century AD. Yet it is clear the 'Pagan' practices and beliefs persisted. The writings of ecclesiastical scholars like Tire Chan and Muirchu of Armagh and Adomnán of Iona make clear their antipathy to the continued practice of burial within circular ditched enclosures described as *ferta* cemeteries during the 7th and even 8th century. In other words, people buried their dead in a range of ways. Hughes (1966) originally argued that it was not until the 7th century AD that the church was sufficiently integrated into Irish society to enjoy an influencing role over 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 attempt to increase the status of Christian burial grounds was intimately linked to the growth of the cult of saints.

The importance of long-dead saints that 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 2003, 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 2003, 147).

Ecclesiastical cemeteries appear then to have developed by the seventh century A.D. There is continuing debate about who was buried at these sites; were they the burial places of ecclesiastical and a Christian elite (See Etchingham 1999; Swift 2003) or were ecclesiastical cemeteries more widely used by the general populace? Furthermore, how did the character of ecclesiastical sites change over time and can we examine the differentiation of status in these cemeteries through examining the character of burial cross-slabs? Firstly, we should examine another significant area of research - the origins of these sites and their potential relationship with earlier *ferta* cemeteries.

The origins of Christian ecclesiastical cemeteries and their relationship with earlier ferta cemeteries

The foundation date of ecclesiastical cemeteries is still a matter of debate. It is likely that the majority were formally organized from the seventh century A.D. when the church made a concerted effort to promote this form of burial practice. However, it is clear that ecclesiastical cemeteries existed perhaps from the late fifth century though the forms of these early sites is not yet completely clear.

One of the earliest cemeteries excavated thus far was at Scotch Street on the summit of Armagh hill, Armagh where the possible remains of 'Temple na Ferta' was uncovered (Lynn 1979; McDowell 1985, Excavations Bulletin). A cemetery of upwards of 60 east-west inhumations, one of which was interred within a wooden coffin and marked out by wooden posts, was uncovered. Ó Carragáin (2003) has suggested that the unique coffin demarcated by two wooden posts might represent evidence for a translation of a saint's corporeal remains. A radiocarbon determination for one grave returned a date spanning the mid fifth-mid seventh century (cal. A.D. 430-640) (Edwards 1990, 130). It is instructive to note that Lynn also excavated a Neolithic ring-ditch 11m in diameter at the site in 1979. Taking this into consideration, as well as the obvious place-name element 'Temple na *Ferta*' and the early dates of the cemetery, it is possible that we have evidence here for the Christianisation of a pagan *ferta* cemetery used potentially by ecclesiastics in these early years. Ó Carragáin (2003, 140) has made the suggestion that Armagh, like Canterbury sought to imitate the topography of Rome by establishing St. Patrick's at the summit of Armagh hill and surrounding it with a number of reliquary churches which were extramural in function. Could the foundation of the principal liturgical building of St. Patrick's cathedral at the summit of the hill have also amounted to a conscious break with the prehistoric pagan past from which Temple na *Ferta* could potentially have developed? It is worth noting that the ecclesiastical site at Reefert at Glendalough has been interpreted as meaning *Riogh-Fheart* (Corlett & Medlycott 2000, 161), 'the *ferta* of the kings'? Lorcan Harney (2006) has suggested that Reefert may represent an early high-status or royal cemetery at Glendalough that then evolved into an extramural church when the cathedral was constructed in the main monastic complex at the lower lake (Harney 2006).

Further interesting examples where *potential* continuity between the late Iron Age and the early medieval period can be found at the ecclesiastical sites of Durrow, Co. Offaly and Omey, Co. Galway. Durrow is another example where an early cemetery was located in close proximity to the ecclesiastical site. O'Brien (1992, 133) has noted that a cemetery of extended unprotected inhumations were uncovered within a circular enclosure (25-30m in diameter) c.200m south-east of the ecclesiastical enclosure at Durrow. Further burials were also uncovered 100m northeast of the site. Radiocarbon dates suggest however that burials at Durrow were ninth century AD in date.

An ecclesiastical cemetery located on a potential Late Iron Age/early medieval transitional cemetery that in turn succeeded Bronze Age activity was uncovered on Omey Island (O'Keeffe, 1992 & 1993, Excavations Bulletin). A number of burials were uncovered containing beads of blue and red glass which could, as the author postulated, date 'close to the interface between paganism and Christianity' (O'Keeffe 1993, Excavations Bulletin). The site appears to have developed into an important ecclesiastical site containing a number of *leachta* and a lintel cemetery that continued to be used up to the twelfth century.

Another example of an ecclesiastical cemetery being founded close to a transitional Iron Age/early medieval burial site was excavated at Killtullagh Hill (*Cill Tulach* – 'Church of the burial mound'; tulach being translated as burial mound) that straddles the boundaries of Cos. Roscommon, Mayo and Galway. Early excavations focused on the transitional Iron Age/early medieval cemetery (McCormick 1995; McCormick 1994, Excavations Bulletin; Coombs & Maude 1996, Excavations Bulletin). More recent excavations by Coombs, Maude, Robinson & Gregory (1998, 1999 & 2000, Excavations Bulletin) focused on the adjacent early medieval cemetery that was found to contain a possible early wooden structure beneath the medieval church ruins.

A last, very tentative example of a possible prehistoric monument being re-used in a nearby ecclesiastical context can be found at Derrynaflan monastery, Co. Tipperary. Following the discovery of the famous Derrynaflan hoard, a number of rescue excavations were undertaken by the National Museum first by Mary Cahill and then Raghnaill Ó Floinn and Elizabeth O'Brien to recover missing pieces. A small ring-barrow, c.6m in diameter and 10m to the north of the medieval cemetery was excavated as it was close to the area where the hoard was recovered. Two pits which contained small quantities of charcoal, cremated bone and unburnt animal bone - one inside and one outside the ditch – were interpreted as possible undisturbed burials (Ó Floinn 1985, Excavations Bulletin). The excavations bulletin contained no further information about these burials.

It is evident that some of these examples, particularly those at Durrow (although 9th century in date) and Derrynaflan are based on very tentative evidence. However, they serve to throw up some interesting questions concerning the spatial proximity of *Ferta* cemeteries to formal consecrated ecclesiastical burial-grounds. These examples such as Killtullagh Hill or Armagh suggest that some significant 5th/6th century cemeteries with possible prehistoric origins may have been Christianized by the ecclesiastical authorities in the early medieval period. It could also be suggested that the presence of a ring-barrow adjacent to an ecclesiastical cemetery is just a coincidence and that simple topographical rather than ancestral or historical considerations may have determined the location of some ecclesiastical sites. What is needed then is a systematic examination of the location of both *ferta* and *reilig* cemeteries to understand why some were situated in close proximity to each other while in other cases, a determined and conscious decision was made to found a church in a new site.

Early Medieval Ecclesiastical Cemeteries

It has been argued that 'burial near the bones of the saint' became a substitute for 'burial near the bones of the ancestors' during the 7/8th century A.D. (O'Brien 1992, 136; Ó Carragáin 2003, 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 8th century although there is growing evidence for continuing internment in ancestral *ferta* through the early medieval period as discussed above.

One of the defining characteristics of an ecclesiastical site was an enclosure that served to symbolically demarcate the boundary between the dead and the living; and the holy and unholy ground. Indeed Doherty (1985, 57) has suggested that Irish ecclesiastical sites sought to model themselves upon the idea of the city of refuge (*civitas refugii*) from the bible and by clearly demarcating the settlement into areas of varying sanctity. This resulted in the 'creation

of an idealised form, a schema, which allowed a monastic site to have a holy of holies at the core, around which were areas of sanctuary that decreased in importance the further they were from the centre' (Doherty, 1985, 57). The cemetery and ecclesiastical buildings was situated inside the holiest core of the settlement.

O'Brien (2003, 67) has argued that the standard burial rite by the seventh/eighth century was that of extended east-west inhumation usually but not always necessarily wrapped in a shroud and interred in lintel and/or unprotected dug graves, located in ecclesiastical cemeteries. The lintel grave of the 7th/8th century appears to have evolved from the slab and stone-lined cists which date principally to the 5-7th centuries A.D.

Excavated early medieval ecclesiastical cemeteries 1930-2004

The EMAP survey has identified that a total of 188 ecclesiastical sites with early medieval historical origins were excavated between 1970-2002 and research is ongoing for the period 1930-2004. A further 42 ecclesiastical sites whose early medieval origins could not also be established were also excavated. A total of 80 excavations were undertaken in this period that uncovered burial evidence of varying amounts inside these ecclesiastical sites. With the exception of 3 sites, they all came from ecclesiastical sites with known historical or archaeological early medieval origins. A total of 77 out of 188 (41%) of excavations at definite early medieval ecclesiastical sites then revealed some form of burial evidence comprising disarticulated human bone as well as unprotected and protected dug graves.

Significant Excavated Ecclesiastical Cemeteries

Significant early medieval cemeteries were excavated at St. Brendan's, Ardfert, Co. Kerry (Fionnbarr Moore 1989-92, Excavations Bulletin; Martin Reid 1995) and two undocumented sites at Butterfield, Rathfarnham (Judith Carroll 1997, Excavations Bulletin- 97E0140) and at Dunmisk (Ivens 1988). The last two are believed however to be ecclesiastical in origin.

Large cemeteries were also excavated at Ardree, Co. Kildare (Matthew Seaver 2000, Excavations Bulletin- 00E0156); Skeam West, Co. Cork (Claire Cotter 1990, Excavations Bulletin); Illaunloughan, Co. Kerry (Claire Walsh & Jenny White Marshall 1992-95, Excavations Bulletin- 92E0087); Reask Church (Thomas Fanning 1972-75, Excavations Bulletin), Inishmurray, Co. Sligo (Jerry O'Sullivan 1999, Excavations Bulletin- 99E0381); St. Brendan's, Clonfert, Co. Galway (Claire Walsh & Alan Hayden 2001, Excavations Bulletin- 01E0877); St. Fechin's, Omey Island, Co. Galway (Tadhg O'Keeffe 1992 & 1993, Excavations Bulletin- 92E0053); St. John's Point, Co. Down (Brannon 1980); St. Michael le Pole, Co. Dublin (Margaret Gowen & Kieran Campbell 1980-84, Excavations Bulletin- E217); St. Patrick's Rock, Cashel (Brian Hodkinson 1992 & 1993, Excavations Bulletin-92E0202); St. Peter's Church, Co. Waterford (A.Gittings 1986-1988, Excavations Bulletin- E343; Alan Hayden 1988, Excavations Bulletin- E435 & Maurice Hurley & Ben Murtagh 1989, Excavations Bulletin) and St. Tassach, Raholp, Co. Down (K. Neill 1989, Excavations Bulletin).

Other significant cemeteries have been excavated at Gallen, Co. Offaly (Kendrick 1939); Derry, Co. Down (Waterman 1967) and more recently at a mainly medieval cemetery at Ballykilmore, Co. Westmeath (Channing and Randolph-Quinney 2006, 115), while excavations of human remains have also been carried out on early monastic sites at Clonfad, Co. Westmeath (Stevens 2006) and also at a probable early medieval ecclesiastical enclosure at Killeany, Co. Laois (excavated by Kenny Wiggins of ACS, and recently reported by Niall Kenny 2007).

Ecclesiastical Cemeteries and Burial Rites

Burial rites in ecclesiastical cemeteries began to become more standardised. Unprotected burials comprise the majority of the evidence recovered from ecclesiastical cemeteries. Lintel burials and graves containing ear-muffs and very occasionally pillow-stones were also a feature of many burials. Lintel burials have been dated to the seventh/eighth centuries A.D. or after (O'Brien 67). Ear-muffs are difficult to date because they were used in a variety of

early contexts as illustrated at Cherrywood (John O'Neill 1998, Excavations Bulletin- 98E0526) and as from a number of early medieval levels at the settlement/cemetery at Mount Offaly, Co. Dublin (Malachy Conway 1998, Excavations Bulletin- 98E0035). Earmuffs can therefore be found across the early medieval period. The Excavations Bulletin reports have also revealed a small number of instances of burials in ecclesiastical cemeteries that were stone/slab-lined. It is difficult to be certain if the authors were referring to what were actually lintel burials in these instances so no discussion will take place about this potential evidence until full excavation reports have been consulted.

High status recumbent slabs have also been recovered from a large number of significant early medieval ecclesiastical sites particularly at Clonmacnoise and Gallen, Co. Clare, Iniscealtra, Co. Clare, Glendalough, Co. Wicklow, Nendrum, Co. Down, Inishmurray, Co. Sligo, the Aran Islands, Co. Galway, Kilpeacan and Kilberrihert, Co. Tipperary and Tullylease, Co. Cork (Lionard 1961). A number of high status burials at Iniscealtra and Glendalough were lined with slab that project over the surface. They were then covered with recumbent slabs, many of which were decorated with incised and carved crosses. Small socket-holes were present at the head or foot of the graves and would have held upright crosses (Lionard 1961, 150). These burials tend to date to after the 8th century and may represent the burial places of high status ecclesiastics and secular individuals.

In other words, burial in churchyards is probably the dominant practice after the eighth century – if not early. Undoubtedly, there is huge potential for researching this topic in much more detail. Is it possible to discern patterns in the planning and practice of burial in church graveyards? Are there zones of particular activity? Are there burials of more or less important people? Did graveyards expand and change across time – how do burials relate to other features; such as saint's shrines, churches, entrances, cathedrals, cross and high crosses? Most importantly, is there archaeological evidence for other activities in church graveyards – such as metalworking, fairs and markets, or are these exclusively ritual spaces?

Viking/Norse furnished burial practices

Background

In recent years, Harrison's (2001) and Ó Floinn's (1998) research and publications have enabled new insights into Viking or Norse burials, these being 'defined as those containing individuals, buried according to traditions, which are recognizably Scandinavian in inspiration and which date from the ninth and tenth centuries' (Harrison 2001, 61). Furnished Viking burials have been found across Ireland since the 19th century, although the details recorded by antiquarians can be patchy. 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 early medieval Ireland in contrast, 80% of known Viking/Norse graves have been excavated from within five kilometres of the Dublin city centre. A total of 75% or (c.60% of all Irish graves) were found to have come from the two cemeteries of Kilmainham and Islandbridge. Altogether, it has been suggested that there are approximately 80-90 burials from the Dublin evidence (O'Floinn 1998, 142): a figure that can be slightly increased to due to excavations. This suggests that a country-wide figure maybe somewhere between 90-100 burials.

Viking Burials in Viking/Hiberno-Norse *Dyflin*

The concentration of Viking burials in the area around the Dublin city centre attests to the significance of this site in the 9/10th centuries A.D. The four Viking cemeteries of Kilmainham, Islandbridge, Castleknock to the west of Dublin city and Palace Row on the north side have been discovered since the 19th century (O'Floinn 1998, 132; Harrison 2001, 65). Discoveries

of isolated Viking burials have been made at College Green, Parnell Square, Cork Street, Bride Street and Kildare Street, Dollymount Strand and Donnybrook (Alyesbury Road) from the 19th century.

These have been augmented by excavations at Ship Street Great and Stephen Street, Dublin (Simpson 2002) which revealed a single ninth century Viking male with accompanying grave-goods adjacent to the church of St. Michael le Pole and St. Peters to the south of the subsequent walled Hiberno-Norse town. Four further Viking burials dating to around the 9th century A.D. were discovered during excavations again by Linzi Simpson at South Great George's Street in 2003
 (http://www.mglarc.com/projects/viking_dublin/south_great_georges_street.htm). The site was located just 200m east of Ship Street Great on the south-eastern rim of the Black Pool which the town of Dublin takes its name from.

A further ninth-century Viking furnished grave was finally excavated at Golden Lane, Dublin immediately outside the possible ecclesiastical enclosure at St. Michael le Pole's church in 2005 by Edmond O'Donovan (2005). Simpson has suggested that the combined evidence attests to the burial of high status Viking warriors around the southern edges of the Black Pool to the south of the confluence of the Liffey and Poddle in the ninth century (http://www.mglarc.com/projects/viking_dublin/conclusion.htm). The distribution of 9/10th century Viking burials then suggests the presence of a number of cemeteries in the environs of the subsequent Hiberno-Norse settlement at the confluence of the Liffey and Poddle as well as a number of ninth century high-status Viking warriors spread out along the southern banks of the Blackpool.

Viking/Norse burials in *Dyflinarskiri*

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, while an iron axe-head was found at Barnhall near Leixlip (Lax hlaup or Salmon's Leap) near a possible Viking outlying settlement.

Excavations in 2004 by Icon archaeology near the early medieval ecclesiastical site of Finglas (Fionn Gall) in north Co. Dublin revealed a ninth-century Viking female burial with accompanying Scandinavian oval brooches confirming the presence of Vikings in this area.

Viking/Norse burials in coastal and rural Ireland

Outside this area, further swords have been discovered at Tybroughney, Co. Kilkenny and Murgesty, Co. Tipperary and may represent other furnished Viking burials.

A furnished Viking grave was also discovered at Eyrephort, Co. Galway while two other potential burial sites, dating to the 10th century, were excavated at False Bay, Co. Galway. They were laid 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 ((Gibbon & Kelly 2003; O'Sullivan & Breen 2007, 121).

A further potential Viking burial was discovered near Rinnarraw Cashel along the northwest coast at Kinnegar Strand, Lough Swilly (Comber 2006).

Recent excavations at Woodstown 6 in advance of the N25 Waterford Bypass have revealed a Viking furnished burial immediately outside the ditched enclosure on the south banks of the River Suir.

The greatest concentration of Viking burial evidence outside Dublin can be found along the northeast coast in the counties of Antrim and Down. Here a number of potential burials have been discovered at Leger Hill, Larne & Ballyholme, Co. Antrim and St. John's Point Church, Co. Down. A possible cemetery has also been excavated at Rathlin Island (Harrison 2001, 66).

Viking/Norse Burial Rite

Extended inhumation in unlined graves appears to have been the dominant rite of Viking burial in Ireland. Grave goods are common, and of course in 'furnished burials' are there by definition. It is possible that the cist at Mayfield along the banks of the River Suir could represent the internment of a Viking or as mentioned above, Anglo-Saxon. No skeleton was found within the cist though some cremated bone appears to have been discovered (O'Donnell 1986).

Burials also appear to have been located in flat cemeteries as opposed to mound burials or even Viking boat burials as has been discovered in Scandinavia and the Isles of Scotland. A possible ship burial was however excavated at Ballywillin, Co. Antrim (Edwards 1990, 189) but there is now some certainty due to the discovery of Edwards III coins (O Floinn 1998, 146). A possible re-use of a prehistoric mound for a Viking burial can be found at Croghan Erin, Co. Meath although the evidence is less than clear. A further possible mound burial was once extant at College Green although the monument does appear to conform to any recognizable prehistoric monument examples (Harrison 2001, 74).

A large 'sepulchral mound' was excavated in the 19th century at Donnybrook, Co. Dublin (Hall 1978). It contained a furnished Viking burial accompanied by two other inhumations in a mound that contained 600-700 Christian burials and has been regarded in the past as a burial in a mass grave of victims of Viking raids. O'Brien (1992) in a paper in *Medieval Archaeology* has subsequently re-appraised this evidence and it is likely that it simply represents the burial of a Viking individual in an earlier or contemporary 'Irish' burial ground.

Viking Burial and 'Irish' ecclesiastical Sites

Some Viking/Norse burials appear to display some Christian influences. It is worth noting 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 which throws up interesting ideas about the relationship between these churches and the pagan Viking authorities in this period. It appears that Christianity may have emerged as the dominant religion of the Hiberno-Norse by the 11th century when a number of churches including Christchurch at Dublin and Waterford were founded.

The living and dead in early medieval Ireland: some future research areas

The people of early medieval Ireland – in life and death

The emerging archaeological evidence for burial in early medieval Ireland then is characterised by diversity and variety in both burial rite and context. The traditional description of the entire period as 'Early Christian' is perhaps then a misnomer, in that it fails to reflect the real chronological, cultural and ideological complexity lying behind the older and the newly emerging archaeological data. There is now a large corpus of excavated data that suggests that people were interred in quite a variety of different ways between the 5th-12th centuries A.D, or throughout the early medieval period.

At an early stage, between the 4th-6th centuries AD, there is a sense of people burying their dead in familial or ancestral burial grounds, occasionally involving small annular enclosures,

mounds, standing stones, ring-ditches and other features. These early graves often are slab-lined, but not always. Some burial places become abandoned; others are used over long periods. Some burial places become the focus for settlement, industry and agriculture – the 'settlement/cemeteries' discussed in the settlement chapter above. Some of these have Iron Age origins, but in fact, the radiocarbon dating evidence places most fully within the 'Christian era'. Some of these places remain a focus for burial throughout the early medieval period, from the 6th to the 11th centuries AD, indicating that it is not always a question of 'early' or 'later' practice. Early medieval churches also become a focus for burial practices – but not all the population is buried in them, neither at the early stage, or in the latter (early medieval settlement/cemeteries were being used well after the establishment of ecclesiastical burial grounds). Furthermore, the burial evidence from 'settlement/cemetery' sites, caves, coastal middens as well as known Viking burials all points to a variety of other contexts in which people continued to be buried outside the authority of the church during the early medieval period. There are a number of important implications of this new set of evidence.

EMAP's analysis of the published and unpublished data points towards a complex maelstrom of burial practices in the Iron Age/early medieval transitional period. A few questions can be posed:

- Can we identify regional archaeological variations in the burial practices across the island from the 5-7th centuries A.D.?

- Does the distribution of distinctive burials in such monuments such as the very rare 'pennanular' enclosure and the more common 'annular burial enclosure' attests to Anglo-Saxon influences in eastern Ireland in particular during the 7th century A.D. or do these monuments have a common origin in the Irish prehistoric funerary tradition – or both?

- How long did early *ferta* cemeteries continue to be used through the early medieval period and who were being buried in these places and were they Christian?

- What is the evidence for unenclosed cemeteries in the early medieval period and can they be described as a separate site type?

- What was context in which enclosed 'settlement/cemetery' sites evolved; how did they vary; how were they used and were they used throughout the period?

EMAP's archaeological review also suggests a slow and often complex period of conversion from paganism to Christianity

- What is the evidence for the Christianisation of pagan *ferta* during the emergence of the cult of the relics in the 7/8th centuries A.D?

- How did the character of ecclesiastical cemeteries through the early medieval period; how were they organised and laid out – and what else were they used for?

- Who was being buried in ecclesiastical cemeteries in the early medieval period – and were *they* ever truly representative of all the population?

The increasing corpus of 'Pagan' and Viking burial evidence has also raised issues concerning

- The possible survival of 'Pagan' burial practices in caves and other contexts well into the Christian era

- The location of Viking burials in relation to ecclesiastical sites

- The influence of Christianity in the 9/10th century and the process of conversion of the Hiberno-Norse to Christianity?

It is also clear that the living often lived with the dead in early medieval Ireland – and we need to explore how cemeteries were used as places in the landscape.

- How were all burial places, enclosures, ecclesiastical cemeteries and 'settlement/cemeteries used *across time* – are there chronological patterns or does each site have its own unique history of burial practices?

- Were cemeteries used for other purposes; crafts, industry; ceremony; economic and political actions?

Finally, there is also a subject of enormous importance that has not been touched on here. In these early medieval burials and cemeteries, we as Irish archaeologists have uncovered a potentially very large population of human skeletons from over a thousand years ago, of huge significance for osteology and cultural biology. This is a 'body' of archaeological evidence that could be hugely informative about early medieval population and demographics; patterns of gender, age and childhood mortality; questions of diet and health and the foods they people ate (or didn't during famine); problems of disease and illness – including the endemic plagues and diseases referred to in early medieval historical sources, and how people's lifestyles and physical efforts were reflected in their skeletons. Given the interest in identity and ethnicity, there is also much to be done and clarified in terms of genetics, immigrant populations and the 'origins of the Irish'. Early medieval cemeteries should enable us to explore the very lives and bodies of the peoples of early medieval Ireland.

Chapter 6. Early medieval agriculture and economy

Introduction

Early Medieval Ireland was an overwhelmingly rural landscape, with individual farmsteads (raths and crannogs), fields and routeways through a highly managed agricultural landscape. In this rural landscape, farming was the constant in people's daily lives. Most 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, smoking or salting meats and other foods 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.

Sources of evidence

The evidence for early Irish agriculture is wide ranging, and includes archaeology, palaeoenvironmental studies and early Irish history. A multi-disciplinary approach can help to reconstruct full picture of farming in the landscape. Sources for early Irish agriculture include:

- Early Irish law tracts, typically dated to *c*. A.D. 700 (seventh to eighth century), that provide information on such aspects as land value, social status and cows, labour organisation, aspects of fishing, milling, bee-keeping, etc. They reflect Irish society during the earlier centuries of the period but caution should be exercised when using the laws to interpret the latter half of the Early Medieval period. Doherty (1980, 70) has noted "as a mirror of society from the eighth century onwards ... they become increasingly irrelevant")

- Saint's lives that provide information on general farming practices, on daily diet and provide revealing anecdotes about daily work. The saint's lives, dated from the late-seventh century onwards often provide descriptions of aspects of rural life.

- Annals, originating in the seventh century, with contemporary records by the late-ninth to early-tenth century, tend to be less useful about farming, but they do provide occasional information on climatic events, such as storms, famines, cattle murrains and abundant harvests.

- Landscape archaeological evidence for farming – ringforts, enclosures, field-patterns, kilns and mills – and artefacts including agricultural tools and equipment, such as plough irons, querns and other items; all these indicate the organisation of agricultural labour.

- Plant macrofossil evidence for tending and growth of crops and cultivated fruits, and for identifying the presence of many weed species which can inform us about crop management. They are of limited value in providing evidence about cultivated vegetables.

- Faunal remains that provide evidence for livestock and herd management and the role of cattle, pigs, sheep, goats and other animals in the farming economy; in dairying, beef and pork production and in the exploitation of other animal products (hides, tallow, bone, etc).

- Palynological evidence provides information about the local and regional change in the landscape. There are, however, methodological problems with pollen analysis that can make interpretation of the evidence difficult. Hazel pollen, for instance, invariably exaggerates the cover of the shrub while the level of cereal pollen can be greatly underrepresented (Hall 2000, 437). Some species, such as flax, are almost invisible in the pollen record and modern experiment has shown that flax pollen is uncommon more than a few metres from the edge of cultivation (*ibid*. 348). It is therefore unsurprising that it is infrequently encountered in pollen cores taken from blanket bogs. The plant has, however, a higher profile in charred seed assemblages (Monk 1993, 34).

Living with plant and animals: reconstructing the early medieval environment and agricultural landscape.

The early medieval environment has largely been reconstructed on the basis of pollen evidence, but excavated evidence for animal bone, plant remains, charcoal and proxy indicators (e.g. beetles, insect remains) will undoubtedly be increasingly important as major archaeological excavation reports are published with their specialist analyses. Aspects of the pollen evidence for Early Medieval Ireland have recently been reviewed by Cole and Mitchell (2003), Hall (2000; 2005) and Plunkett (2007). There is general consensus that after a period of agricultural decline, forest clearance and agricultural expansion can be seen over most of the country during the third and fourth centuries A.D. This clearly predates the arrival of Christianity in the fifth century. Occasionally, however, wholesale forest clearance does not occur until much later. Hall *et al.* (1993) noted significant woodland clearance in Co. Antrim in the ninth century indicating that there was still some land available for agricultural reclamation in the latter part of the Early Medieval period. Parkes and Mitchell (2000) suggest similar clearance in Co. Offaly at about A.D. 800 but the profiles were not independently dated. Subsequent work in the same area casts doubts on this interpretation but indicates some decline in the mid-thirteenth century (Hall 2003). Hall (2005) has deliberately sampled areas near monastic settlements to see if the foundation of such monasteries affected farming intensity, especially in crop cultivation. She found no evidence for this - indeed the evidence indicates that monasteries were generally established 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*.). The suggestion that monasteries would have had a higher emphasis on arable farming is not presently supported. Kerr (2007) and McCormick and Murray (2007) have suggested a shift in emphasis from livestock rearing to arable farming from the ninth century onwards, but Hall has not been able to substantiate this. Significant increase in arable farming is only noted from the twelfth or thirteenth centuries, change which can be attributed to the coming of the Anglo-Normans along, perhaps, with the introduction of the mould-board plough.

The pollen evidence for Early Medieval Ireland, apart from the areas of highlands and extensive bog cover, 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. Although there is considerable local variation, significant regional or chronological trends are difficult to identify.

There is obvious conflict between the palynological data and other archaeological evidence concerning agriculture at this time. Faunal evidence indicates a diversification in livestock rearing from the ninth century onwards, characterised primarily by a decline in the importance of cattle (McCormick & Murray 2007). Kerr (2007) 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. Finally, the ninth century is marked by a significant expansion in horizontal mill construction (Brady 2006). 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 & Crothers 2007) and High Island, Co. Galway (Rynne 2000). Indeed 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 & Crothers 2007, 433). The same cannot be said of secular sites.

How is this conflict to be resolved? Hall notes that 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 still detectible even at many hundred metres distance' (2000, 348). This might suggest that the pollen evidence from blanket bog cores, which would be expected to be a considerable distance from the 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. It is extremely desirable, if possible, that pollen samples from the immediate vicinities of secular and monastic settlements are studied so that more valid comparisons can be made.

Crop Cultivation

The early documentary sources provide a wealth of information on the cultivation of cereals, vegetables, fruit and herbs (Kelly 1997, 219-271). The detail provided by these sources is unrivalled anywhere in Europe at this time. This evidence is augmented by macroscopic plant remains from individual. Monk (1986) and Monk *et al.* (1998) have produced overviews of this evidence, with an emphasis on Munster. Most recently Monk (2005) has presented the evidence from several corn drying kilns, although these also include later medieval examples.

The *Bretha Déin Chécht*, an eighth century law tract, lists seven cultivated cereals although not all can be identified with confidence; bread-wheat (*cruithnecht*); rye (*secal*); spelt wheat? (*suillech*); two-rowed barley? (*ibdach*); emmer wheat? (*rúadán*); six-row barley (*éornae*), and oats (*corcae*) (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 will often reflect localised crop-growing capabilities. There are many places in Ireland where it would be extremely difficult to grow wheat. As yet, however, 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) would tend to demonstrate the association between wheat and consumers of high status but wheat remains, although in relatively small quantities, were found in most of the Munster assemblages.

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. Plunkett (2005) noted the same at the early monastery at Illaunloughan, Co. Kerry. 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 again 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 (1997, 251) prefers onion. He suggests that '*borrlus*' refers to leek. Cabbage is also identified and, perhaps, celery. The documentary sources also identify chives. 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.* 257-8) feels may have been confused with mineral remedies. According to the documentary sources the only cultivated fruits consumed were apple and plum (*ibid.* 259-50). Non-food cultivated plants comprise wood, madder and flax (*ibid.* 264-270).

Most of these cultivated plants are not represented in the pollen or macroscopic early medieval plant record. In the survey of the Munster material Monk *et al.* (1996, 68) did not note any cultivated species other than cereals. The gathered wild species comprise hazel nuts, blackberry and very occasionally elder and sloe. 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)). A range of wild edible plants were also present as well as walnut, which must have been imported.

The cultivation of vegetables implied the presence of gardens, which would have to have been fenced to protect the crop from livestock. Since vegetables need a high degree of maintenance in the form of thinning, weeding and continual cropping, it is likely that they were located near the settlements. The small annexes associated with many ringforts and other enclosed settlements are quite likely to be such gardens. Gardens seem to have been especially important in monasteries. Kelly (1997, 251) notes that the gardener is listed as one of the seven officers of the church but there is no mention of gardeners being among the servants employed by a king or lord. The rich organic 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 & McCormick 2005, 76).

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. Additionally Hughes and Hamlin (1977, 108) note the presence of deepened soils at the site of the early monastic foundation at Kilnasaggart, Co. Armagh. They interpreted the artificially heightened ground as being for the provision of an adequate depth of soil for burials, but it seems more likely that this represents a garden soil which may also be of Early Medieval date. A rich garden soil of considerable depth also underlay a spread of shells at the early ecclesiastical site of Mainistir Chiaráin, Inis Mór, Co. Galway (Ní Ghabhláin 1998:259). The fact that such artificial garden soils to date have only been identified on monastic sites emphasizes the importance of gardens in early monasteries. It can also be noted that the Irish Saint Fiachra, who founded a monastery with a fine garden at Breuil near Meaux in France, was later became the patron saint of gardeners in that country (Reeves-Smyth 1999, 108).

Livestock and Dairying

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 one's social status in this rigidly hierarchical society was to a large extent on the number of cows that one had at their disposal. The giving and receiving of cows formed the basis of the contracts 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 were 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. The by-products of dead cattle - i.e. meat, hides, and tallow – appear to be of less importance than live cattle and their by-products. McCormick (1995), for example, argues that ringforts 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 1982), and by the wide range of dairy products consumed during this period (Kelly 1979, 323-30).

In the past the vast quantities of cattle bones from excavations such as Lagore have led to the impression that livestock farming was completely dominated by cattle rearing, 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 the previously thought. The zooarchaeological evidence from Early Medieval Ireland has recently been re-appraised by McCormick and Murray (2007). The evidence shows that there are clear differences between the livestock economy of the sixth-eighth centuries, and that from later centuries. The distribution of livestock from sites dated to *c*. A.D. 600-800 displays a remarkable consistency (*ibid*. Fig 5.1). 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 cattle, in many places, begin to lose their dominant role (*ibid*. Fig 5.3). 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; McCormick & Murray 2007). The great activity in mill building from the end of the eighth century onwards (Bradley 2006) provides complimentary evidence for the expansion in arable farming, 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 ringfort and the emergence of the raised rath in the northern part of the island (Kerr 2007, 98-99). 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). This is likely to have led to the expansion of the souterrain (Clinton 2001; McCormick 2007, 111-12) often located in new, unenclosed settlements.

Early Medieval Farming

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 ringfort 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). 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 ringforts is lower in Leinster than elsewhere in the country. The hypothesis outlined above would suggest the ringfort went out of use earlier in Leinster and may have continued to have been build for considerable periods elsewhere in Ireland.

Livestock also need housing although in general the relative mildness of the Irish climate allowed cattle to be kept outdoors throughout the year. The Saxon cleric Bede noted in the early eighth century that: '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.* 1250 – 'all through the winter [the livestock] find their feed in the open' (Larson 1917). The *Críth Gablach* lists farm buildings as comprising the dwelling house, the cow-house, the pig-sty, the calf-pen and the sheep-pen (Kelly 1997, 365). There is very little definite archaeological evidence for these structures. A lean-to at Ballyknockan, Co. Wicklow was identified as an animal house (Macalister 1943, 147), and an indeterminate number of 'outhouses' were identified from stake holes at Lisnagun, Co. Cork (O'Sullivan *et al*. 1998, 39). These structures, however, tend to be labelled as outhouses because they cannot be identified with human occupation. The presence of high levels of dung beetles – e.g. *Carpelimus bilineatus*, *Aphodius prodromus* and *Cercyon analis* – in a structure at Deer Park Farms, Co. Antrim, however, strongly suggest that this building must either have been used as an animal pen, or a slaughter house (Alison *et al*. 1999).

Monastic and secular farming

The archaebotanical evidence has yet to demonstrate a clear difference in the arable agriculture between the arable economy of ecclesiastical and secular settlements, primarily because published evidence from ecclesiastical sites is so limited. As noted above, the documentary implies an emphasis on arable farming in the hagiographical literature but the archaeological evidence has yet to support this. Grain drying kilns have been identified on several ecclesiastical sites but they have also been note on secular settlements. While the presence of water mills at High Island, Co. Galway, Nendrum, Co. Down and Inishmurray (above) emphasise the importance grain processing at monasteries the evidence from Raystown, Co. Meath (Seaver 2006) indicates that intensive grain processing also occurred on secular sites. That said Raystown is an exception, as far as secular sites. The necessity of building mills on isolated offshore island monasteries, would suggest that in general arable farming and grain processing was more important than in the secular world.

The faunal evidence from monastic settlements in somewhat more extensive and can allow some valid comparisons to be made. The material form Illaunloughan, Co. Kerry and Iona, Argyll indicate a much higher dependence of wild species of meat (Murray et al 2004) than has been notes in secular sites, even those, such as Rathgureen, Co. Galway (Comber 2002, that were located on coastal locations. The evidence is more equivocal on inland sites. While fish and wild fowl exploitation was very limited at Moyne, Co. Mayo (McCormick 1987, 67) the site produced a higher incidence of red deer than at any other medieval settlement n Ireland. In the case of Clonmacnoise, Co. Offaly, the data for bird and fish are as yet unavailable so the level of exploitation is unknown.

The mammal bone evidence from Clonmacnoise has been published, at least in summary form (Soderberg 2004; McCormick and Murray 2007, 209-217) and one aspect of the material was extremely unusual. The age slaughter patter of cattle can 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. Thus, the majority of cattle slaughtered in Viking period Dublin were of older animals (McCormick and Murray 2007, 46) thus indicating that it was a consumer settlement and not producing the beef that it consumed. Clonmacnoise produced a similar age/slaughter pattern indicating the site was provisioned by outside producers and not by their own herds.

Early Medieval Fields and Enclosures

Relict field patterns associated with Early Medieval settlements may also throw further light on the contemporary farming economy. Early laws, such as the *Bretha Comaithchesa*, mention areas around ringforts called *faithche* and *gort faithche* (Richey 1879, 108-9). *Faithche* is generally translated as 'green' or 'infield' and refers to an area in front of the ringfort; whereas *gort faithche* seems to refer to a tilled field within the more general *faithche* (Kelly 1997, 370). The relict curvilinear enclosures would appear to be unsuitable for crop cultivation or even gardening, since cereals and vegetables are almost invariably grown in lines to facilitate soil preparation, planting and maintenance. The location of linear and curvilinear fields in respect to dwellings may therefore help understand the agricultural geography of early farms.

The study of farm implements, in general, and plough parts, in particular, is also important in trying to understand the shapes and sizes of fields used for cultivation. Very small fields would be suitable only for spade work. Niall Brady's (2004) archaeological research has explored the character of the early medieval plough used for larger fields. Most arable fields would have been ploughed, probably in the spring time. The ownership of ploughs would have been a co-operative enterprise and as ploughs were expensive pieces of equipment, individual farmers were expected to contribute separate parts of a plough and an ox to joint or co-operative ploughing ventures. We still have little idea what these ploughs actually looked like. There are no actual depictions of early medieval ploughs on high crosses or art. In fact our only evidence for early Irish ploughs are the separate implements inserted into wooden plough to cut sod or to protect the ard share. In the past, there has been a range of different proposals and ideas about introduction of ploughs into early medieval Ireland, most of them now known to be incorrect. Frank Mitchell's work was most influential as he believed that the ard and share were introduced in the 4th century AD, as part of agricultural explosion that can be seen in the pollen record.

It is only recently, through the work of Niall Brady (1994) that major advances have been made in understanding the technology of ploughing in early medieval Ireland. Brady (2004) has shown that there were at least 35 plough irons known from Ireland, 12 found from dateable contexts, typically found on crannogs and ringforts. The major developments in plough technology included the use of a share (placed over the wooden shoe that cut under the sod) and then in the 10th century by a coulter (a knife like implement that hung down from the frame). These new ploughs may have lead to an expansion of arable farming.

The earliest plough before the early medieval period was a simple ard, with a small stone or wooden plough share used to cut the sod, similar to examples known from Iron Age Europe. In the 7th to 8th century, this wooden plough was improved by the introduction of a iron plough share - small sock-like objects that would have been placed on the sole at base of the plough frame and used to undercut the sod vertically. This plough would have been best suited to light, easily tilled soils. The second major advance in plough technology was the introduction of the share and coulter plough, probably originating in the 10th century, possibly due to contacts between Ireland and Scandinavia. Plough coulters (iron objects shaped like a very large, heavy knife) hang down from the frame and were used to slice sod vertically, and enabled ploughing of heavier soils. A plough coulter from Ballinderry 1, Co. Westmeath, dated to late 10th century, had a short tang, with scratches at 45 degree angles. This indicated that the coulter hung down at an angle, just above the share, cutting sod before it. What did the early medieval plough look like, at c.900 AD? Brady (1994) suggests that our best insights are provided by ethnological or folklife studies of ploughs on the western seaboard of Scotland, where a simply share and coulter plough was still used in the Orkney Islands until the 20th century to drill potato ridges. The plough was drawn by oxen, a man walked ahead to properly steer the animals, a second man walked behind, holding a goad or switch.

Cultivation ridges have been use in Ireland since at least the Early Bronze age (Mitchell & Ryan 1990, 206), and 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). Such

ridges are also extremely difficult to date - those that are 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.

Several recently excavated sites produced evidence for potential Early Medieval ridges and furrows. A fragment of a lignite bracelet was recovered from cultivation furrows at a settlement/cemetery site at Augherskea, Co. Meath that contained the burials of 187 inhumations (Baker 2002:1422). Potential early medieval ridge-and-furrow was also excavated at an Early Medieval settlement landscape at Ballyconneely and Ballygirreen, Co. Clare (Breen 2000:0046). Pieces of shale bracelet, a glass bead and an iron knife blade were found in their fill though it was stated that they could also represent early modern lazy bed cultivation. Further potential sites with cultivation evidence were revealed at the upland transhumance settlement at Ballyutoag, Co. Antrim (Williams 1984); outside a souterrain at Ferganstown & Ballymacon, Co. Meath (Hanley 1999:687) and at an unenclosed settlement beneath Maynooth Castle (Hayden 1999:405). Excavations at Clonmacnoise also uncovered an extensive area of cultivation furrows containing some finds that may be of Early Medieval date (Murphy 2003, 2-4. Ridges and furrows have been identified in close proximity to many early medieval sites such as ringforts including Carrigrohane, Co. Cork (Moloney 2003:0188), early ecclesiastical sites such as Kill St. Lawrence, Co. Waterford (Corcoran 2002:1812) and at a significant settlement enclosure complex at Rosepark, Balrothery, Co. Dublin (Baker & Swan 1999:162) but this does not prove that they are early medieval in date. Cultivation ridges, however, are extremely difficult to date so caution is needed when ascribing them to the early medieval period. Early finds can be found in muck later furrows. The most convincing evidence for Early Medieval cultivation furrows are from Site K Knowth, Co. Meath. In that instance furrows cut, and were cut by, the burials and some of the furrows produced radiocarbon dates of a clear Early Medieval date (Stout and Stout 2008, 80).

Table 6:1 Examples of Excavated Early Medieval Ridge & Furrow 1930-2004

Name	County	Year	Pub.	Comments	Reference
Augherskea	Meath	2000	N	With enclosed Burial-ground.	Baker 2002:1422
Ballyconneely	Clare	2000	N	Associated with pits and gullies south of E.M. enclosure	Breen 2000:0046
Ballyutoag	Antrim	1981-82	Yes	Upland Transhumance Site	Williams 1984
Clonmacnoise	Offaly	1999-2000	Y	Associated with Ecclesiastical Site	Murphy 2003
Ferganstown and Ballymacon	Meath	1999	N	Associated with unenclosed souterrain and structure	Hanley 1999:687
Knowth, Site M	Meath	2002-2003	Y	Associated with Cemetery/Settlement Site	Stout & Stout 2008
Maynooth Castle	Kildare	1999	N	Associated with unenclosed settlement	Hayden 1999:405

It is clear that the Early Medieval agricultural landscape was highly organised, with fields divided by banks and ditches, wooden fences or stone walls (O'Corrain 1983; Kelly 1997, 372-378). Field fences were necessary for the separation of livestock from crops and, as importantly, for the regulation of grazing. This was especially important in Ireland where hay was not saved, and where un-grazed 'preserved grass' ('*etham ndíguir*') was used for winter fodder (Kelly 1997, 45-6), necessitating that cattle be kept away from this pasture during the summer months. Few excavations have ever been undertaken to establish the dates of field boundaries and their potential association with archaeological monuments. 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 ringfort at Rathangan, Co. Kildare (Norman & St. Joseph 1969, 64 (Pl. 35)), or the irregular field walls around the cashels at Corrofin, Co. Clare (Norman & St. Joseph 1969, 61 (Pl. 32)). Williams (1983) noted the presence of irregular fields, defined by both linear and curvilinear banks, which are associated with ringforts and hut circles in Co. Antrim, for example at Ballyshee, Killyland and Ballyutoag. Aalen (1970, 212 (Pl. XX)) shows a similar pattern at Oldcastle, Co. Meath where the modern rectangular field pattern overlies a mosaic of smaller fields – not exceeding 0.5 hectares on average – and often of irregular hexagonal or pentagonal shape. Potential Early Medieval field patterns were also noted in association with the Early Medieval hut site at Beginish, Co. Kerry (O'Kelly 1956), and on many parts of Valentia Island in the same county (Mitchell 1989).

These field patterns are dated by association, rather than by any independent dating evidence. Field fences are notoriously difficult to date, and rarely produce diagnostic datable objects or suitably stratified samples for radiocarbon analysis. At Cush, Co Limerick, O'Riordain (1940, 143) argued that some of the field fences had been dug while the ringfort ditches were still un-silted. If this interpretation is accepted the ringforts are set within a pattern of rectangular fields of 0.2 - 0.3 hectares. O'Riordain also argued that the fields around the hut sites known as 'The Spectacles', Lough Gur, Co. Limerick were contemporary with the huts they enclosed (1949, 58-58). House B was built into the field wall, while a metalled path from House A ran up to, but not under, the field wall. The fields here are extremely small, being no more than 0.05 hectares. Circumstantial evidence suggests that at least part of the upland field pattern at Ballyutoag, Co. Antrim is of Early Medieval date (Williams 1984). The two main curvilinear enclosures contain groups of several hut platforms, and radiocarbon dating showed that one of the excavated the huts was Early Medieval in date. 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, 239-245) but these have not been independently dated.

The field patterns at Cush, Ballyutoag and Lough Gur, however, are unlikely to be representative of fields in Early Medieval Ireland. Cush is a conglomeration of eleven ringforts, 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. More recently large industrial, gas, and road infrastructural projects have uncovered field patterns in many parts of the country. Many were found in association with Early Medieval monuments, especially ringforts and other enclosures, but some are associated with unenclosed Early Medieval settlements.

A series of rectangular fields - between 0.13 and 0.17 hectares - were discovered at Marshes Upper, Co. Lough. There was evidence for ditch re-cutting and souterrain ware was found in the ditch bottom. Radiocarbon dates placed these fields to the eighth or ninth centuries A.D. (Mossop 2002:1335). A series of field fences at Carrigoran, Co. Clare - including one complete 0.11 hectare field enclosed by stone wall and ditch (Breen 1999:046; Reilly 1999:047 & 2000:0055) – were dated to the Early Medieval period by the presence of a fragment of comb of early medieval date (Reilly 2000:0055). The field pattern associated with a 10m circular structure at Ballygeale (Site 1), Co Clare has been ascribed to the 'medieval' period, but the basis for this was unstated (Eogan & Turrell 1999:485).

An almost complete Early Medieval farmstead has been excavated on Bray Head, Valentia Island, Co. Kerry. Aerial photographs and a plan published by Mitchell (1989, 44; 47-48) indicates a relict landscape containing what appears to be 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. A further series of excavations at the site indicate occupation from the sixth to thirteenth centuries A.D. (Hayden 1994:117, 1997:231, 1998:267, 1999:324 & 2000:0423; Walsh 1995:132 & 1997:230). Excavations in the townlands of Magheralane, Aghalislone and Magheralave, Co. Armagh uncovered a multi-period landscape containing early medieval ditches and a possible early medieval Christian rectangular structure (Ó Baoill 2004:0057).

The large scale nature of development-driven excavation has meant that areas surrounding Early Medieval enclosures are now being explored, occasionally resulting in the discovery of associated field boundaries. A series of outer enclosures and small annexes – about 0.1 hectares each - surrounded the ringfort at Baronstown, Co. Meath (Linnane & Kinsella 2007, 57) while two rectangular stone-and-earthen-bank enclosures were located close to a early medieval ditched enclosure at Ballycasey More, Co. Clare (Murphy 2001:045; O'Neill 2002:0079). A bronze ring-pin was retrieved from the rubble of the wall of the southern enclosure and it was suggested that they may have possibly represented animal pins associated with the nearby enclosure. Similar small annexes have been found on other Early Medieval sites, such as Castlefarm, Co Meath (O'Connell 2006, 19), and may represent vegetable garden plots, or animal pens. Excavations at Corbally, Co. Kildare revealed extensive evidence for enclosures and linear field patterns associated with a large enclosure (Tobin 2001:631 & 2002:0899; Tobin 2003; Coyne 2004:0818 & 2004:0817).

Similar evidence has been found at a number of ringfort and enclosure sites comprising Balgatheran 1 (Chapple 2000:0638) and Whiteriver, Co. Louth (Bolger; 2004:1128; McConway 2004:1129),   Rosepark, Balrothery (Baker & Swan 1999:162; Baker 1999:163; Carroll 2000:0209 & 2001:334) and Glebe, Site 43, Tully, Co. Dublin (Seaver & Keeley 2001:425; Seaver 2002:0594), Dowdstown 2 (Deevey 2005 & 2006), Roestown 2 (Dempsey 2004:1336; O'Hara 2007) and Betaghstown, Co. Meath (Lehane 2004:1187), Rahally, Co. Galway (O'Sullivan 2004:0706), Cahircalla More, Co. Clare (Taylor 2004:0141) and finally Ballynacarriga 1, Co. Cork (Noonan 2001:115). A growing corpus of cemetery/settlement complexes such as Ninch, Laytown (Eogan & Reid 2000:0760; McConway 2001:1007 & 2002:1489), Raystown 21 (Seaver 2004:1334; 2005 & 2006) and Ratoath (Wallace 2003:1455; 2004:1324; Dehaene 2004:1328), all in county Meath, have also revealed evidence for a complex of adjoining enclosures and field systems.

Recent excavations have also revealed growing evidence for apparent early medieval field boundaries not directly associated with enclosures or unenclosed settlement sites. Excavations at Grange near Clondalkin, Co. Dublin revealed a number of curving ditches (McConway 1996:068; O'Brien 1997:087), from one of which a one-sided decorated bone comb gave a *terminus ante quem* of the eleventh or twelfth century. Excavations at Balriggan 1, Site 15, Co. Louth revealed possible ditches, pits and a possible stone-lined grave (Delaney 2002:1291), and among the finds were a rotary quern fragment, and crude, bucket-shaped pottery, possibly souterrain ware, potentially giving the site an Early Medieval date. A series of dry stone-walled fields at Ballynacragga, Co. Clare may date to the early medieval period due to discovery of a rotary quern stone during excavations at the site (Quinn 2000:0051) and a charcoal sample taken beneath a stone wall from Clonmoney West, Co. Clare returned a radiocarbon date of A.D. 350-610 (Murphy 2001:055). Excavations at Ardclone, Co. Kilkenny uncovered a hearth, located on a backfilled ditch containing animal bone, a bone bead and a piece of blue glass (Neary 2000:0514). Charcoal from the hearth returned an uncalibrated an uncalibrated radiocarbon date of 1080±50 BP. Finally an unusual complex linear arrangement of stake-holes was traced for 406m across Derryville Bog (54), Killoran, Co. Tipperary. Intriguingly, the site was situated roughly parallel to the Kilkenny–Tipperary border and was dated to AD 668–884 (Murray 1997:546). It could suggest the demarcation of bogland in the early medieval period.

Table 6:2 Excavated Field Boundaries/Systems 1930-2004 and associated contexts

Name	County	Comments	Reference
Ardclone	Kilkenny	Backfilled Ditch	Neary 2000:0514
Balgatheran 1	Louth	Petal shaped field with enclosure complex	Chapple 2000:0638
Balriggan 1	Louth	Field Ditches	Delaney 2002:1291
Baronstown	Meath	With ringfort	Linnane & Kinsella 2007
Ballycasey More	Clare	Rectangular field enclosures with	Murphy 2001:045; O'Neill 2002:0079

Name	County	Comments	Reference
		settlement enclosure	
Ballynacarriga 1	Cork	With Enclosure	Noonan 2001:115
Ballynacragga	Clare	Dry-stone Walls	Quinn 2000:0051
Ballyutoag	Antrim	Upland Transhumance Site	Williams 1984
Beginish	Kerry	With unenclosed settlement	O'Kelly 1956
Betaghstown	Meath	Ditches with enclosure	Lehane 2004:1187
Bray Head, Valentia Island	Kerry	With unenclosed Farming settlement complex	Hayden 1994:117, 1997:231, 1998:267, 1999:324 & 2000:0423; Walsh 1995:132 & 1997:230
Cahircalla More	Clare	With enclosure	Taylor 2004:0141
Carrigoran	Clare	Field fences & Stone walls	Breen 1999:046; Reilly 1999:047 & 2000:0055
Castlefarm	Meath	With enclosure complex	O'Connell 2006
Castle Upton, Templepatrick	Antrim	Ditches with E.M. Pottery & penannular ring-ditch	Gahan 1997:006
Clonmoney West, Site 42C	Clare	Stone Walls	Murphy 2001:055
Corbally	Kildare	With cemetery/settlement	Tobin 2003; Tobin 2001:631 & 2002:0899; Coyne 2004:0818 & 2004:0817
Cush	Limerick	With ringforts	Ó Ríordáin 1940
Dalkey	Dublin	With early medieval Promontory fort	Liversage 1967-68
Derryville 54, Killoran	Tipperary	Stake Row in Bogland	Murray 1997:546
Dowdstown 2	Meath	With enclosure complex	Deevey 2005 & 2006
Glebe, Site 43 Tully	Dublin	With Ringfort	Seaver & Keeley 2001:425; Seaver 2002:0594
Grange	Dublin	Field Boundaries	McConway 1996:068; O'Brien 1997:087
Iniscealtra	Clare	With Ecclesiastical Site	De Paor 1970:06; 1971:10; 1972:06; 1973:06;1974:0009;1975:0009;1976:10;1980-84:0043
Magheralane, Aghalislone & Magheralave	Armagh	Field Ditches with Structure	Ó Baoill 2004:0057
Marshes Upper	Louth	Rectangular Fields	Mossop 2002:1335
Ninch, Laytown	Meath	With cemetery/settlement	Eogan & Reid 2000:0760; McConway 2001:1007 & 2002:1489
Rahally	Galway	With ringfort	O'Sullivan 2004:0706
Ratoath	Meath	With Cemetery/Settlement	Wallace 2003:1455; 2004:1324; Dehaene 2004:1328
Roestown 2	Meath	With enclosure complex	Dempsey 2004:1336; O'Hara 2007
Raystown, Site 21	Meath	With Cemetery/Settlement	Cotter 2003:1459; Halliday 2003:1460; Seaver 2004:1334; 2005 & 2006
Rosepark, Balrothery	Dublin	With enclosure complex	Baker & Swan 1999:162; Baker 1999:163; Carroll 2000:0209 & 2001:334
'Spectacles', Lough Gur	Limerick	With unenclosed Huts	Ó Ríordáin 1949
Whiteriver	Louth	With enclosure	Bolger; 2004:1128; McConway 2004:1129

Early Medieval Horizontal and Vertical Mills

A. T. Lucas's '*The Horizontal Mill in Ireland*' (1953), was the first paper to examine in detail the construction and operation of the many water mills discovered and recorded by the National Museum. Colin Rynne later challenged the accepted view that vertical water mills were introduced into Ireland by the Cistercians in the twelfth century. He re-examined Lucas's previous work, and suggested that the seventh-century mills at Little Island, Co. Cork and Morrett, Co. Laois represented the remains of such structures (1989, 30). Rynne's re-examination of milling in the Munster area in particular resulted in a revised timeline of Early Medieval mills (1998).

Brady (2006) has provided the most recent overview of Early Medieval mills in Ireland, building on the previous work of Rynne (2000), with a chronology founded on dates from the dendrochronology laboratory at Queen's University Belfast. The list compiled by Brady records all known early and later medieval sites - a total of 97 mill sites. Early Medieval horizontal mills constitute the majority of these sites. Rynne (2007) considers this figure to be an under-estimate because Brady does not include incidences of power-driven millstones found near streams in his corpus. The most recent published list of dated mills can be found in McErlean and Crothers (2007, 11). This work, on the horizontal tidal mill at Nendrum, Co. Down, comprises the most comprehensive publication of any Irish Early Medieval water mill to date. It lists three vertical mills of Early Medieval date - Little Island, Co. Cork; Morrett, Co. Laois; and Ardcloyne, Co. Cork – of which the earliest is Little Island (A.D. 630). The earliest securely dated horizontal mill, in contrast, is Nendrum (A.D. 619) – although a mill at Killoteran, Co. Waterford has recently returned two calibrated radiocarbon dates of A.D. 410-650 and A.D. 340-600 (Murphy & Rathbone 2006) - suggesting that both forms were introduced and developed around the same time.

Brady noted that the most intense period of mill building is between A.D. 750-850 (2006, 49). This time frame coincides with a change in emphasis from livestock to arable farming (McCormick & Murray 2007, 112-115). There appears to have been a concentration of milling activity in the south and south-east of the island (Brady 2006), although Rynne (2007, 34) considers this distribution to be artificial, due to systematic fieldwork in search of mills being undertaken in this area by Winedale, Fahy and O'Kelly, along with extensive drainage schemes occurring in that area during the last decades of the twentieth century. A number of milling complexes, such as Raystown, Co. Meath (Seaver 2005), have recently been excavated outside the south and south-east, adding credence to Rynne's claim.

The remains of at least 18 early medieval mill sites have been excavated between 1930-2004 (See Table 6:3). Radiocarbon dates for many of these have been published by Brady (2006) and McErlean & Crothers (2007) in recent years. The most intriguing site is Raystown, Co. Meath, a preliminary overview of which has been published by Seaver (2005). This site contains a series of eight watermills, found in association with grain-drying kilns, souterrains and a cemetery, and seems to be specialised milling site involved in the processing of grain on an almost industrial scale. Recent excavations have shown some mills were rebuilt or modified over extended periods of time. Nendrum was built in circa AD 619 with a second mill replacing it circa AD 789 (McErlean and Crothers 2007, 25; 80). The tidal pond for the later mill was smaller than the first. A mill-race and a dry stone mill undercroft were excavated at the Island/Martin's Row near the medieval church of Chapelizod. It was rebuilt on at least three occasions. The complex appears to date to the 10th–11th century (Walsh 2002:0492).

The role of ecclesiastical communities in milling has been previously noted and recently examined though recent publications by Rynne (2000, 185-213) at High Island and McErlean and Crothers (2007) at Nendrum are a welcome advance. Rynne (2000, 197, 201-03) has noted a number of references to water milling at a number of ecclesiastical sites including St. Moling's, Fore, Armagh and Kildare in the hagiographical sources.

Along with the significant excavated evidence for iron and other metalworking within the middle enclosure at Nendrum, excavations by McErlean and Crothers (2007) have identified a significant milling complex associated with this important monastery. One of the earliest dated mills was excavated at Nendrum and dated to A.D. 619. The third and final mill at the complex was dated to A.D. 788 from retaining timbers. A mill-race and a dry stone mill undercroft were excavated at the Island/Martin's Row near the medieval church of Chapelizod. It was rebuilt on at least three occasions. Though radiocarbon dates were pending, it was suggested that the mill dated to the late 10th–11th century (Claire Walsh 2002, Excavations Bulletin- 00E0878). A vertical water mill and mill-race were excavated at the base of a small valley leading towards the river Suir at Killoteran, county Waterford. Two radiocarbon ranges of A.D. 340-600 and A.D. 410-650 were secured from an associated yew post and an oak plank suggesting that it was in operation sometime between the fourth-seventh centuries (Murphy 2006). It has been suggested that the mill may have been associated with the early ecclesiastical establishment of St. Otteran, one mile to the north-east in the same townland (Murphy 2006, 26). Perhaps, an interesting study would be to examine if any of the other early medieval mills noted in Brady's (2006) survey were situated in close proximity to ecclesiastical settlements.

The remains of a horizontal mill undercroft was also partially examined on another western ecclesiastical site in 1999 at Fál an Mhuillinn on Inishmurray though no radiocarbon dates could not be established for burnt sediments behind the wall of the mill undercroft (O'Sullivan & Ó Carragáin 2008, 246-51). The surviving water milling complex at High Island has also been the subject of an important study by Rynne (2008). The level of labour investment involved in constructing and maintaining these complexes at Inishmurray and High Island suggests that western monasteries were not peripheral to agricultural developments across the country. The evidence also suggests that while some sites (e.g. Nendrum) may have been engaged in agricultural production at very advanced regional level, island communities like those on High Island may have also been able to engage themselves in water power technology to meet the needs of a self-sufficient 'community of monks and their tenants, who lived on the island the whole year round' (Rynne 2000, 206).

Table 6:3 Excavated Early Medieval Water Mills 1930-2004

Name	County	Year	Comments	Reference
Arddoyne	Cork	1996	1 Horizontal Water Mill	Cleary 1996:036
Ballykilleen	Offaly	1953	1 Horizontal Water Mill	Lucas 1955
Ballyine	Limerick	1959	1 vertical Water Mill	Walsh 1965; Rynne 2007
Barryscourt	Cork	2000	Horizontal Mill	Pollock 2000:0120
Chapelizod	Dublin	2002	Mill undercroft	Walsh 2002:0492
Clonlea Church	Clare	2000	Mill Wheelhouse	Rooney 2000:0060
Cloontycarthy	Cork	1981	Horizontal Mill	Rynne 1980-84:0050; Rynne 1989
Coolock Church	Dublin	1990	Lower Horizontal Water Mill Stone	Swan 1990:033
Crushyree	Cork	1994	1 Horizontal Water Mill	Cotter 1994:027
Feall A'Mhuilinn, Inishmurray	Sligo	1999	Horizontal Water Mill undercroft	O'Sullivan 1999:791; O'Sullivan & Ó Carragáin 2008
Johnstown 1	Meath	2002	1 Vertical Water Mill	Clarke 2002:1471 Carlin, Clarke & Walsh 2008
Killoteran 9	Waterford	2004	1 Vertical Water Mill	Murphy 2004:1681; Murphy & Rathbone 2006
Killylane	Antrim	1982-83	Possible Horizontal Water Mills	Williams & Yates 1984
Knocknacarragh Cross, Salthill	Galway	1971 1994	1 Horizontal Water Mill	O'Brien 1994:112
Knocknagranshy	Limerick	1955	Mill House and Mill Pond	Lucas 1969

Name	County	Year	Comments	Reference
Nendrum, Mahee Island	Down	2000	3 Tidal Water Mills	Crothers & McErlean 1999:153; McErlean & Crothers 2007
Raystown, Site 21	Meath	2004	8? Horizontal Water Mills	Seaver 2003:1460; 2004:1334, 2005 & 2006
Scattery Island	Clare	2001	Possible Tidal Water Mill	Pollock 2001:096

Early Medieval Corn-Drying Kilns

Ireland's damp climate makes it necessary to dry grain before it is stored, consequently, corn-drying kilns were necessary wherever cereals were harvested and processed. Early documentary sources make frequent reference to their use (Kelly 1997, 241-242), and the *Crith Gablach* indicates that some kilns were part-owned by multiple owners (*ibid.*). These structures tend not to be located within ringforts, 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 corn-drying kilns was published by Monk and Kelleher (2005).

Corn-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. 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 and irregular shaped kilns (Monk & Kelleher 2007). 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).

Excavated Cereal-Drying Kilns 1930-2004

Approximately Forty three excavated sites have revealed likely candidates for early medieval cereal-drying Kilns (See Table 6:4 and 6:5). At least 14 of these sites have been radiocarbon dated to the early medieval period (See Table 6:4). A significant number of potential early medieval excavated kilns were also identified (See Table 6:5) and further research will be required to establish there date. The distribution of excavated early medieval Kilns shows a concentration in Leinster with Dublin, Meath, Louth and Kildare providing many sites. While arable farming was likely to have been of more significance in these eastern counties, it is evident that the bias in modern development may have affected this distribution. The radiocarbon dated early medieval cereal-drying kilns show a particular concentration in the 5-7th century and throws up interesting ideas about the extent of tillage production in this period.

Table 6:4 Early Medieval Radiocarbon Dated Cereal-Drying Kilns: A Provisional List

Name	Site Type	Dated	Type	No	Reference
Ballyman, Dublin	Ecclesiastical	A.D 336-620 (no sig stated)	Dumb-bell	1	O'Brien 2005
Ballynacarriga 2, Cork	Near Enclosure Complex	AD 650–890 2 sigma	Unidentified	1	Noonan 2001:116
Bray Head, Valentia, Kerry	Unenclosed settlement	934 + 110 AD (no sig stated)	Unidentified	1	Hayden 1993:117
Bray Head, Valentia,	Unenclosed settlement	c. 10th century	Unidentified	1	See Hayden 1993:117 for reference

Name	Site Type	Dated	Type	No	Reference
Kerry					
Colp West, Meath	Enclosure complex	A.D. 400–650 (no sig stated) (one)	Unidentified	4	Clarke & Murphy 2001:952
Johnstown 1, Meath	Cemetery/Settlement	A.D. 570-770 (no sig stated)	Unidentified	6	Carlin, Clarke 7 Walsh 2008
Lackenavorna, Killederdadruin, Tipperary	Enclosure	c. A.D. 1000 (No sig stated)	Pit feature Unidentified	1	Manning 1984
Laughanstown, Dublin	& Granary Building	A.D. 530-650 & 540-660 (2 Sig)	Figure of Eight	4	Seaver 2005
Lorrha, Tipperary	Ecclesiastical	AD 545–660 (No Sig stated)	Unidentified	3	Linnane 2002:1738
Marshes Upper, Louth	Field system & enclosures	Transitional AD 30–580 (No Sig)	Unidentified	1	Mossop 2002:1335
Platin, Meath	Multi-phase settlement	A.D. 1010–1180 at 2 sigma (one)	Unidentified	2	Conway 2001:1019
Solsborough C1, Tipperary	With Ditches, Pits & Hearths	AD 563–659 (One- No Sig)	Key Hole	5	Murphy 2000:0965
Tallaght, Dublin	Ecclesiastical	c.10/11th cent.	Unidentified	1	Walsh 1997:187
Taylorsgrange, Dublin	Isolated	A.D. 540-647 (No Sig)	Drying Pits	3	Lynch 1998:222

Table 6:5 Excavated Early Medieval Cereal-Drying Kilns 1930-2004

Name	Site Type	Dated	Type	No	Reference
Ardreigh, Kildare	Ecclesiastical	Likely	Unidentified	1	Opie 2002:0856
Balgatheran 1, Louth	Enclosure	Likely (Finds)	Oval	1	Chapple 2000:0638
Ballyegan, Kerry	Cashel	Likely	Key-Hole	1	Byrne 1991:065
Ballygalley, Antrim	Souterrain & Pits	Likely	Unidentified	1	Farrimond 2002:0004
Ballymacash, Antrim	Ringfort	Likely	Unidentified	1	Jope & Ivens 1998
Ballynacarriga 1, Cork	Enclosures	Likely	Key Hole	3	Noonan 2001:115
Ballynacarriga 1, Cork	Enclosures	Likely	Unidentified	2	Noonan 2001:115
Ballynamona 4, Kilkenny	Isolated	Likely	Unidentified	1-10	Wren 2003:982
Balriggan 1, Louth	Cemet. & Sett.	Likely	Figure of Eight	1	Delaney 2003:1226
Blanchfieldsland, Kilkenny	Ringfort	Likely	Figure of Eight	1	Lennon 2004:0868
Blanchfieldsland, Kilkenny	Ringfort	Likely	Oval	1	Lennon 2004:0868
Castletown, Celbridge, Kildare	Isolated	Likely	Unidentified	1	Opie 2001:609

Name	Site Type	Dated	Type	No	Reference
Cherryhound, Dublin	Isolated	Likely	Unidentified	1	McGowan 2004:0483
Cherryhound, Dublin	Isolated	Likely	Key Hole	1	McGowan 2004:0483
Cherrywood & Loughlinstown, Dublin	Cemetery & Settlement	Likely	Key Hole	1	Ó Neill 1999:169
Corcagh, Clondalkin, Dublin	Cemetery & Settlement	Likely	Unidentified	1-10	Carroll 2001:340
Corrstown, Derry	Enclosure	Likely	Unidentified	1	Conway 2002:0387
Creevykeel, Sligo	Megalith	Likely	Unidentified	1	Hencken 1939
Fish Lane, Limerick	Viking Limerick	Likely	Unidentified 'Industrial Kiln'	1	Hanley 1997:351
Hughes' Lot East & Kilscobin, Tipperary	Ringfort	Likely	Unidentified	2?	Fairburn 2003:1759
Inishkea North, Mayo	Ecclesiastical	Likely	Unidentified	1	Henry 1951
Kilbane, Limerick	Enclosure	Likely	Key Hole	1	Purcell 2004:1008
Kilgobbin, Dublin	Ecclesiastical	Likely	Figure of Eight	1	Larrson 2004:0646
Kilgrovan, Waterford	Ecclesiastical	Bii ware	Unidentified	3	Purcell 2003:1882
Ninch, Laytown, Meath	Enclosures	Likely	Key-hole	2	Eogan & Reid 2000:0760; McConway 2001:1007 & 2002:1489
Rathbeg, Antrim	Ringfort	Likely	Unidentified	1	Warhurst 1969
Ratoath, Meath	Cemetery & Settlement	Likely	Figure of Eight	1-10	Wallace 2003:1455 & 2004:1324; Dehaene 2004:1328
Ratoath, Meath	Cemetery & Settlement	Likely	Key Hole	1-10	Wallace 2003:1455 & 2004:1324; Dehaene 2004:1328
Raystown 21, Meath	Cemet. & Sett.	Likely	Figure of Eight	4?	Seaver 2004:1334
Whiterath 2, Louth	Ringfort	9/10th	Key hole	1	Ó Drisceoil 2000:0721
Woodstown 6, Waterford	Longport	Likely	Unidentified	2	Russell 2004:1705

Type	Key-Hole	Dumb-Bell	Unidentified	Figure of Eight	Oval
Sites	8	1	25	7	2
Total Kilns	19	1	51	15	2

Table 6:6 Excavated Early Medieval Drying Kiln Types 1930-2004
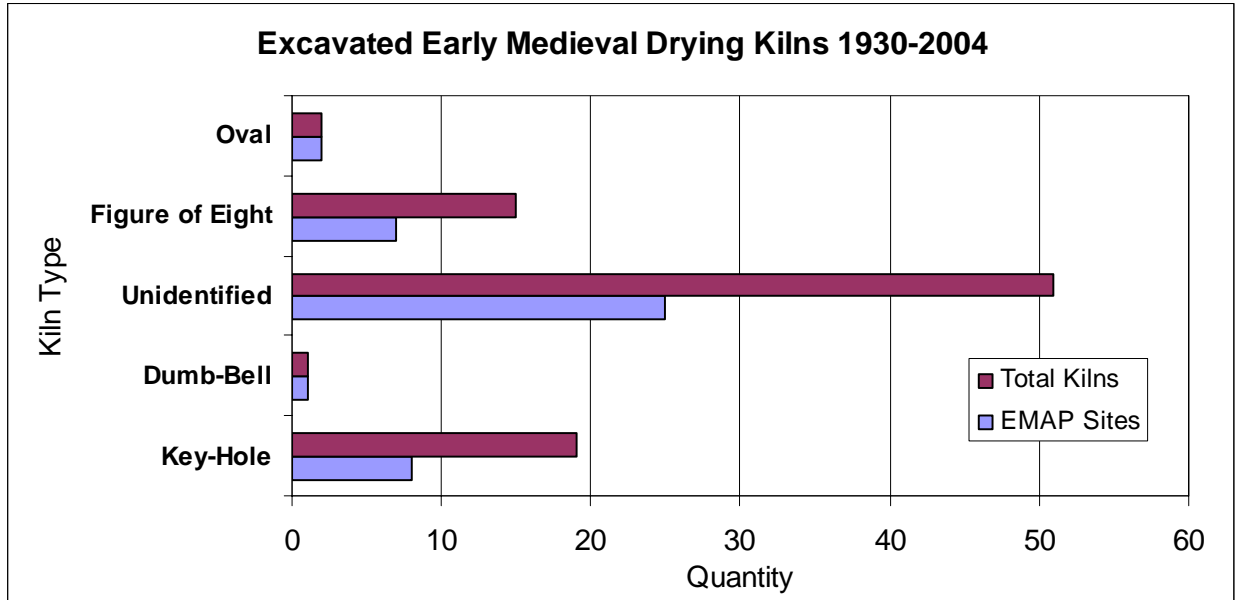
Figure 6:1 Excavated Early Medieval Drying Kilns 1930-2004

Type	Key-Hole	L (Comma)	Unidentified	Figure of Eight	Oval
Sites	19	5	66	7	1
Total Kilns	22	5	81	26	1

Table 6:7 Possible Early Medieval Excavated Drying Kiln Types 1930-2004
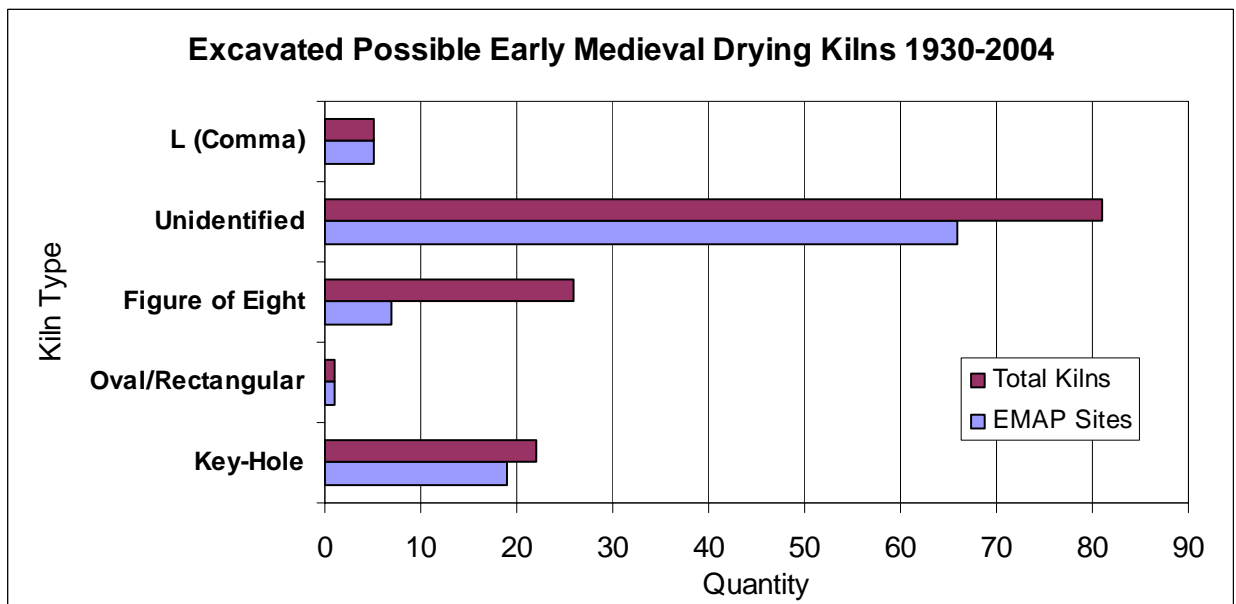
Figure 6:2 Possible Early Medieval Excavated Drying Kiln Types 1930-2004

Context of Early Medieval Cereal-Drying Kilns

Cereal-drying kilns have been excavated in a variety of contexts. The association between ecclesiastical and arable farming has already been discussed and it has been noted that several grain drying kilns were located on ecclesiastical sites (See Craft & Industry Chapter). Excavations in the townland of Laughanstown in advance of the M50 South-eastern motorway revealed four figure-of-eight corn drying kilns. They were associated with a cluster of post-hole and stake-hole groups that were radiocarbon dated to the sixth and seventh centuries. It was suggested that they may represent the remains of a timber structure that supported a field granary (Seaver 2006, 58-59). The site was situated 480m south of the ecclesiastical complex at Tully (Hill of the Bishops or *Telach na n-Espac*) as well as being close to the early church site of Rathmichael to the south. Other Excavated examples include the ecclesiastical site of Killederdadruin, Co. Tipperary which revealed part of a corn-drying kiln. A grain sample dated it to c. A.D. 1000. The kiln is comparable to others at Ballycatteen, Cork and Kilpatrick, Westmeath. The site was later used as a burial-ground (Manning 1984).

A growing number of kilns have been excavated at the significant multivallate enclosed settlement sites including Ballynacarriga, Co. Cork (Noonan 2001:115) and Ninch, Laytown, Co. Meath (Eogan & Reid 2000:0760; McConway 2001:1007 & 2002:1489). Both these sites contained extensive evidence for Early Medieval iron and agricultural evidence dating from approximately the fifth century A.D. onwards. Cereal-drying kilns are also a frequent discovery on at a large number of cemetery/settlement complexes including Cherrywood, Co. Dublin (Ó Neill 1999:169) and Raystown (Seaver 2004:1334) and Ratoath, Co. Meath (Wallace 2003:1455 & 2004:1324; Dehaene 2004:1328). Though a significant number of classic ringfort sites have been excavated, relatively few have yielded evidence for early medieval cereal-drying kilns. An excavations of a bivallate ringfort at Whiterath 2, Co. Louth revealed a key-hole pit, provisionally dated on artefact evidence to the ninth/tenth century (Ó Drisceoil 2000:0721). Kilns finally can also be found in unenclosed contexts and examples include a possible site at Castletown, Celbridge, Co. Kildare (Opie 2001:609).

Cereal-Drying Kiln Chronology

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 are undated and may be of either early or later medieval date. Many that have been attributed to the Early Medieval period have been so dated 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 earlier existing features such as banks and field fences. The presence of a keyhole kiln in the court tomb at Creevykeel, Co. Sligo (Hencken 1939) provides an extreme example of the danger of dating kilns by their association. Similarly, the keyhole kiln excavated in the bank of the ringfort at Rathbeg, Co. Antrim (Warhurst 1969) may well date to the later medieval period, since the presence of wheel-thrown medieval pottery provides evidence for later activity on the site. Where available, radiocarbon dates are not necessarily reliable, since the context and material used to provide a sample is often not stated (Monk & Kelleher 2005, 105). This, however, is a recurring problem in archaeology as a whole. The kilns in the present review are therefore included on their *potential* to be of Early Medieval date, and the chronological frameworks outlined below must be treated with due caution.

Monk & Kelleher (2005, 105) noted that most excavated keyhole kilns tend to date to the later and post medieval periods, although this shape of kiln seems to have its origin in late-Roman Britain (*ibid.*). They also noted that the figure-of-eight kilns and dumbbell kilns were, 'in evolutionary terms, earlier than the key-hole types' (*ibid.*). This chronology is not, however, definitive, for example the keyhole kiln at Leggetrath West, Co. Galway gave a calibrated radiocarbon date of A.D. 790-1030 (Lennon 2006, 47); and one of the five keyhole kilns excavated at Solsborough, Co. Tipperary produced a radiocarbon date of AD 563-659 (Murphy 2000). A series of five figure-of-eight shaped kilns were found in association with a succession of horizontal mills at Raystown, Co. Meath (Seaver 2005, 82), and radiocarbon dates from

cereal grains from three of these – A.D. 410-560; A.D. 570-660; A.D. 380-550 - indicate that they are Early Medieval (O'Sullivan & Stanley 2006, 134).

There are few dated examples of specific types of Early Medieval kilns. The origins of the Irish kiln types may be better understood when the details of a large series of Iron Age kilns from Colp West, Co. Meath are published (Clarke & Murphy 2003). Radiocarbon dates range from the Iron Age until the transition to the Early Medieval period. No details of their morphology, however, have been published, and it must be concluded that the chronological development of Irish Early Medieval kilns will only be more fully known after further investigations.

Early Medieval Burnt Mounds

Previous Studies

Burnt mounds or *fulachta fiadh* are one of the most frequently excavated archaeological monuments in Ireland. A huge number of these sites have been excavated in recent years, especially due to development and road scheme projects. They are typically identified by a horse-shoe shaped mound of burnt and broken stones with an associated trough and hearth and are frequently found in close proximity to water. They have been interpreted as temporary shelters and cooking places by roving bands of hunters for the purpose of boiling meat (O'Kelly 1954), but other interpretations suggest they may have been sweat baths or saunas (Barfield & Hodder 1987), or were used in a range of industrial activities including brewing (Quinn & Moore 2007), textile and leather processing (Coles 1979; Hodder & Barfield 2003).

O'Kelly (1954) suggested that the *fulachta fiadh* may have been in use from the Bronze Age through into the sixteenth century A.D, although radiocarbon dates have since shown that the vast majority are Bronze Age. There is limited evidence that they were used into the Early Medieval period (Brindley, Lanting and Monk 1989/90), and reconsideration of the dating evidence suggests that only about 5 % date to the whole medieval period (Ó Neill 2004, 83). At Ballinrobe, Co. Mayo (Walsh 1994:184), an iron sickle was excavated from inside the burnt mound material suggesting that the monument dated to a period when iron was in use.

Excavations at Cloongownagh, Co. Mayo revealed a *fulacht fiadh* dated to the fourth century A.D, which was later buried under a ringfort (Henry 1999:765; Lennon 2000:0849). Excavations at Parksgrove 1, Co. Kilkenny revealed an ironworking site with an associated possible burnt mound in the western flood plain of the River Nore, but this is an ironworking site of early medieval significance and not a burnt mound in the fulachta fiadh tradition (Stevens 1999:458; Stevens 2005; Paul Stevens pers comm.). The Lisheen Bog Project investigated a site known as Killoran 24, Co. Tipperary which was a burnt mound trough without the mound and "as such represents a single use fulachta fiadh...dated to the early medieval period at AD 660-800" (Gowen et al 2005, 303; Paul Stevens pers. comm..)

Excavations at Castle Street/Quay Street, Dungarvan revealed a *fulacht fiadh* that returned a calibrated date of A.D. 540–660 (2 sigma) from associated charcoal (Pollock 1997:566). Burnt stones, however, are not always associated with formally recognisable burnt mounds. Heat shattered stones and charcoal were found in a number of hearths and pits near a river at Kilmurry 2, Co. Wicklow (Mossop 2001:1372). One pit was dated to A.D. 1000-1240, while one hearth was dated to A.D. 900-1160. The purpose of this enigmatic site is uncertain. The latest date is returned from a *fulacht fiadh* at Ballymount Great, Co. Dublin which produced a calibrated date of A.D. 1400-1630 (Stout 1983, 217-218).

Early Medieval Track ways in Wetlands

The first systematic study of the archaeological potential of bogland was undertaken at the Mount Dillon Bogs in Co. Longford from 1985-91 (Raftery 1996). Excavations were undertaken initially at the large Iron Age track way known as Cornea 1 but it soon became apparent that a

large collection of other brushwood and wooden *tog hers* were present in the exposed sections of nearby drains. The discoveries of this complex of track ways 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 Mona and produced a number of publications. In the last few years, excavations have also been undertaken by a number of commercial companies, particularly Archaeological Development Services (ADS), and during the Lisheen Mine Archaeological Project from 1996-1998, Margaret Gowen (Gowen, Phillips & O'Neill 2005).

Provisional statistics indicate that there are about thirty known wooden track ways from 25 EMAP defined sites that can be dated to the Early Medieval period (Table 6:8). Many of these have now been radiocarbon or dendrchronologically dated. A significant number of other track way sites of early medieval potential have also been identified and will be the subject of future research. Several were found within Hiberno-Norse towns and are not included in the Table below. One possible early wooden track way platform was excavated at the ecclesiastical site of Dromiskin, Co. Louth while a number of other early medieval dated examples were investigated by IAWU members and may have been built to connect Lemanaghan monastery, founded by St. Manchán, to the dry land. A potential pilgrim's road towards Clonmacnoise was also excavated in Bloomhill Bog, Co. Offaly (Breen 1988). Altogether wooden track ways were excavated in rural wetland contexts, the majority of which were discovered in Cos. Offaly and Tipperary.

Table 6:8 Examples of Excavated Early Medieval Track ways 1930-2004

Name	County	No.	Date	Context	Reference
Ballinderry II	Offaly	1	Early Med	Crannóg Site	Hencken 1941-42
Ballinvally, Monettia Bog	Offaly	1	AD 760±9yrs	Bogland	O'Carroll 2000:0803
Ballylennon, Barnaboy & Rathdrum, Daingean Bog	Offaly	3	AD 544 to AD 816 ± 9 or later (No Sig)	Bogland	McDermott 2001:1085
Barnaran & Lullybeg, Lullybeg	Kildare	1	Early Med	Bogland	Whitaker 2004:0798
Bloomhill	Offaly	1	A.D. 605-762 (1 Sig.)	Pilgrim Road	Breen 1988
Castlearmstrong 19, Lemanaghan	Offaly	1	AD 665±9	Bogland	Bermingham 1996:326
Castlearmstrong, KillaghintoberBog, Lemanaghan	Offaly	1	AD 596-7	Bogland	McDermott 1998:553; O'Carroll 1999:742;1999:743
Clonbeale More, Killaun Bog	Offaly	1	Cal. A.D. 1030–1277 (No Sig)	Bogland	Whitaker 2000:0808
Corlea 5	Longford	1	A.D.587±9	Bogland	Raftery 1996
Corlea 7	Longford	1	A.D. 438-572 (1st Sigma)	Bogland	Raftery 1996
Derrynagun Bog, Lemanaghan	Offaly	1	AD 653 ± 9 & AD 1158 ± 9	Bogland (Ecclesiastical)	O'Carroll 1996:327
Dromiskin	Louth	1	Likely	Ecclesiastical	Murphy & Conway 1999:590
Drummany Bog	Cavan	1	Likely	Bogland	Ó Neill 1998:020
Kellysgrove	Galway	1	Likely	Bogland	Prendergast 1946-47
Lisdermot, Corhill Bog	Offaly	1	AD 626±9	Bogland	O'Carroll 2000:0829
Lisdermot, Corhill	Offaly	1	AD 783-1149	Bogland	O'Carroll 2000:0829 &

Name	County	No.	Date	Context	Reference
Bog (Site A & B)			2 sigma	(Platforms)	2000:0834; Whitaker 2000:0830 & 2000:0832
Littleton	Tipperary	3	Likely	Bogland	Rynne 1965
Lullybeg & Lullymore East	Kildare	2	AD 380-660 & AD 900-1160 (No Sig)	Bogland	Whitaker 2004:0850
Sharragh Bog	Tipperary	1	AD 575±9	Bogland	Whitaker 1997:558

The research into Early Medieval track ways is still in its infancy. It is likely that the numbers of Early Medieval wooden track ways will increase as more radiocarbon dates are obtained, and thus a systematic review of the different wetland projects will be required to establish an accurate figure. It will also be necessary to appraise the character of brushwood and wooden track ways to understand how they were constructed and used over time, and to understand how they functioned as routeways, and what sites they connected.

Early Medieval Coastal and Estuarine Fish weirs

Early Medieval historical sources indicate that the seashore was a place of intense activity (O'Sullivan & Breen 2007). The early Irish laws of the sea, '*Muirbretha*' dating to the seventh and eighth century, discuss rights to inshore and offshore sea-fishing, and the ownership of seaweed and driftwood (O'Mahoney & Richey 1873, 422-433); while the Saint's lives describe the work of fishermen, the moving back and forth of boats and ships and occasionally the hunting of marine mammals. The seventh-century '*Life of Columba*' clearly states that the monks of Iona were trapping seals, and these were probably butchered for skins and meat (Anderson & Anderson 1961, 294). Seal bones have been recovered from Early Medieval coastal sites at Church Island and Inishkea; and whalebone has been found on Early Medieval sites such as Raheens, Co. Cork, Rathmullan, Co. Down, Inishkea, Co. Mayo and Lough Faughaun crannog, Co. Down. Although it is possible that these were hunted, it seems more likely that they represent the use of accidentally stranded animals, for example in A.D. 753, the '*Annals of Ulster*' note that a whale (with three gold teeth) was cast ashore at Bairche in Ulster. In contrast, for A.D. 827, there is a reference to a 'great pig-slaughter of sea-pigs (probably porpoises) by the foreigners' on the coast of Ard-Cianachta (in modern Co. Louth, on Ireland's east coast). This could again simply represent the opportunistic slaughter of a large group of stranded animals, but it may also imply hunting out at sea using boats and harpoons. Certainly, the fact that they refer to it at all and the use of the term 'foreigners' indicates that the Irish annalists found this to be a unique and extraordinary event, perhaps indicating too that whale and seal hunting was something that was more actively practiced by Scandinavians. By the eleventh century A.D., the Muslim geographer Al-Qazwini, drawing on the writings of Al-'Udhri (1002-1085), noted that the Irish hunted young whales between the months of October and January (James 1978, 5-9). Such hunting activities would leave little tangible evidence, however recent intertidal archaeological surveys on the Shannon estuary (O'Sullivan 2001a, 2003, 2005) and Strangford Lough (McErlean *et al*. 2002, 144-185) have revealed physical traces - in the form of fish traps and mills - of what we might call maritime taskscapes – i.e. landscapes of marine-oriented labour that were intended to provide both food and income to local populations.

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. In coastal and estuarine waters, fish tend to move up the shore with the flooding tide and drift back down with the ebbing tide, being attracted by feeding in the shallow water and by the nutrients in freshwater streams and

rivers moving into the estuary. Thence, it is possible to trap them by erecting fish traps across these routes, with ebb-weirs catching fish moving down with the ebbing tide and flood-weirs catching fish moving up the shore with the flooding tide. Upon encountering these barriers, the fish would tend to move along the fences into the trapping mechanism, from where they could be removed later.

The fish traps typically consisted of two (or more) converging vertical fences or walls, thus forming a large V-shaped structure (McErlean *et al.* 2002, 150). At the apex or 'eye' of the two fences there would be a woven wicker basket supported on a framework, a net, or a rectangular or curvilinear enclosures of wooden posts or nets. However, medieval fish traps vary 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. Indeed, it is now clear that there is a significant local and regional variation in the use of fish weirs around medieval Britain and Ireland.

The Strangford Lough fish traps were mostly concentrated in Grey Abbey Bay and around Chapel Island in the north-east part of the Lough. At least fifteen wooden and stone-built fish traps have been recorded - the wooden traps have been radiocarbon dated to between the eighth and thirteenth centuries AD. During this period, Strangford Lough would have had a wide range of fish species, including salmon, sea-trout, plaice, flounder, mackerel, cod, grey mullet and skate, with large numbers of eels in the abundant kelp growth. The Strangford Lough fish traps were ebb-weirs, intended to catch fish drifting down with the falling tide, and usually have two long stone walls or wooden fences that converged in a V-shape to a point on the lower foreshore.

The fences were made of single lines of posts, and complex arrangements of paired posts that created an inner and outer fence. Post-and-wattle panels could have been carried out to the traps and slotted between these paired uprights and pinned in position using bracing props and horizontal pegs. Wooden fish traps at Cunningburn (McErlean *et al.* 2002, 155-156) and Gregstown (*ibid.* 162-164), near Newtownards, Co. Down also had stone walls along the base of the fence to protect them from erosion and undercutting. At the 'eye' of the converging fences, baskets or nets were probably hung on rectangular structures.

Wooden fences would have deteriorated quickly and needed periodic repair, and it is obvious that a significant amount of labour was required for their construction. The nature of the ebb-weirs, however meant that at every low tide they were exposed for about two to three hours, and while they enclosed a large area of foreshore, their owners and users had sufficient time to remove the fish and repair the structures.

At Chapel Island (McErlean *et al.* 2002, 159-162), a large wooden fish trap has provided a radiocarbon date of A.D. 711-889. It has a lower, 'flood fence' 147 metres in length running parallel to the shore, with a second, shorter fence running up towards the island. Archaeological excavations suggest that it was the subject of frequent repairs or that there was an attempt to make the fences 'fish-tight' through the use of hundreds of closely-spaced posts. Interestingly, there is archaeological evidence for settlement on the island, including a possible church structure within a promontory enclosure defined by a substantial bank and ditch. Traces of stone field-walls can also be seen on the nearby slopes. The Chapel Island fish traps may have been used by an island community associated with the adjacent chapel or this island may have been used as a hermitages associated with the larger monasteries like Nendrum in the lough (McErlean, McConkey & Forsythe 2002, 182-183).

In Grey Abbey Bay (McErlean *et al.* 2002, 180-185), 1.5 kilometres to the east, three wooden traps and four stone traps have been recorded. At South Island, a large V-shaped wooden trap crosses a tidal channel. This structure measures over 100 metres in length, was constructed of at least 500 posts and has a rectangular structure and possible basket at the eye. It has provided two separate radiocarbon dates of A.D. 1023-1161 and A.D. 1250-1273 (McErlean *et al.* 2002, 183). Similar V-shaped wooden traps found elsewhere in the bay have produced

radiocarbon dates of A.D 1037-1188 and A.D. 1046-1218 (*ibid*.). The traps may have used nets, baskets or rectangular pounds, post-and-wattle enclosures inside of which the fish remained until removed. McErlean, McConkey & Forsythe (2002, 182-183) have also suggested that three wooden fish traps radiocarbon dated to the 11th and 12th centuries in Greyabbey bay were part of the southern portions of the monastic estate of Movilla, a few miles to the north. It is possible that this fishery was maintained by a small community of fishermen who brought their harvest a short distance up the coast with the rising tide to the ecclesiastical settlement in this period. The Strangford Lough fish traps were clearly in use in the bay throughout the Middle Ages. Some of the large wooden and stone fish traps may have been the property of the Cistercian community of Grey Abbey, which was founded in 1193 A.D. It is known that the early Cistercian communities were determinedly self-sufficient and the use of fisheries in the bay probably intensified after their arrival.

On the Shannon estuary, archaeological surveys have revealed evidence for several medieval wooden fish traps, dated to between the fifth and the thirteenth century A.D (O'Sullivan 2001a, 2003, 2005). The Shannon estuary fish weirs tend to be small, V-shaped post-and-wattle structures (with fences 20-30m in length) with basket traps, hidden away within the narrow, deep creeks that dissect the estuary's vast expanses of soft, impenetrable muds. Despite being relatively small, they would have been undoubtedly effective as even a small barrier in these creeks could have literally sieved the water of all fish moving around with the tides. They were oriented to catch fish on the flooding or ebbing tide and could in season have taken large catches of salmon, sea trout, lampreys, shad, flounder and eels (the latter in October-November).

The earliest known fish trap is a small post-and-wattle fence - about 8 metres in length - on the Fergus estuary, Co. Clare, a tributary of the Shannon estuary. It has been radiocarbon dated to A.D. 442-664, making it one of the earliest known fish traps in Ireland. It was probably part of a series of fish traps that would have been used by the inhabitants of Early Medieval ringforts 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. 1037-1188 is a small V-shaped fish trap, oriented to catch fish on the flooding tide with two converging post-and-wattle alder wood fences measuring over 30m in length.

A cluster of posts at the apex of the two fences probably represents the surviving remains of a trap. It may have been associated with nearby settlements on the neighbouring land, including Early Medieval ringforts and other earthworks. There are other, later medieval fish traps on this foreshore (see below), that provide intriguing evidence for local continuity of size, form and location, suggesting that they essentially replaced each other between the eleventh and the late-fourteenth century A.D.

Recent studies of Early Medieval fish weirs around the coastline of Britain and Ireland also 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 AD. 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 in the seventh century A.D., and also again in the thirteenth to fourteenth centuries A.D., presumably relating to some social and cultural processes such as population growth and perception of fish as an economic resource.

Conclusions

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. However, there

is also good evidence for Early Medieval field-patterns and enclosures, for kilns and mills, for track ways and fisheries and other features. It could be argued that the well-known revolutions in early Irish farming could now be matched with a revolution of the scale and intensity of settlement and land-use in the Irish landscape and the real role of farming in social life and practice.

Chapter 7. Early medieval crafts and technology

Introduction

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. Early medieval crafts and industry also influenced the organisation and layout of settlements, with ironworking and copper-alloy working clearly important, if small-scale activities on many sites, while others appear to have been largely devoted to such activities. It should be recognised that crafts and industry 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. Certainly, the early Irish sources attest to the relative status and importance of different crafts. For example, the early Irish laws 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, while in contrast, comb-makers were of quite low social status and were scoffed at by the jurists who compiled the laws. It is also the case that manual labour had to be avoided if you were above a certain social rank. Clearly, all this evidence for crafts and technology has great potential to add new insights into the organisation of labour and the economy of early medieval society.

In the past, a number of general archaeological studies (e.g. de Paor & de Paor 1978; Hughes & Hamlin 1977; Hamlin 1985; Edwards 1990; Mytum 1992; Edwards 2005, 235-96) have dealt with evidence for industry and craft working in their general discussions of the archaeology of early medieval Ireland, the most notable being Mytum (1992, 210-251) and Edwards (1990, 73-98). Recent archaeological excavations have thrown up a growing body of evidence for both the manufacture and 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 through the years. Of all of these, metalwork has received the most attention with key monographs on ironworking being produced by Scott (1990) and on non-ferrous metalwork (Comber 2004). Most recently Comber's (2008) monograph on the economy of the period 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. These works are also of particular interest as their emphasis is on the evidence from archaeological excavations, which will also be the particular focus of this chapter. It 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. This chapter will also use extensive Tables of evidence, to publish for the first time a comprehensive review of the ranges and types of evidence recovered from early medieval archaeological excavations, 1930-2004.

Early medieval ironworking

Background

There have been few systematic studies of early medieval Irish ironworking. The first major publication of on the subject was B.G. Scott's (1990) *Early Irish Ironworking*. It examined the evidence for the transition to iron in the later prehistoric period and the development and consolidation of this technology in the Iron Age and in the earliest phases of the early medieval period. Scott was one of the first to examine the potential evidence for smelting, smithing and mining and the artefacts and technology used behind these processes. Both Scott (1990, 157) and Edwards (1990, 86) were one of the first to recognise the problems of previous Irish metallurgical studies on important early medieval sites that often failed to make a distinction between smithing and smelting furnaces or failed to collect slag in a systematic way.

However, despite these publications, our understanding of early medieval ironworking was not significantly advanced until very recently through the work of a few archaeometallurgical specialists on Irish material. Recently, Comber (2008, 111-132) has summarised the previous evidence. The recently discovered material from several early medieval ironworking sites on the M4 roadway in Co. Meath has been considered by Carlin (2008). However, our current understanding of early medieval ironworking is still largely based on a few earlier published and quite specific sites all of which are potentially in need of re-evaluation. It is certainly the case that previous studies of early medieval ironworking have tended to overemphasise the technical processes at the expense of the social, economic and the ideological, but even in terms of the technological processes, there is still a lack of understanding concerning the evidence for the early medieval sourcing of iron ore, the structure and form of charcoal kilns, the character of smithing and smelting hearths and the range of artefacts used behind these processes. There is also a lack of knowledge concerning the scale of iron production, the distribution networks behind the circulation of iron ore, the locations of high status forges and the status, power and relationship of the blacksmith to local communities.

The Technological Process

Iron is produced through a process which involved
- Sourcing Iron Ore
- Producing Charcoal
- Separating iron bloom and slag from ore using charcoal (Smelting)
- Refining and hammering out impurities (Smithing)

Sourcing and mining Iron Ore

There is currently a complete lack of knowledge and evidence for the initial extraction of iron ore for industrial purposes from its primary context. There was some evidence for the extraction of iron ore from surface outcrops near Garryduff I ringfort, Co. Cork (O'Kelly 1963, 103). Few other sites with the exception of the copper mines at Ross Island, Co. Cork (William O'Brien 2004) has revealed evidence for early medieval mining across the island. It is believed however that bog iron was the principal source of iron in early medieval Ireland as evidence from the ringfort at Cush, Co. Limerick (Ó Ríordáin 1940), the ringfort at Mullaghbane, Co. Tyrone (Harper 1972) and iron ore evidence at Reask (Fanning 1981), Co. Kerry suggests.

Charcoal Production

Early medieval ironworking was also dependant on charcoal production and recent discoveries suggest that this involved the use of carefully constructed small pits in which timbers were placed against a central vertical post c.1m high that were then covered by straw, bracken and layers of earth and turf were built to turn the timbers into charcoal. Charcoal was created 'by carbonising smouldering wood in an oxygen-limited environment; the amount of air was carefully controlled so that the wood was roasted but not burnt' (Carlin 2008).

Smelting

The charcoal was then used for the smelting of bog iron ore as it was through burning charcoal within a furnace that iron bloom and slag are separated from the ore.

Smithing

After the smelting process, the produced bloom was further refined, reheated and hammered in a smithing hearth to remove excess slag and impurities not previously separated during the smelting phase. Slag was a by-product and consequence of both smelting and smithing processes. Microscopic analysis of the slag can yield important information about whether smelting or smithing was undertaken at the site.

The social and ideological contexts: The role of the blacksmith in early Irish society

Early Irish laws indicate that blacksmiths were high status individuals in Irish society, but they would also have worked under the protection and patronage of local secular or ecclesiastical

authorities. Early Irish sources also indicate that the blacksmith was held in high esteem by community, occasionally figuring as a mythological figure. This high-status is common in many small-scale or traditional communities, due largely to the smiths role in transforming materials, through heat, violence and smoke. The blacksmith, unlike other craftsmen, would have been a permanent resident on a settlement site. Blacksmiths worked with large amounts of raw materials, at high temperatures and probably produced a wide range of goods for a large clientele (e.g. farm equipment, weaponry, domestic vessels). The blacksmith's forge was therefore an important place in the landscape.

Excavations at a small crannog at Bofeenaun, Co. Sligo revealed few finds except for large quantities of iron slag and furnace linings (Aonghus Moloney & Margaret Keane 1992, Excavations Bulletin). O'Sullivan (2004) and Van de Noort and O'Sullivan (2006) have suggested that specialized ironworking may have being undertaken by early medieval blacksmiths in these marginal places of the landscape. Excavations at Dooey, Co. Donegal have also revealed a coastal dwelling place in which extensive evidence for the production of iron and bronze objects as well as dye extraction activities were found. It has been suggested by O'Sullivan & Breen (2007, 119) that the site may have been the work-place of a high status blacksmith and have been used as a beach-market for traders moving down the North Atlantic seaways between Northwest Ireland and Scotland.

While it is likely that the majority of ironworking was being undertaken on high status settlements and ecclesiastical sites, it is possible that specialized ironworking may have been undertaken in certain marginal sites, many of which have been described above as the ironworking sites of the poor. More work is then required to establish if other marginal sites could represent specialized ironworking centres or were instead just visited periodically by local people with a lower means of living? Examining these research questions will help establish the character of the economy and patterns of trade and commerce in the early medieval period.

Excavation of early medieval ironworking sites/evidence, 1930-2004

The main evidence for ironworking on individual early medieval Irish sites comprises the presence of furnaces and iron slags (Table 7:1). Further evidence is provided by the presence of ores, blooms, hammerscale and tuyères and ironworking hearths. The main difficulty with interpreting the material is that the most common evidence, i.e. slags, can be produced at different stages of iron processing and not all of these occur on individual sites. Slag can be produce at the smelting, bloom-smithing and forging stages of production (Scott 1990, 151).

Table 7:1. Evidence for ironworking from Early Medieval excavations 1930-2004

Undated material from Scott's (1990, 221-223) list have been omitted.

Site	Site type	Metalworking features	Artefacts	Reference
'Aghadegnan, Templemichael, Co. Longford	Ringfort	'Two phases of ironworking'		Carroll 1991:091
Armagh, English Street	Ecclesiastical		Slag and tuyeres	Crothers 1997, 64, 69, 77.
Altanagh, Co. Tyrone	Ringfort	Furnaces	Iron slag, furnace bottoms	Williams 1986, 51-58
Ardcloon, c. Mayo	Ringfort		Iron Slag	Rynne 1956, **JRSAI page ref needed**
Balgatheran, Co. Louth	Enclosures		Iron slag	Chapple 2000:0638
Ballinderry I, Co. Offaly	Crannog		Iron slag	Hencken 1936, 161
Ballyara, Co. Cork	Souterrain		Iron slag	Fahy 1953 **ref needed**
Ballybrit, Co. Galway	Ringfort		Iron slag	Waddell 1971,

Site	Site type	Metalworking features	Artefacts	Reference
				79
Ballycasey, Co. Clare	Enclosures		Iron slag	O'Neill 2002:0079
Ballycatteen, Co. Cork	Ringfort	None	Iron slag, furnace bottoms	Ó Ríordáin and Hartnett 1943, 30
Ballyfounder, Co. Down	Ringfort		Iron slag	Waterman 1958, 49.
Ballyhenry, Co. Antrim	Ringfort		Ore – haematite	Scott 1990, 154
Ballyvollen, Co. Antrim	Ringfort		Iron slag (170kg), 3 tuyères	Williams 1985, 96- 99, Scott 1990, 221
Ballyvourney, Co. Cork	House site/ecclesiastical	Pits	Furnace bottoms, Tuyères, bog ore	O'Kelly 1952, 32-35.Scott 1990, 154
Ballywee, C. Antrim	Settlement		Iron slag	Scott 1990, 221.
Balriggan, Co. Louth	Enclosure	Industrial area, iron ore roasting oven	Slag	Delaney and Roycroft 2003, 19.
Beginish, Co. Kerry	House site		Slag, tuyère	O'Kelly 1956, 182.
Big Glebe, Co. Londonderry	Raised rath		Iron slag	Scott 1990, 222.
Bofenaun, Co.	Crannog	Possible furnace	Iron slag (74kg),	O'Sullivan 1998, 122
Boho, C. Fermanagh	Ringfort		Iron slag	Proudfoot 1953, 55-5
Butterfield, C. Dublin	Ecclesiastical		Iron slag	Carroll 1997:184
Cahercommaun, Co. Clare	Cashel		Iron slag	Hencken 1938, 54-5.
Cahergal, Co. Kerry	Cashel		Iron slag and tuyère	Manning 1990:067
Cahercalla, Co. Clare	Enclosure		Iron slag	Taylor 2004:0141
Caherlehillan, Co. Kerry	Ecclesiastical		Iron slag	Sheehan 1996:165
Carrickmuirish, Co. Waterford	Ring fort		Tuyère (date uncertain)	O'Kelly 1964, 101.
Carn, Co. Fermanagh	Cashel		Iron slag	Brannon 1982, 64
Cavanapole, C. Armagh	Ringfort		Iron slag,	Crothers 1996:015
Chapelizod, The Island/Martins Row, 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 1990, 167.
Clonmacnoise, New Graveyard, Co. Offaly	Ecclesiastical		Slag, furnace bottoms,	King 1992, 113-14, King 1993:187
Clonmacnoise, National School, Co. Offaly	Ecclesiastical	Bowl furnace	Iron Slag (4kg), tuyère, furnace bottom	O Floinn and King 1998, 130-132, O
Clonmacnoise, Co. Offaly, Visitors centre	Ecclesiastical		Iron slag, tuyère fragments	Manning 1989:078
Clonmacnoise, Co. Offaly	Early medieval bridge		Iron slag	O'Sullivan and Boland 1997:447

Site	Site type	Metalworking features	Artefacts	Reference
Clonfad, Co. Westmeath	Ecclesiastical		'nearly two metric tons of archaeometallurgical residues', production of hand bells	Stevens 2006, 11
Conva, C. Cork	Enclosures		'furnace bottoms and iron slag' – date uncertain	Doodey 1992:021
Coolcran, C. Fermanagh	Ringfort	Iron working furnaces	Furnace bottoms, iron slag	Williams 1985, 71, 77
Coonagh West, Co. Limerick	Ringfort		Iron slag	Taylor 2007, 77
Corcagh Demense, Co. Dublin	Settlement and burials		Iron slag	Caroll 2001:340
Croom East, Co. Limerick	Ringfort		'Iron slag or furnace bottom'	Shee 1977, 32
Cush, Co. Limerick	Ringforts 4, 6 and 7		Slag	Ó Ríordáin 1940, 83.
Dalkey Island, Co. Dublin	Promontory fort	Iron smelting pit	Slag, tuyère	Loversage 1967, 135-6.
Deer Park Farms, Co. Antrim	Raised rath		Slag	Scott 1990, 221
Derryfin, Co. Antrim	Ringfort	Iron working hearths		Bratt 1975:04
Derryhowlagh East, Co. Fermanagh	Crannog		Iron slag	Williams 1993:105
Derryloran, Co. Tyrone	Ecclesiastical	Smelting furnace?	Slag	MacManus 2003:1843
Dollas Lower, Co. Limerick	Isolated metal-working site	Bowl furnace	Iron slag, hammerscale	Dowling and Taylor in Grogan *et al* 2007, 273-4.
Dooey, Co. Donegal	Sand hill site, industrial		Iron slag	Ó Ríordáin and Rynne 1961
Doras, Co. Tyrone	Ecclesiastical		Iron slag	McDowell 1987, 153
Downview Park, Belfast, Co. Antrim	Souterrains		Slag	Davidson 1964, 127.
Dressogagh, Co. Armagh	Ringfort	Smelting hearth		Collins 1996, 119.
Dromore, Co. Antrim	'Ring work'		Iron slag	Scott 1990, 221.
Drumakill, Co. Antrim	Souterrain		Iron slag	Evans 1945
Dún Eoghanachta, Inis Mor, Co. Galway	Stone fort		Iron slag	Cotter 1995, 117
Dunbell, Co. Kilkenny	Ringfort	Furnace (ironworking?)		Cassidy 1991, 19.
Dunmisk, C. Tyrone	Burial and settlement		Slag	Ivens 1989, 55
Dunnyneill, Co. Down	Island trading post		Furnace bottoms	McCormick and Macdonald 2004, 8.
Dunsilly, Co. Antrim.	Ringfort		Possible furnace bottom	McNeill 1992, 105.
Faughart, C. Louth	Ringfort?		Blooms?, slag	O'Connor 1966,
Feltrim Hill, Co. Dublin	Cashel		Iron slag	Hartnett and Eogan 1964, 27
Galgorm, C. Antrim	Souterrain		Iron slag	Evans 1946
Gallen Priory	Ecclesiastical		Slag , 'ore crushing basin'	Kendrick 1939,
Garranes, Co. Cork	Ringfort		Iron slag, furnace	Ó Ríordáin

Site	Site type	Metalworking features	Artefacts	Reference
			bottoms	1942, 105-107, Scott 1990, 162.
Garryduff , Co. Cork	Ringfort	Furnaces	Furnace bottoms, tuyères, ore, slag	Kelly 1963, 99-103.
Glebe, C. Dublin	Ringfort	Possible smithing hearth	Iron slag, possible hammerscale	Seaver 201:425 Seaver 2005, 60
Glenbann, Co. Mayo			Iron slag – date uncertain	Grant 1993:175
Gragen West, Co. Clare	Mound		Iron slag – date uncertain	Cotter 1988:04
Harristown, Co. Louth	Ringfort?		Iron slag	Murphy 1994, 181
Iniscealtra, Co. Clare	Ecclesiastical	'iron reduction pits'		De Paor 1070:06
Inch/Bellyrennan, Co. Down	Ringfort		Iron slag	MacManus 1997:074
Iniskea North, Co. Mayo	Ecclesiastical?		Iron slag	Henry 1945, , Scott 1990, 167.
Island McHugh, C. 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 and Carlin 2008, 73-75.
Keeloguesbeg, Co. Galway	Ecclesiastical?	Bowl furnace	Iron slag	Tiemey 2001:519
Kells, Townpark, Co. Meath	Ecclesiastical		Slag, furnace bottom?	Byrne 1987, 41.
Kilgobbin, Stepaside, Co. Dublin	Ecclesiastical		Iron slag	Larsson 2004:0645
Kilpatrick, Co. Meath	Ecclesiastical	Forging area, furnaces	Tuyères, slag	Swan 1995, 8-11. Scott 1990, 158-163.
Kill, St Lawrence, C. Waterford	Ecclesiastical		Slag	O'Connell 2004
Kilternan South, Co. Limerick	Isolated metal-working site	Bowl furnace	Slag	Dennehy in Grogan *et al* 2007, 291.
Kiltera, Co. Kilkenny	Ecclesiastical?	Possible furnace	Slag, anvil,	Macalister 1935, 5
Kiltiernan, Co. Galway	Ecclesiastical		Slag (unstratified)	Waddell and Clyne 1995, 180
Killickaweeney I, Co. Meath	Enclosure	Two ironworking areas, furnaces and smithing hearths.	Smelting and smithing slags, hammerscale, tuyères, unfinished iron object	Carlin *et al* 2008, 40-4
Killanully, Co. Cork	Ringfort		Iron slag, tuyère, iron ore	Mount 1995, 138-140, 146
Killoran, Co. Tipperary	Ecclesiastical	Ironworking area	Furnace bottoms, slag	Stevens 1998:615.
Knockea, Co. Limerick	Cemetery?		Iron slag	Kelly 1967
Knowth, Co. Meath	Enclosed settlement	Furnaces	slag	Eogan 1974, Scott 1990, 161
Labbamolaga Middle, Co. Cork	Ecclesiastical		'some evidence for iron smelting'	Cleary 1995:035
Lahard, Co. Kerry	Ringfort		Iron slag	Connolly 1994:127
Larrybane, Co Antrim	Promontory fort		Iron slag	Childe
Leacanabuaile, Co. Kerry	Cashel		Iron slag	Ó Ríordáin and Foy 1941, 93

Site	Site type	Metalworking features	Artefacts	Reference
Liathmore, Co. Tipperary	Ecclesiastical		Iron slag	Leask and Macalister 1945,
Lisnagade 2, Co. Down	Ringfort		Slag	Proudfoot 1961
Lisnagun, Co. Cork	Ringfort		Iron slag	O'Sullivan 1987-9, 54
Lislacagh, Co. Mayo	Ringfort	'iron-smelting pit furnace'	Furnace bottoms, 'smelted, but unforged, iron'	Walsh 1995, 8.
Lisleigh II, Co. Cork	Ringfort	Ironworking area, bowl furnace	Iron slag, (800kg)	Monk 1991:026: Scott 1990, 160-163.
Lissanoure, Co. Antrim	Souterrrain		Iron Slag	Evans 1946, ref needed
Lissue, C. Antrim	Ringfort		Iron slag	Bersu 1947, 50.
Lough Faughan, Co Down	Crannog		'Bog ore, iron slag and iron blooms'	Proudfoot 1955, 75 (Appendix 1 excavation report)
Lough Island Reevy, Co. Down	Crannog		Iron slag	Davis and Gaffikin 1938,
Lusk, C.Dublin	Enclosure		'small fragments of iron-working waste'	Giacometti 2006, 37
Maghera, Co. Down	Ecclesiastical		'much ironworking debris', slag, tuyeres (context not stated)	Hamlin 2008, 308, Lynn1984-6:0086
Marlinstown, Co. Westmeath	Ringfort	Furnace (ironworking?)	Iron slag	Keeley 199:126
Meadowbank rath, Jordanstown, Co. Antrim	Raised rath		Iron slag and tuyère	Halpin and Crothers 1995:007
Moore cemetery, Loclackagh, C. Roscommon	Souterrain		Iron slag	Lavelle 1994:202
Movilla, Co. Down	Ecclesiastical		Iron slag	Yates 1983, 62.
Moylederg, Co. Donegal	Crannog		Iron slag	Davies 1946
Moyvalley 2, C. Meath	Occupation		Slag	Carlin 2008, 88
Muroough Bay, Co. Antrim	Sand hill site		Slag	Evans 1945,
Mullaghbane, Co. Tyrone	Ringfort		Iron slag (from bog ore)	Harper 1972, 43.
Nendrum, Co. Down, monastery	Ecclesiastical		Iron slag, ironstone nodules	Bourke 2007, 407, Scott 1990, 154. Lawlor 1925
Nendrum, Co. Down, watermill	Ecclesiastical		Iron slag, tuyère	Crothers and McErlean 1999:153, Crothers and McErlean 2001:216
Newcastle 2, Co Meath	Industrial site	Bowl furnace	Iron slag, metal globules	O'Hara 2002:1499, Carlin 2008, 88
Newtown 1, CO. Westmeath	Burnt mound	Tapping pit for shaft furnace (date unclear)		Stevens 2004:1768
Newtownlow, C. Westmeath	Crannog		Iron slag	Scott 1990, 223.

Site	Site type	Metalworking features	Artefacts	Reference
Ninch, Co. Meath	Enclosures		Iron slag	McConway 2002, 18
Oldcourt, Co. Cork	Ringfort		Iron ore, iron slag	Murphy and Ó Cuileanáin 1961, 90.
Petitswood, Co. Westmeath	Ringfort?	Bowl furnace (date uncertain)		Channing 1992:179
Poulacapple, Co. Antrim	Ringfort		Iron slag	Reynolds 1972:0030
Platin, C. Meath	Occupation site		Iron slag	Lynch 2000:0774, Lynch 2001:1022
Rathgureen, C. Galway	Ringfort	Ironworking furnace	Iron slag	Comber 2002, 153, 170.
Reask, Co. Kerry	Ecclesiastical	Smelting and smithing furnace	Iron slag	Fanning 1981, 105-110, Scott 1981, 168-170
Rinnaraw, Co. Donegal	Cashel	Pit, possible lean –to structure	Iron Slag, furnace bottom, tuyère?	Comber 2006, 103.
Rathmullen, Co. Down	Raised rath		Iron slag? (May be the unstratified slag referred to by Lynn 1982, 145)	Scott 1990, 222
Rossan 4, Co. Meath	Hearth	Smithing hearth	Iron slag	Carlin 2008:88; Photos-Jones 1988 cd-rom slag report
Shaneen Park, Co. Antrim	Ringfort		Iron slag	Scott 1990, 221
Shane's Castle, Co. Antrim	Ringfort		Iron slag	Warhurst 1971, 63.
Simonstown, C. Meath	Ringfort	Are of 'smelting activity'		Kelly 1974:33
Skellig Michael, Co. Kerry	Ecclesiastical		Slag	Scott 1990, 222
Sluggary, Co. Limerick	Ringfort (bivallate)		Furnace bottoms	Shee 1974:29
Stranue, Co. Offaly	Ecclesiastical		Iron slag, furnace bottoms	Delaney 2001:1004
Tallagh, Co. Dublin	Ecclesiastical		Iron slag	O'Brien 1990:043
Terryhoogan, Co. Armagh	House site		Iron slag	McSparron 2004:0078
Towlaght, C. Meath	Hearth, pits	Furnace		Carlin 2008, 88
Tullylish, Co. Down	Ecclesiastical	Hearth, furnaces?	Tuyères? slag	Ivens 1987, 72, 76, 104-106
Turn Robert, Co. Antrim	Souterrain		Furnace bottom	Williams 1991:011
Twomilwborris A, Co. Tipperary	Ringfort	Furnace, smithing hearth		Ó Droma 2008, 54
Twomilborris B, Co. Tipperary	'Plectrum shaped' enclosure'		'ceramic crucible and iron-working residues'	Ó Droma 2008, 51
Urney, Co. Tyrone	Ringfort		Slag	Scott 1971:0034
Whiterath, C. Louth	Souterrain		Iron slag	Ó Drisceoil 2000:0721
Woodstown, Co. Waterford	Viking settlement		Furnace bottom, slag, tuyère	Russell 2003:1915

Iron ore production

Iron ore has been found on only a small number of sites. Bog ore has been found at Ballyvourney, Co. Cork and Lough Faughan, Co. Meath (*ibid.*). Photos-Jones (2008, 186) concluded that ore fragments found on several early medieval M4 sites, which included Killickaweeney 1 and Johnstown 1, were also most likely to have been of bog ore because of their high manganese content. The iron slag from Mullaghbane, Co. Tyrone was also thought to have been derived from bog ore (Harper 1974, 43). Limonite has been recorded at Garryduff I and Oldcourt, Co. Cork, haematite at Ballyhenry, Co. Antrim while ironstone nodules have found at Nendrum, Co. Down (Scott 1990, 154). Scott observed that it is likely that iron ore was found on many other sites but was not recognised as such by the excavators.

Furnaces and smelting

Furnaces provide the main evidence for smelting, the evidence of so called 'furnace bottoms' being less clear (Scott 1990, 155). Scott (*ibid*. 159) believed that the simple bowl furnace was the only type used in Ireland at this time. More recent evidence, however, shows that the more efficient shaft furnaces were also used. This comprises a clay shaft built over a furnace pit (Carlin 2008, 92). The remains of vitrified clay fragments on several of the of the M4 sites are thought to be the remains of these shafts (*ibid*. 94), but it should also be noted that bowl furnaces also had clay covers which could have become vitrified during smelting.

It is also theoretically possible to differentiate between the slags used in both bowl furnaces and shaft furnaces. The tapped slags from shaft furnaces have a 'characteristic drip like surface texture' (Photos-Jones 2008, Harwood 3 slag report). While the non-tapped slag, characteristic of the slag-pit bowl furnace, tends to form into rounded 'furnace bottoms' although can be easily confused with the 'smithing hearth bottoms'. In general the latter are differentiated on the basis of size the larger being from the smelting process (Scott 1990, 155-60). On the basis of their size 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* 161-2) and cast doubt on the identification of 'furnace bottoms' on several other sites. Tuyères too can be indicative of both smelting and smithing (*ibid.*).

Charcoal production

Large quantities of charcoal are needed for the smelting or iron. Several rectangular charcoal kiln pits have recently been identified. Some of these, such as Hardwood 3, Co. Meath, have produced early medieval dates (Carlin 2008, 91). The charcoal kiln was found in association with a series of smelting furnaces (Photos-Jones 2008, CDROM). A charcoal production site of early medieval date has also been discovered at Kilmaniheen West, Co Kerry (Taylor 2004:0767).

Ironworking on sites

It is clear that the degree of intensity of ironworking varied greatly between sites. Aside from mining and charcoal, the four separate processes included in ironworking were ore processing, smelting, bloomsmithing and forging. It was likely that few sites were involved in all these processes. Some sites specialised in stages of iron production. The crannog at Bofeenaun, Co. Mayo, which produced volumes of slag seems to have been a specialised smelting site, exploiting bog ore from nearby sources. The site at Hardwood 2, Co. Meath, seems to have also been a specialised ironworking site producing no evidence for any other type of activity. The site comprised four bowl smelting hearths, a charcoal kiln and three possible smithing hearths (Carlin *et al* 2008 CD-ROM).

The large quantities of slag found at the ringforts at Ballyvollan, Co. Antrim (170kg) and Lisleagh, Co. Cork (800Kg) identified them to Scott (1990, 101) as being of 'the upper tier of iron smelting ... specialist sites' despite the fact that Ballyvollan did not produce any actual evidence for furnaces. The 'settlement cemetery' at Johnstown, Co. Meath also clearly specialised in ironworking producing some 2,000Kg of metallurgical waste, presumably slag (Carlin *et al* 2008, 73). The slags were derived from bog ores which were probably found in the bogs located close to the site. Most of the evidence from the site was associated with smelting

and the processing of bog ore may have formed the economic basis of the site. It is interesting to note that there was evidence for ironworking as late as the 15-17th century indicating that the site was the focus of ironworking over about 1000 years (*ibid*.   74). The evidence for ironworking at Killickaweeny, Co. Meath, with 86kg of slag, was more limited than at Johnstown. Evidence for smelting and smithing slags, along with hammerscale, indicate that all phases of processing occurred there (*ibid*. 40-2).

On most sites ironworking tended to be an outdoor activity. Possible windbreaks were found in the metalworking areas at Killickaweeney (*ibid*.). In some monastic sites there is evidence that ironworking activity was confined to the periphery of the sites, as evidenced by the presence of material within the vallum ditches, e.g. Tallaght and Butterfield, Co. Dublin, Tullylish, Co. Down and Derryloran, Co. Tyrone (Table 7:1). At Nendrum, Co. Down there was evidence for ironworking within the middle enclosure (Bourke 1997, 419) but also outside the vallum close to the site of the horizontal mill (Crothers and McErlean 1997:154). This confirm Ryan's (1988, 45) conclusion that monastic metalworking was kept well away from the sacred centres of these settlements. Ironworking occurred at several locations at Clonmacnoise. King (1998, 132) noted one location at the periphery of the monastery had been chosen in order to be 'away from dwellings where sparks could cause devastating fires'. No such health and safety concerns were demonstrated by the smiths at Reask and Church Island, Co. Kerry and Ballyvourney, Co. Cork where the ironworking took place within the actual houses (O'Kelly 1952, 32-5, 1958, 69, Fanning 1981, 106-8). One wonders if in some of these cases that the ironworking occurred after the houses became derelict, as was the case in Illaunloughan, Co. Kerry where the church was subsequently used for ironworking (Marshall White and Walsh 2005, 46).

On secular sites ironworking sometimes occurred in the ditches of the enclosures, as was the case at Johnstown, Co. Meath (Carlin *et al* 57), Petitswood, Co Westmeath and Rathgureen, Co. Galway (Comber 2008, 121). Comber (*ibid*) noted that when located within ringforts, ironworking tended to be away from the buildings. At Killickaweeney, Co. Meath, there two areas of ironworking. One was at some distance form the dwellings in a separate annex while the second was separated from the dwellings by an internal division (Carlin *et al* 2008, 28). There is no a growing evidence for isolated ironworking sites which are not close to habitations. Examples of this have been identified at Dollas Lower and Kiltiernan South, Co. Limerick (Grogan *et al* 2007, 273-4, 291) and Hardwood 3, Co. Meath (Carlin *et al* 2008, 91). The crannog at Bofeenaun can also be regarded as an isolated ironworking site (O'Sullivan 1998, 122).

Table 7:1 indicates that evidence for ironworking has been found on a large number of early medieval sites in Ireland. 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 as the trivallate Garranes, Co. Cork (Ó Ríordáin 1942, 105-7) as well as numerous univalate ringforts (Table 7:1). There is also evidence for ironworking at the most important monastic sites, such as Clonmacnoise, Co. Offaly, as well the smallest isolated monastery at Church Island, Co. Kerry. It is clear that on most sites ironworking was undertaken on a non-specialist subsistence level but this indicates that knowledge of ironworking, or at least smithing, was commonly held skill. It is also clear that there were specialist ironworking centres where production occurred on a much larger scale. The problem is identifying such sites. One approach could be to regard any sites where all process between ore roasting and forging might have occurred as being a 'specialist' site, but the identification of the different stages is extremely difficult.

It seems to be very difficult to identify evidence for roasting in the archaeological record. A 'roasting hearth was identified at Balriggan, Co. Louth (Delaney and Roycroft 2003, 19) while Reilly (2001:651) has suggested the presence of roasting pits at the undated iron-working site at Kilmacredock Mor, Co. Kildare. Scott (1990, 155), however, did not recognise any evidence for roasting in his survey. Since it is implied that roasting of ore was necessary before smelting (*ibid.* 151) the presence of ore could be taken as a proxy for this stage of the procedure. Only

5.2% of sites producing evidence for ironworking have produced evidence for ore, but, as already noted, iron ore is likely to be under-identified on archaeological sites.

Smelting furnaces are more common with 18.8% of sites producing evidence, or possible evidence, for their presence (Table 7:1). Smithing hearths have been identified on only 6.8% of the sites, with actual evidence for forging, i.e. hammerscale, being present only 2.3% of the sites. Furnace bottoms, which as discussed above, can represented either smelting or bloomsmithing, are found on 14.3% of sites. Finally, tuyère fragments have been noted on 11.3% of sites. These figures, however, are of little value in trying to identify the different stages of ironworking practices on individual sites. It is clear that unless there ironworking specialists involved with the excavation, and especially the post- excavation analysis, the identification of various aspects of the process are usually a matter of guesswork. During the 1970's and 1980's Brian Scott visited and studied the material from a selection of sites that produced reliable information on the different stages of the process. More recently Effie Photo-Jones work on the M4 motorway excavations in County Meath (reports in Carlin *et al* 1998) has led to great steps forward in our understanding of the subject. Hopefully and informed overview will be published in the near future.

The social, economic and political contexts of early medieval ironworking

What were the significance, scale and character of the ironworking at these sites? Were most people engaged in ironworking during their daily lives or was the activity a preserve of the well to do and wealthy? Where did these activities take place and what was the status of the blacksmith? It is likely that ironworking was undertaken by people of different status within a variety of different contexts as the above graph suggests. It is likely that ironworking occurred in a range of contexts. It is likely that ironworking was done by local people at a very low intensity to meet basic subsistence needs. The second and third contexts occurred at high status/royal sites and important ecclesiastical sites where iron working was undertaken by smiths in tandem with other specialised activities such as copper and glass production.

Isolated ironworking sites and modest settlements: The ironworking of the lower classes?
Basic subsistence levels of ironworking are likely to have been undertaken on the settlements of the semi-free and lowest grades of free-men in the early medieval period. It is also likely that many isolated ironworking sites containing a small number of hearths, furnaces and associated charcoal pits were visited periodically by local farmers to meet their basic subsistence needs. The site at Knockbrack, Co. Kerry could represent one example where small scale ironworking complex with evidence for both smelting and smithing was undertaken (Hull & Taylor 2006, 20). Similar sites were discovered along the M4 including Hardwood 3 and Rossan 4 where there were evidence for contemporary smelting and smithing furnaces. (Carlin et al 2008).

Some ironworking sites may have been sited to exploit bog ore. Potential examples include Shallon 1 & 3, Co. Meath excavated along the M1 road scheme (Ian Russell 2001, Excavations Bulletin- 01E0195). It revealed an Iron Age/early medieval transitional ironworking site (cal. AD 240-540) comprising an oval furnace with associated slag. Nearby, a small metalworking dump was recovered comprising a flint blade, nineteen fragments of flint debitage and seventeen fragments of a possible clay tuyère.

Excavations at Tullaghedy, Co. Tipperary in advance of the N52 Nenagh Bypass Road revealed 3 fulachta fiadh, one of which contained evidence for subsequent smelting and metalworking (Richard O'Brien 1998 & 1999, Excavations Bulletin- 98E0540). A large quantity of iron slag, iron nails, burnt and unburnt animal bone and a ring headed pin were discovered in this later phase of activity. These examples illustrate that small-scale ironworking were often undertaken at a low level of intensity in marginal places near iron ore and fuel resource most likely by small farmers to meet their basic subsistence needs.

Limited ironworking at a very low level of intensity many have also been undertaken on modest ringforts and cashels. Excavations at a large number of ringforts, cashels and crannogs have

revealed limited ironworking evidence often represented by the discovery of a small quantity of slag or perhaps a number of furnace bottoms. Excavations at a univallate ringfort at Croom East and Sluggary Co. Limerick revealed a small quantity of iron slag (E. Shee 1974, Excavations Bulletin). Shee (1973 & 1974, Excavations Bulletin- E131) also undertook an excavation at another Limerick ringfort at Sluggary. The excavation revealed a central building as well as slag, furnace bottoms, bronze-ring headed pin, bone comb and clay moulds which were found along this internal bank. Excavations at a small crannog at Sroove, Co. Sligo revealed some domestic artefacts and a limited evidence for slag indicative of ironworking (Christina Fredengren 1997-99, Excavations Bulletin- 97E0209). It has been suggested by Fredengren (2002) that such crannogs may have been the homesteads of the poor.

Iron Production and the prosperous Farmer
It is likely that the homesteads of the better-off farmer or free-man were engaged in ironworking at a higher level of intensity. Carlin (forthcoming) has cited a number of examples including Lisnagun, Co. Cork (O'Sullivan, Hannon and Tierney 1998) and Coolcran, Co. Fermanagh (Williams 1985) where evidence for small-scale ironworking as well as domestic activity has been uncovered on a number of ringfort settlements.

Excavations at Scrahane 1, Co. Kerry also revealed considerable evidence for ironworking on a ringfort (Mary O'Donnell 1997 & 1998, Excavations Bulletin- 96E0153). Extensive amounts of slag and industrial waste were discarded into the ditch of the ringfort. Extensive evidence for smelting was uncovered in a number of areas inside the ringfort.

Excavations at a raised ringfort at Altanagh, Co. Tyrone revealed a considerable amount of ironworking evidence in the northern portion of the site (Brian Williams 1986). Two bowl furnaces were found and contained charcoal, slag and a shard of coarse pottery. A stone pavement appears to have served as a working area for four simple bowl furnaces on its west side. Strong evidence for ironworking including slag, hammer scale and furnace bottoms were found in phase 2. The site is then likely to have contained both evidence for smelting and smithing. It is then likely to have been a ringfort of a modestly well- off family with a means greater than that of families living at a basic subsistence level but likely not at the same level found at high status sites.

Excavations at a raised ringfort at Dunsilly, Co. Antrim were undertaken by Tom McNeill (1974 & 1975, Excavations Bulletin). It was revealed that the ringfort was re-used as a motte in the later 12th century. A series of phases of buildings were excavated and a number of hearths, furnace bottoms and a quantity of slag were recovered.

Excavations at a large coastal enclosure at Shandon, Dungarvan, Co. Waterford revealed several hearths, an ironworking area and pits containing traces of iron and copper production (Deirdre Murphy & Stuart Elder 2001 & 2001, Excavations Bulletin- 00E0442). The site had potentially Viking associations.

Excavations at a bivallate ringfort (62 meters diameter) at Lisleagh 1, Co. Cork with stratified evidence for a series of buildings, structure, defences as well as trade, craft working and intensive levels of ironworking (Monk 1980-84, Excavations Bulletin- E218).

Evidence for smelting and smithing furnaces as well as textile production and other activities have been excavated at a well-documented enclosure at Killickaweeny, Co. Meath. It has been suggested that the enclosure represents the 'home of one or more generations of a wealthy farmer family such as a *bóaire* as described in the early medieval law tracts' from the 8-10th century A.D. (Walsh 2008). The excavation revealed clear evidence a central round house surrounded by two possible outhouses or workshops as well as the organization of the space into distinct for iron and textile production and animal corrals. A range of the enclosed 'settlement/cemetery' sites have also revealed often considerable evidence for ironworking through the early medieval period.

Johnstown 1, Co. Meath is one striking example where seven different metalworking areas were discovered containing both smelting and smithing hearths (Clarke & Carlin 2008). While a massive quantity of slag was recovered from the site, it was found that this was probably due more to the longevity of the practice and the inefficiency of the low temperature furnaces that were used (Clarke & Carlin 2008). Ironworking was instead more intermittent and was perhaps undertaken at a scale similar to that at the nearby settlement at Killickaweeny, Co. Kildare. A number of other 'settlement/cemetery' sites including Mount Offaly, Cabinteely, Co. Dublin (Malachy Conway 1998 & 1999, Excavations Bulletin- 98E0035) have also revealed evidence for significant ironworking evidence in some ways comparable to the above two sites.

Specialised iron working: ecclesiastical sites, royal sites and Viking towns

It has been suggested that specialised iron production by professional blacksmiths only occurred in association other specialised craft working including glass and copper working at high status sites (Walsh forthcoming).

Paul Steven's excavations at Clonfad, Co. Westmeath uncovered examples of specialised metalworking and craft working activities undertaken at an intensive level at this ecclesiastical site close to Lough Ennell. Tim Young's specialist analyses have revealed that the scale of ironworking on the site indicates that ecclesiastical bells were being produced on the site (Stevens 2006; Tim Young pers comm.).

Excavations at Kilpatrick, Co. Westmeath (Swan, D.L. 1973-81, Excavations Bulletin- E124) also revealed considerable evidence for ironworking and the potential production of a number of high status metalworking objects. Other ecclesiastical sites that have produced ironworking evidence include Downpatrick, Co. Down; Clonmacnoise, Co. Offaly; Tullylish, Co. Down (Ivens 1987); Glen Munire, Ballyman, Co. Dublin (O'Brien 1977-86, Excavations Bulletin- E182); Dunmisk, Co. Tyrone (Ivens 1988) and Tully, (Glebe, Site 43), Co. Dublin (Matthew Seaver & Valerie Keeley 2000-2002, Excavations Bulletin- 00E0758).

Evidence for ironworking in association with a whole range of other activities including bronze, bone, antler, leather, textile and woodworking have been discovered in a large number of excavations within the Viking Urban towns. Examples in Dublin that have produced ironworking evidence include Fishamble Street II (Wallace 1974-79, Excavations Bulletin- E172) and Winetavern Street (Brendan Ó Ríordáin 1970-72, Excavations Bulletin- E81). The excavations in this part of Dublin may have exposed evidence for specialised areas in which different crafts were undertaken. It is possible, although still not confirmed, that ironworking was in some ways specialised in Viking towns in the latter half of the early medieval period.

There is also good evidence for ferrous and non-ferrous metallurgy from the early medieval royal sites at Garranes, Co. Cork; Clogher, Co. Tyrone; Lagore, Co. Meath as well as Moynagh Lough crannog, Co. Meath. These sites are likely to have been of some status where both ironworking and other specialised activities such as glass production were undertaken in tandem with each other. An early medieval enclosure at Roestown, Co. Meath that was probably a high status site has revealed evidence for ferrous and non ferrous metalworking as well as possible glass working, which were all undertaken in tandem with each other (Kinsella 2007a, 15).

Early medieval copper and bronze working.

The evidence for non-ferrous working from archaeological excavations has recently been reviewed by Comber (2004 and 2008, 133-149). As well as reviewing the evidence from individual sites the earlier work published the crucibles from Lagore which had been omitted from the original excavation report. An earlier review of metal working from monastic sites was produced by Ryan (1988). The evidence for the production of bronze is much less extensive than iron (Table 7:2).

Table 7:2 Excavated Non-ferrous metalworking Evidence 1930-2004

Site	Site type	Metalworking features	Artefacts	Reference
Ardcloon, Co. Mayo	Ringfort	Hearth/furnace?	Lead ore	Rynne 1956 **JRSAI – page refs?**
Armagh, Cathedral Hill,	Ecclesiastical	Workshop area and hearths	Slag, ingot moulds, crucibles, tuyères, clay moulds, motif pieces, scrap bronze	Gaskell Brown and Harper 1984, 119, 124-151.
Armagh Scotch Street,	Cemetery		Crucible, copper wire	Lynn 1988, 82.
Armagh, English Street	Ecclesiastical		Crucible	Crothers 1999, 63, 67.
Beal Boru, Co. Clare	Earthwork		Motif piece	O'Kelly 1062
Ballinderry II, Co. Offaly	Crannog	No	Crucibles, clay moulds, stone ingot, motif piece	Hencken 1942, 50-1, 65-6.
Ballycatteen, Co. Cork	Ringfort		Crucibles	Ó Ríordáin and Hartnett 1943, 35
Ballyvourney, Co. Cork	House site/ecclesiastical		Crucible	O'Kelly 1952, 27.
Castle Screen 2, Co. Down.	Ringfort		Crucibles	Dickinson and Waterman 1958, 75-6.
Carraig Aille II, Limerick	Cashel		Crucibles	Ó Ríordáin 1949, 91-2
Cavanapole, C. Armagh	Ringfort		Crucible, tuyère	Crothers 1996:015
Cathair Fionnúrach, Co. Galway	Cashel	possible anvil stone, furnace pit (no stated what metal)	Crucible	Gibbons 1994:116; 1997;228
Cherryhound, Co. Dublin	Industrial		Crucibles, fragments of copper and copper alloy	McGowan 2004:0483
Clea Lakes, Co. Down	Crannog		2 crucible frags	Collins and Proudfoot 1959, 86.
Clogher, Co. Tyrone	Ringfort within earlier hill-fort		Crucibles, gold rubbing stone, lead pin, unfinished bronze brooch	Warner 1973. Youngs 1990, 186-7, 195, 198.
Clonfad, Co. Westmeath			'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.	King 2002, 14. King 1993:187, King 1995:240, King 1998:548
Clonmacnoise, National School,	Ecclesiastical		Crucible, clay mould, copper	Ó Floinn and King 1998, 123-4.

Site	Site type	Metalworking features	Artefacts	Reference
Co. Offaly			alloy ingot, gold scarp	
Coonagh West, Co. Limerick	Ringfort		Crucible frag	Taylor 2007, 77
Corranneary, Co. Cavan	Crannog		5 crucibles, two mould fragments	Davies, 1942 **page ref needed**
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 and Rynne 1961 **JRASI page ref needed**
Downpatrick, Cathedral Hill	Ecclesiastical		Mould and crucible fragments, bronze ingots, molten lead splashed	Ryan 1988, 43
Dunmisk, Co. Tyrone	Cemetery	Metal working hearths and furnaces	Crucibles, moulds, tuyères, slag	Ivens 1998, 28-36, 54-5.
Dublin, Christchurch Place	Urban		Crucibles	O'Riordain 1974:0014
Dunsilly, C. Antrim	Ringfort		Crucibles	McNeill 1992, 104.
Dunnyneill, Co. Down	Island trading post		Crucible	McCormick and Macdonald 2004, 8.
Garranes, Co. Cork	Ringfort	Workshop debris area	Unfinished brooch and pin, lumps of tin, stone ingot moulds, crucibles, tuyères.	Ó Ríordáin 1942, 86, 93, 98, 107-9, 121-2, 134-139.
Garryduff , Co. Cork	Ringfort	Paving and hearth?	Crucibles, 'blow pipe'	O'Kelly 1963, 95-99.
Granagh, Co. Galway	Inauguration site?		Crucible	Rynne 1971:18
Illaunloghan, Co. Kerry	Ecclesiastical site		Motif piece, moulds, tuyère	White Marshall and Walsh 2005, 19.
Gransha, Co. Down	Raised rath		Moulds, motif pieces, crucible	Lynn 1985, 88.
Iniscealtra, Co. Clare	Ecclesiastical	'copper working area and a furnace'	Motif-piece	Ryan 1988, 44.
Island McHugh, Co. Tyrone	Crannog		Crucibles	Davies 1950, 44
Kilgobbin, Stepaside, Co. Dublin	Ecclesiastical		Crucibles, slags (type unstated), clay mould	Bolger 2004:0647
Kilpatrick, Co. Meath	Ecclesiastical	Ironworking and non-ferrous working seem to have been undertaken in same area – see table xx	Mould, crucible	Swan 1995, 5,
Kiltiernan, Co.	Ecclesiastical	None	Crucibles, slag?	Waddell and

Site	Site type	Metalworking features	Artefacts	Reference
Galway.				Clyne 1995, 195-6.
Knowth, C. Meath	Enclosed settlement	Metalworking hearth	Crucibles (one for gold work), heating trays	Eogan 1974 *proa refs needed*
Lagore, Co. Meath	Crannog	None	Crucibles, motif pieces, clay moulds, stone ingot moulds, tuyères, copper ore.	Hencken 1950 126, 170-3, 240-1. Comber 2006, 137-178.
Letterkeen, C. Mayo.	Ringfort		Crucibles	Ó Ríordáin and McDermott 1952, 114.
Lisdoo, Co. Fermanagh	Ringfort	None	Crucibles	Brannon 1982, 57
Lisduggan 2 , Co. Cork	Ringfort		Crucible	Twohig 1989, 19
Lough Faughan, C. Down	Crannog	None	Crucibles (traces of copper and tin), moulds, slag (copper).	Collins 1955, 58-9,66, 74.
Marlinstown, Co. Westmeath	Ringfort	None	Crucibles	Keeley 1990:113 Keeley 1991:126
Movilla, Co. Down	Ecclesiastical	Possible furnace base	Crucibles, scrap copper alloy, slag	Ivens 1984 77-8, 93. Yates 1983, 61.
Moynagh, Co. Meath	Crannog	Two metalworking area and furnace	Crucibles, moulds, slag, motif pieces, tuyère	Bradley 1993. Youngs 1990, 178-184
Nendrum, C. Down	Ecclesiastical	None	Crucibles, ingot, bronze nodules, clay mould, motif pieces	Bourke 2007, 406-11.
Platin, C. Meath	Occupation site		Crucible and tuyère fragments	Lynch 2000:0774
Raheennamadra, Co. Limerick	Ringfort	None	Crucible	Stenberger 1967, 49
Rathgureen, Co. Galway	Ringfort (bivallate)	Ironworking furnace	Crucibles, tuyère?	Comber 2002, 171
Rathinaun, Co. Sligo	Crannog	None	Crucibles, mould fragments	Comber 2008, 131
Rathmullen, C. Down	Raised rath	None	Crucible fragment 'perhaps of early Christian date'	Lynn 1982, 145
Reask, Co. Kerry	Ecclesiastical	Metalworking areas, furnaces	Crucibles, furnace bottoms, tuyères, slag	Fanning 1981, 105-110, 117-120.
Roestown, Co. Meath	Enclosures		'crucible fragments, ingot moulds and bone trial pieces'	O'Hara 2007, 149
Sluggary, Co. Limerick	Ringfort (bivallate)	None	Moulds	Shee 1974:29
Tullylish, Co. Down	Ecclesiastical	Hearth, furnaces?	Crucibles, moulds, tuyères	Ivens 1987, 72, 76, 104-106

Copper ore has only been found at Lagore, Co. Meath Hencken 1950, 240-1) while lead ore has only been noted at Ardcloon, Co. Mayo (Rynne 1956). The meagre available evidence suggests

that the processing of copper ore is more likely to have taken place at its source. Two Early medieval smelting furnaces were found at the Ross Island copper copper mines near Killarney, Co. Kerry (O'Brien 2004). A furnace was also found at Moynagh crannog, Co. Meath but Bradley (1993, 77-80) believed that it was used for melting copper rather than smelting on the basis the there was very little slag on the site. A furnace at Movilla Abbey, Co. Down may seems also to have been used for melting as it was found in association with crucibles and scrap copper alloy (Ivens 1984, 77). Slag was also present but it is not clear if this was from iron or copper smelting. Iron slag, however, has definitely been identified on the site Yates (1983, 62). De Paor (1970:06) describes the discovery of a 'bronze working furnace at Iniscealtra but it is not stated if it was for smelting or melting. He does not, however the presence of either clay mould or crucible fragments.

It would seem therefore that most raw bronze was acquired in ingot form bronze ingots have been found at Nendrum (Bourke 1997, 407) and Downpatrick (Ryan 1988, 43), Co. Down and Clonmacnoise, Co. Offaly (Ó Floinn and King 1998, 123). Recycling bronze is evidence by the scarp found on several sites 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 metal worker's hoard from the River Blackwater, Co Tyrone (Bourke 1993) which contain a collection of cut-up pieces of ecclesiastical objects. Some of the bronze scrap at Clonmacnoise was also decorated (King 1998:485).

The main evidence for bronze-working on early medieval sites comes from the presence of crucibles, clay moulds and stone ingot moulds, with secondary evidence in the form of motif pieces and scrap metal. Most of the evidence is bronze working but evidence for gold-working was present at Clonmacnoise, Co. Offaly, Knowth, Co. Meath and Clogher, Co. Tyrone (Table 7:2). This table also shows that this evidence is much more limited than for iron-working during this period. There is also a clear bias towards high status secular sites and the monasteries. Most of the larger monasteries that have been extensively excavated have produced evidence for fine metalwork, including Clonmacnoise, Co. Offaly, Armagh, Downpatrick, Nendrum and Movilla, Co Down. Small monasteries, such as Reask and Illaunloughan Co. Kerry have also produced evidence.

Relatively little work has been undertaken on the analysis of crucible residues in Ireland since the initial overview of the subject by Moss (1927). The most extensive work was on the material from Lagore (Hencken 1950, 237-239). Surprising, a few of the crucibles provided evidence for the presence of iron but not copper, while most tended to show traces of iron along with copper. Hencken argues that this was not evidence of the crucibles for ironworking as the melting and casting of iron did not develop until the Middle Ages (*ibid.*) although Scott (1990, 3) suggests that it may have occasionally occurred at an earlier stage. Hencken (1950, 239) concluded that the traces of iron 'would have come into the crucibles as impurities in the crudely smelted copper'. Crucibles with residues of gold have been found at Knowth and Clonmacnoise (Comber 2008, 140). 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, 134-9) but no clear picture has emerged. The subject has most recently been summarised by Comber 2004, 33-36: 2008,139-141).

Comber (*ibid.*, 146-148)) has also analysed the location of fine metal-working areas and concluded that they are found within the enclosures but usually away from houses. At Dunmisk, Co. Tyrone and Knowth, Co. Meath the ironworking and bronze-working areas were locates at different of the site (*ibid.*). At Reask, however, ironworking and bronze-working seems to have taken place within hut G (Fanning 1981, 89). This is also one of the few sites where bronze-working appears to have been an indoor activity. At Iniscealtra (de Paor 1974:0009) bronze-working seems to have taken place within a flimsy circular wooden hut.

Evidence for bronze and copper-alloy working have been identified in a diverse range of ecclesiastical contexts from western monastic contexts (e.g. Illaunloughan) to established

significant centres of early medieval religious worship (e.g. Armagh, Downpatrick, Iniscealtra, Dunmisk and Clonmacnoise).

Some of these important sites including Armagh, Clonfad, Clonmacnoise, Movilla and Dunmisk were clearly engaged in highly specialised metalworking in the early medieval period. Extensive metalworking evidence in the form of a copper-working area and a furnace was uncovered during De Paor's excavations at Inishcealtra (Ryan 1988, 44). The excavations at Clonfad (Stevens 2007, 43) uncovered considerable evidence for the production of high quality wrought iron bells and ornamental bronze-working (Stevens 2007, 43). The excavations at Cathedral Hill, Armagh have uncovered evidence for decorative moulds, trial pieces and enamel working suggesting high quality craftsmanship which can be paralleled with broadly contemporary evidence from high status ringforts and crannogs like Lagore crannog, Co. Meath (Hencken 1950), Moynagh Lough crannog (see above), Garranes ringfort, Co. Cork (Ó Ríordáin 1942).

Early medieval glass, amber, vitreous materials and stone

Glass appears to have been a substance of some status in the early medieval period. There is some evidence to suggest that glass was directly imported into Ireland and was melted and reworked on a number of select important secular and ecclesiastical sites (Henderson 1984, 98-99). However, evidence for working with vitreous material is in general, extremely limited (Table 7:3). It had long been thought that glass-working in Ireland comprised the recycling of old pieces of glass cullet (Edwards 1990, 92). The glass fragments found at Barranes, Ballycatteen and Lagore are often described as scrap glass (*ibid* Harden 1956). Bourke (2004, 180) takes issue with this. He notes that the beads and studs on these sites differ in colour from the vessel glass. He believes that the vessels were imported in a complete state for drinking purposes.

Henderson (1988) has for the first time identified the manufacture of glass from its constituent components at Dunmisk, Co. Tyrone, on the basis of crucible residues. Glass working and bronze-working were found in the same part of the site at Dunmisk (Ivens 1989, 57) and it is likely that similar type crucibles were used in both cases. Further analysis of crucible residues from other Irish sites in needed to provide more information on the manufacturing process. A growing number of ecclesiastical sites have also uncovered some evidence for glass-working. There is evidence for the working of glass at a number of ecclesiastical sites including Movilla Abbey (Henderson 1984, 98-99), Dunmisk (Ivens,1989, 57) and Cathedral Hill, (Harden 1984, 135) and Scotch Street (Lynn & McDowell 1988, 60-61; Swift 1998, 117) in Armagh. It appears that specialist smiths may have been employed by these secular and ecclesiastical classes for the production of decorative iron, bronze, copper and glass objects in this period.

Table 7:3. Excavated Evidence for vitreous material and amber working 1930-2004

Site	Site type	Evidence	Reference
Armagh, Cathedral Hill	Ecclesiastical	Enamel and glass rods	Gaskill-Brown and Harper 1984, 122, 135-
Armagh, English Street	Ecclesiastical	Glass rods	Crothers, 1999, 63.
Ballycatteen, Co. Cork	Ringfort	Blue glass rod, scrap 'Roman of sub-Roman' glass	Ó Ríordáin 1943, 26. Burke 1994, 196.
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 1948, 91, 102

Site	Site type	Evidence	Reference
Dunmisk, Co. Tyrone	Cemetery with settlement	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, 115-7, 122
Garranes, Co. Cork	Ringfort	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 1942, 118-9, 121.
Garryduff, Co. Cork	Ringfort	'Blob of blue glass'. Glass vessel fragment – scrap?	O'Kelly 1963, 77
Knowth, Co. Meath	Settlement site	'enamel working'. Crucibles?	Eogan 1972:0006. **Is this in 1974 pub**
Lagore, Co. Meath	Crannog	Moulds for glass studs, blue glass rods, millefiori glass rod, scrap glass? Roman or post Roman.	Hencken 127-30, 132
Lough Faughan, Co. Down	Crannog	Glass vessel figment – scrap?	Colling 1995, 63.
Movilla, Co. Down	Ecclesiastical	Glass rods, glass globules	Ivens 1984, 100.
Moynagh crannog	Crannog	Lump of yellow enamel	Bradley 1987:39

Table 7:4 presents the stone working evidence from early medieval excavations. Lignite working is the main activity represented along with the making of spindle whorls and querns.

Table 7:4. Excavated Early Medieval Stone working evidence 1930-2004

Site	Site type	Evidence	Reference
Armagh, Cathedral Hill	Ecclesiastical	Unfinished lignite bracelets, lignite central waste pieces	Gaskell Brown and Harper 1984, 136-7.
Armagh, English Street	Ecclesiastical	Unfinished lignite objects and off-cuts	Crothers 1999, 63, 66.
Ballyegan, Co. Kerry	Cashel	Unfinished quern stone	Byrne 1991:065
Ballybrolly, Co. Armagh	Enclosure	Lignite central waste pieces	Lynn 1983, 50
Cahercommaun, Co. Clare	Cashel	Lignite central waste pieces; Incompletely perforated stone spindle whorls	Hencken 1938, 41-4.
Carraig Aille II, Co. Limerick	Cashel	Unfinished spindle whorls.	Ó Ríordáin 1948, 86.
Castlescreen II, Co. Down	Ringfort and motte	Unfinished spindle whorls.	Dickinson and Waterman 1959, 80.
Cush, Co. Limerick	Ringforts	Unfinished spindle whorl	Ó Ríordáin 1940, 158.
Dublin, Fishamble St.	Urban	Amber work shop	Wallace 1977-9:0037 **better ref anyone?**

Site	Site type	Evidence	Reference
Feltrim Hill, Co. Dublin	Cashel	Lignite central waste pieces	Hartnett and Eogan 1964, 28-9?
Garryduff, Co. Cork	Ringfort	Unfinished spindle whorls	O'Kelly 1963, 89.
Iniskea, Co. Mayo	Ecclesiastical	Spindle whorls broken during drilling. Chlorite waste.	Henry 1952, JRSAI
Lagore, Co. Meath.	Crannog	Unfinished quern stone	Hencken 1950, 174.
Lislear, Co. Tyrone	Ringfort	Unfinished lignite bracelet fragment	Simpson 1987:46
Moynagh, Co. Meath	Crannog	Unfinished quern stones	Bradley 1997
Oldcourt, C. Cork	Ringfort		Murphy and Ó Cuileanáin 1961, page ref
Tullylish, Co. Down	Ecclesiastical	Unfinished lignite rings	Ivens 1987, 107-8.
Reask, Co. Kerry	Ecclesiastical	Spindle whorl discarded before use.	Fanning 1981, 125.

Early medieval craft working with organic materials: wood, textiles and leather:

Background

Early medieval crafts also involved the manufacturing of objects in wood, leather, bone and antler and the use of various types of textiles. Table 7:5 presents the evidence for woodworking, leatherworking and textile working. The table does not include tools as some tools can be used for a variety of crafts. The only exception is the spindle whorl which can be exclusively associated with textile working. Comber (2008) has discussed the evidence for these craft-working activities that includes consideration of the tools that might have been used. Pieces of antler hat were not 'objects' are taken as evidence for antler working and considered as off cuts. Evidence for woodworking is confined to sites with waterlogged deposits and there is a clear bias towards crannogs. Even on these sites, however, the evidence may be under-represented as evidence for craft-working waste may not have been recorded.

Textile Production

Early medieval textiles and dress rarely survive archaeologically except in very extremely waterlogged conditions such as at Lagore, Co. Meath (Edwards 1990, 81). The equipment used in the production of cloth and very occasional representations of dress on stone sculpture and manuscripts represent the principal surviving archaeological forms for this activity. Evidence for the harvesting and spinning of cloth have been identified in the form of iron shears, spindle whorls, stone loom weights. Archaeological evidence for the processes of textile production has been identified at a number of sites including Clonfad, Co. Westmeath (Stevens 2007, 43). Excavations at this site revealed an iron shears and a bone object known as a weft-beater which was used in the production of textiles and wool in the early medieval period (Stevens 2007, 43). Evidence for the extraction and production and of dog whelk shells for dying of clothing has been identified at on the island of Inishkea North, C. Mayo (Henry 1952,163-78) while other forms of dyes such as wood pods were recovered from the raised ringfort at Deer Park Farms, Co. Antrim (Lynn 1989, 197).

Hodkinson (1987) considered the evidence for weaving in Ireland during his period and noted the paucity of loom weights compares with Anglo-Saxon England. He concluded that the Irish used a loom that did not utilise loom weights and the so-called loom weights from were used for a different purpose. The evidence is spread across both ecclesiastical and secular sites and there is no clear difference between high and low status sites. I may well be that certain aspects of this activity was concentrated on high status sites. It is perhaps surprising to find

the manufacture of quern stones occurring at Lagore and Moynagh crannogs. It is not clear if the intensity of some aspects of the evidence, e.g. spindle whorls at Carraig Aille, is due to the fact that these sites were centres for such activity or simply because more of the site was excavated.

Table 7:5. Excavated Early Medieval Craft working evidence (organic materials) 1930-2004

The quantification of spindle whorls is based on Hodkinson 1997, 49-50.

Site name	Site type	Craft type	Evidence	Reference
Armagh, Cathedral Hill	Ecclesiastical	Antler working	Sawn antler waste	McCormick and Murray 2007, 196
Balriggan, Co. Louth	Enclosures	Textile working	Whorl	Delaney 2003:1226
Ballinderry I, Co. Westmeath	Crannog	Textile working	Stone whorl? (1)	Hencken 1940, 146-7.
Ballinderry II, Co. Offaly	Crannog	Leather working	Leather fragments (scraps?)	Hencken 1942, 58.
Ballinderry II, C. Offaly	Crannog	Textile working	Bone (6) and stone (4) whorls	Hencken 1942, 55, 64
Ballycateen, Co. Cork	Ringfort	Textile working	Stone whorl (1)	(Ó Ríordáin and Hartnett 1943, 31
Ballyfounder, Co. Down	Ringfort	Textile working	Stone whorls (number sot specified)	Waterman 1958, 49
Ballymacash, Co. Antrim	Ringfort	Textile working	Stone whorl (1)	Jope and Ivens 1998, 120
Ballybrolly, Co. Armagh	Ringfort	Textile working	Stone whorl (1)	Lynn 1983, 62-3.
Ballyvourney, Co. Cork	House site	Textile working	Spindle whorl (1)	Kelly 1952, 31
Ballywillwill, Co. Down	Ringfort	Textile working	Stone whorl (1)	Waterman and Collins 1952, 81.
Bowling Green, Co. Tipperary.	Ring fort?	Textile working	Stone whorl (1)	Fanning 1971, 14-15
Cahercommaun, Co. Clare	Cashel	Textile working	Whorls of stone, antler and bone (53)	Hencken 1938, 43-4
Cahercommaun, Co. Clare	Cashel	Antler working	Antler off cuts	Hencken 1938, 63
Caherlehillan, Co. Kerry	Ecclesiastical	Textile working	Spindle whorls	Sheehan 1993:118
Carn, Co. Fermanagh	Cashel	Textile working	Bone whorl (1)	Brannon 1982, 63
Carraig Aille, Co. Limerick	Cashel	Textile working	Carraig Aille 1: Bone whorls (12), stone whorls (10); Carraig Aille II, bone (12), stone (14) + 5 unfinished, Spectacles, bone (3), stone (2).	Ó Ríordáin 1948, 83, 86, 94, 99-100.
Carraig Aille II, Co. Limerick	Cashel	Bone working	Unfinished bone pins	Ó Ríordáin 1948, 83
Castlescreen I, Co. Down	Ringfort	Textile working	Stone whorl (1)	Dickinson and Waterman, 1960, 72.
Castlescreen II, Co. Down	Ringfort and motte	Textile working	Stone spindle whorls (Phase 2) (5 – three unfinished)	Dickinson and Waterman 1959, 79-80.
Church Island, C. Kerry	Ecclesiastical	Textile working	Stone whorl (1)	O'Kelly 1958, 113.
Clea Lakes, Co. Down	Crannog	Textile working	Stone whorls (2)	Collins and Proudfoot 1959, 98

Site name	Site type	Craft type	Evidence	Reference
Clonfad, Co. Westmeath	Ecclesiastical	Bone/antler working	Bone off cuts	Stevens 2006, 11
Clonmacnoise, New Graveyard, Co. Offaly	Ecclesiastical	Textile working	Whorl (1)	King 1992:157
Clonmacnoise, Co. Offaly	Ecclesiastical	Antler working	Antler off-cuts	McCormick and Murray 2007, 217
Coarha, Co. Kerry	Clochán	Textile working	Stone whorls	Hayden 1994:119
Cush, Co. Limerick	Ringforts	Textile working	Stone whorls (4), loom weights (2)	Ó Ríordáin 1940, 158.
Deerpark Farms, C. Antrim	Raised rath	Leatherworking	Wooden lasts, leather shoe fragments	Neil 2001, 14-15
Deerpark Farms, C. Antrim	Raised rath	Antler working	Antler off cuts	McCormick and Murray 2007, 221.
Dressagoagh, Co. Armagh	Ringfort	Textile working	Bone whorl (1)	Collins 1996, 125-6.
Dublin, High Street/Winetavern Street	Urban	Textile working	'Spindle whorls'	O'Riordain 1970, 17.
Dublin, Christchurch Place	Urban	Textile working	'Weaving tablets and bone spindle whorls'	O'Riordain 1974:0014
Dublin, Christchurch Place	Urban	Bone/antler working	Antler comb blanks	O'Riordain 1974:0014
Dublin, Fishamble St.	Urban	Antler working	Antler waste	McCormick and Murray 2007, 231
Dún Eoghanachta, Inis Mór, Co. Galway	Cashel	Antler working	Antler waste fragments	McCormick and Murray 2007, 237.
Dunsilly, Co. Antrim	Ringfort	Textile working	Stone whorls (2)	McNeill 1992, 105.
Feltrim Hill, Co. Dublin	Ringfort?	Textile working	Stone whorl 1	Hartnett and Eogan 1964, 32.
Frenchgrove, Co. Mayo	Crannog	Textile working	Whorl	McDermott 1998:488
Garranes, Co. Cork	Ringfort	Textile working	Stone whorls (3) and loom weights? (3)	Ó Ríordáin 1942, 111
Garryduff, C. Cork	Ringfort	Textile working	Whorls (27 stone and 1 bone)	O'Kelly 1993, 66 89-90,
Grange, Co. Limerick	Hit site?	Textile working	Whorl 1	Ó Ríordáin 1949,
Grannagh, Co. Galway	Inauguration site?	Textile working	Bone whorl	Rynne 1971:18.
Gransha, Co. Down	Raised rath	Textile working	Whorls (number unspecified)	Lynn 1985, 88.
Illaunloughan, Co. Kerry	Ecclesiastical	Antler working	Antler waste	McCormick and Murray 2007, 239
Illaunloughan, Co. Kerry	Ecclesiastical	Textile working	Stone whorls (3)	Marshall White and Walsh 2005, 193)
Inishcealtra, Co. Clare	Ecclesiastical	Bone/antler working	Comb blanks	De Paor 1971:10
Iniskea North, Co. Mayo	Sand hill site	Textile working	Bone (1) and stone whorls (1)	Henry 1945, Fig. 10.
Kells, Co. Meath	Ecclesiastical	Textile working	Stone whorl	Byrne 1988:57
Killederdadrum, Co. Tipperary	Ecclesiastical	Textile working	Stone whorls (2)	Manning 1984, 258
Killickaweeny, Co. Meath	Enclosure	Textile working	Antler (1) and stone (1) whorls	Carlin et al 2008, 44.
Killyliss, Co.	Ringfort	Bone working	Sawn bone waste	Ivens 1984, 29.

Site name	Site type	Craft type	Evidence	Reference
Fermanagh				
Knowth, Co. Meath	Settlement	Textile working	'Spindle-whorls'	Eogan 1991, 120.
Knowth, Site M, Co. Meath	Secular cemetery	Textile working	Whorl – material unstated (1)	Stout and Stout 2008, 65, 111.
Lagore, Co. Meath	Crannog	Woodworking, leather working	Cone shaped lathe turning wasters, rough out bowl, leather scraps	Hencken 1950, 157, 165, 181
Lagore, C. Meath	Crannog	Textile working	Stone (8) and bone whorls (20) – excludes old finds.	Hencken 1950, 175, 194.
Leacanabuaile, Co. Kerry	Cashel	Textile working	Stone whorl (1), loom weight (1)	Ó Ríordáin and Foy 1941, 93
Lisduggan I, Co. Cork	Ringfort	Textile working	Stone whorls (number not specified)	Twohig 1989, 17
Lismahon, C. Down	Ringfort and motte	Textile working	Whorls (6? **check**)	Waterman 1959.
Lissachigel, Co. Louth	Ringfort	Textile working	Stone whorl (1)	Davis 1939, 225
Lissue, Co. Antrim	Ringfort	Woodworking	Cone shaped lathe turning wasters	Bersu 1947, 54-55
Lough Faughan, Co. Down	Crannog	Textile working	Stone whorls (4)	Collins 1955, 68
Lough Faughan, Co. Down	Crannog	Antler working	Antler waste	McCormick and Murray 2007, 251.
Moynagh, Co. Meath	Crannog	Woodworking	Cache of staves	Bradley 1997, **check**
Moyne, Co. Mayo	Ecclesiastical	Antler working and horn working	Sawn antler off cuts and chopped cattle horn-core	McCormick and Murray 2007, 261.
Millockstown, Co. Louth	Settlement cemetery	Textile working	Stone whorl (1)	Manning 1986, 160
Narraghmore, Co. Kildare	Ringfort?	Textile working	Stone whorl (1)	Fanning 1976, 175-6
Nendrum, Co. Down	Ecclesiastical	Textile working	Whorls	Lawlor 1925,
Oughtymore, Co. Derry	Sand hill site	Textile working	Antler spindle whorl (1)	Mallory and Woodman 1984, 53-4.
Rathbeg, C. Antrim	Ringfort	Textile working	Stone whorl? (1)	Warhurst 1979, 96-7
Rathgureen, Co. Galway	Ringfort	Antler working	Antler off cuts	McCormick and Murray 2007, 265
Rathmullen, Co. Down	Raised rath	Textile working	Stone spindle whorls (8) and possible loom weights (2)	Lynn 1982, 132-134
Raystown, Co. Meath	Cemetery settlement	Textile working	Bone spindle whorl	Seaver 2004:1334
Roestown, Co. Meath	Enclosures	Bone/antler working	Comb blanks	O'Hara 2007, 148.
Seacash, Co. Antrim	Ringfort	Leatherworking, textile working	Leather scrap, stone whorl (1)	Lynn 1978, 67, 69,
Shaneen Park, Co. Antrim	Ringfort	Textile working	Stone loom weight (1)	Proudfoot 1958, 30-31
Smithstown, Co. Meath	Souterrains	Textile working	Bone whorl	Gowen 1998:55
Spittle Ballee, Co. Down.	Ringfort	Textile working	Stone whorl (1)	Waterman 1958, 63
Uisneach, Co. Westmeath	Ringfort	Textile working	Stone whorl (1)	Macalister and Praeger, Co. Westmeath, 117.

Site name	Site type	Craft type	Evidence	Reference
White Fort, Drumaroad, Co. Down	Ringfort	Textile working	Stone whorl (1)	Waterman 1956, 86.
Woodstown, Co. Waterford	Viking settlement	Textile working	'Fishing weight/spindle whorl'	Russell 2003:1915

Bone, antler and horn

Objects made from animal skeletal remains were very common throughout the early medieval period. A whole range of objects used for general domestic activities (e.g. bone knives and handles), textile production (e.g. spindle whorls and needles), as well as items of personal adornment and recreation (e.g. pins, combs and gaming pieces) were produced principally using bone. Antler tines were collected in the woods in late winter and early spring when the dears had shed their old antlers. It was also used to produce a range of domestic items though the most characteristic object produced using it was the comb (Edwards 1990, 84). Evidence for antler working in the form of antler waste, cut, and reworked tines has been identified at a growing number of sites including the unenclosed cemetery at Dooey, Co. Donegal. Excavations in more recent years have also uncovered a growing body of evidence for bone and antler working though much of this information still awaits complete publication.

Excavation beside Clogher cathedral uncovered the remains of a bronze working site and a stone-lined well (Warner, R 1974, Exc. Bulletin). It was suggested that sawn antlers tines, bones recovered from the well was early medieval in date. Traces of bone and antler working were identified at St. Peter's church, Waterford (Hayden 19988- E435) and at Cormac's Chapel, Cashel, Co. Tipperary (Hodkinson 1994, 171). Antler waste has also been identified inside the fill of ditches at Derrynaflan, Co. Tipperary (Floinn 1986 & 87, Exc. Bulletin), Kells, Co. Meath (Byrne, G 1988, Exc. Bulletin). Evidence for antler working and the production of bone combs have also been excavated at Iniscealtra, Co. Clare (de Paor 1970-76 & 1980-84, Exc. Bulletin) and in a number of contexts at Clonmacnoise including the New graveyard (King, H 1990-98, Exc. Bulletin), beneath the Cross of the Scriptures to the west of the Cathedral (King, H 1994, Exc. Bulletin) and close to the medieval castle (Murphy, D 1999, Exc. Bulletin). A number of contexts at Scotch Street and Market Street (Gilmore, S 1998, Exc. Bulletin) in Armagh City have also uncovered extensive evidence for early medieval bone and antler working debris. The excavations at Scotch Street were significant because the evidence was found to have been preceded by an earlier 5-7th century ecclesiastical cemetery described in the historical sources as *Temple na Fertae* (See Lynn 1988, 69). Evidence for antler and bone working at Kilpatrick, Co. Westmeath has been discussed by Swan (1994-95). The recent excavations at Clonfad have also brought to light considerable evidence for both bone and antler-working during the early medieval period (Stevens 2007, 43).

Chapter 8. Early medieval trade and exchange

Introduction

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 the 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. In one recent major work, '*Origins of the European Economy* (McCormick 2001), only passing reference is given to Ireland, or the Irish trade. It is necessary, nevertheless, to understand how Western European trade routes developed in the latter half of the first millennium in order to recognise their implications on Irish archaeology from this period. The thesis outlined by Henri Irene in the early-twentieth century is still substantially accepted as the basis for subsequent study. Irene argued that Western European trade routes during the Early Medieval period continued to be dominated by the economic sphere of influence of the Western Roman Empire (Irene 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 still widely accepted – and is strongly supported by the Irish evidence – Irene's rationale for this movement has been attacked for being over-simplistic (McCormick 2001, 575). 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 (Diehard 1971, 350-1), have also been argued as reasons for this northward shift in trade.

Irene's study was predominantly focused on the rise of the Carolingian Empire, and thus 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-Norse) 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 imports into Ireland from overseas, 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 phases of trade in Early Medieval Ireland – Mediterranean trade (c. A.D. 400 – 600); Gaul-Frankish trade (c. A.D. 600 - 800); and Anglo-Norse 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.

External trade - i.e. imports and exports - during the earlier phases - *c*. A.D. 400 - A.D. 800 - have been the subject of most academic interest (Wooding 1996; Campbell 2007), 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 *tuath* on the island of Ireland – may have played a more significant role than hitherto recognised in reinforcing social relationships as well as a means of distributing various goods throughout the community. The nature of this trade makes it often difficult to distinguish in the archaeological record, and further work is still required in this area. As such this chapter will focus primarily on external trade, and internal trade will be discussed at the end of the section.

Early Medieval Ireland and trade with the Mediterranean (c. AD 400 - 600)

Background

The archaeological evidence for Mediterranean imports into Ireland has been described and discussed by Wean Campbell (1996, 2007). The early medieval ringfort at Garranes, Co. Cork (Ó Ríordáin 1942); and the cemetery/settlement at Cabinteely (Mount Offaly), Co. Dublin (Conway 1998:124) (Table 8.1) are the only two sites in Ireland to produce sherds of Phocaean Red Slipware (PRS), which, along with African red Slipware (ARS), constitutes the pottery group formerly described as 'A'-ware (Thomas 1954; Thomas 1959).

Table 8.1: Sherds of Phocaean Red Slipware (PRS) – 'A-Ware' – found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Cabinteely, Co. Dublin (Mount Offaly)	Ecclesiastical Site	Sherds of Phocaean Red Slipware (A-ware)	Conway 1998:124
Garranes, Co. Cork	Multivallate Rath	Forty sherds of Phocaean Red Slipware (A-ware)	Ó Ríordáin 1942,

Phocaean Red Slipware/Phocaean Red-Slipped Ware (PRS) originated in modern-day Turkey, and had a 'soft orange-red, pink or brownish-red fabric', covered by a dark red wash (Thomas 1959, 90). It is quite similar to the earlier Gaulish Samian ware, or *terra sigillata*, and it is possible that some of the Samian ware finds from Ireland may be misidentified PRS (Table 8.2). Phocaean Red Slipware was traded to Ireland, Britain and Spain from the mid-fifth to the mid-sixth centuries A.D (Laing & Longley 2006, 139), and that found in the British Isles coincides with Hayes' 'Form 3' (1972, 464) which can be dated to A.D. 500 ± 25 (*ibid.* 14).

Table 8.2: Sherds of Roman/Late-Roman Pottery found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Ballynahinch, Co. Offaly (Ballinderry crannog No. 2)	Crannog	One sherd of Arretine-ware.	Hencken 1942.
Dalkey Island, Co. Dublin	Emporium	Two sherds of Samian ware	Liversage 1968, 112-113; Bateson 1973, 67.
Dundrum, Co. Down	Rath – re-modelled into castle	One sherd of Samian ware	Collins 1959, 12; Bateson 1973, 65.
Freestone Hill, Co. Kilkenny	Hill fort	Two sherds of 'late Roman' pottery	Raftery 1969, 44-6; Bateson 1973, 65.

Townland/Site Name	Site Type	Comments	Reference
Knowth, Co. Knowth	Raised Rath	One sherd of *terra sigillata*	Eogan 1966, 375.
Lagore, Co. Meath	Crannog	Four sherds of Samian ware	Hencken 1950, 123-4; Bateson 1973, 68.
Lislear, Co. Tyrone (Island McHugh)	Crannog	One sherd of Samian ware	Davies 1950, 54; Jope 1952, 136; Bateson 1973, 65.
Lough Faughan, Co. Down	Crannog	One sherd of Samian ware	Collins 1955, 55-58; Bateson 1973, 65.
Loughshinny, Co. Dublin	Promontory Fort	Sherds of 'late Roman' pottery	Collins 1960, 39; Bateson 1973, 70.
Tara, Co. Meath	Multivallate rath	Fourteen sherds of Samian ware	Collins 1960, 39; Bateson 1973, 72.

The nature of this type of PRS suggests that it may have been imported as table ware. In contrast, the far more numerous sherds of Late Roman Amphorae - Thomas' 'B-ware' (1954; 1959) - belong to storage jars. It was most probably the contents of these amphorae which were being imported into Ireland at his time, and the ceramic containers were only incidental to this process.

Charles Thomas (1959, 92) subdivided 'B ware' into Bi, Bii, Biii 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 nineteen sites in Ireland (Table 8.3), and ecclesiastical sites dominate this assemblage (58%). In most cases the pottery has only been generally classified as 'B-ware', but sherds of LR1 (Bii) amphorae were identified at Blanchfieldstown, Co. Kilkenny (Lennon 2004:0868), Kilgrovan, Co. Waterford (Purcell 2003:1882), and Lurgoe (Derrynaflan), Co. Tipperary (O Floinn 1985:53); and LR2 (Bi) amphorae at Cabinteely (Mount Offaly), Co. Dublin (Conway 1998:124), Clogher Demesne (Clogher), Co. Tyrone (Warner 1972:0031), and Reask, Co. Kerry (Fanning 1981, 113).

Table 8.3: Sherds of Late Roman amphorae –'B-ware' – found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Ballynavenooragh, Co. Galway (Cathair Fionnurach)	Cashel	Possible B-ware, or E-ware, sherds	Gibbons 1994:116.
Blanchfieldsland, Co. Kilkenny	Rath	Two sherds of LR1 amphorae (Bii)	Lennon 2004:0868
Cabinteely, Co. Dublin (Mount Offaly)	Ecclesiastical Site	Sherds of LR2 amphorae (Bi)	Conway 1998:124
Caherlihillan, Co. Kerry	Ecclesiastical Site	Sherds of B-ware	Sheahan 1994:118
Cashel, Co. Tipperary (Cormac's Chapel)	Ecclesiastical Site	Sherds of B-ware	Hodkinson 1993:203
Cherrywood, Co. Dublin	Ecclesiastical site?	Sherd of B-ware	O Neill 1999:169
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	LPRIA amphora/jug	Warner 1972:0031
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	Sherds of LR2 amphorae (Bi)	Warner 1972:0031; Warner 1973:0033; Warner 1974:0037
Colp West, Co. Meath	Ecclesiastical Site	Sherds of B-ware	Gowen 1988:51
Dalkey Island, Co. Dublin	Emporium	Sherds of LRA amphorae (Biii)	Liversage 1968, 165-168.
Garranes, Co. Cork	Multivallate Rath	Two hundred sherds of B-ware	Ó Ríordáin 1942
Garryduff, Co. Cork	Rath	Sherds of B-ware	O'Kelly 1962.

Townland/Site Name	Site Type	Comments	Reference
(Garryduff 1)			
Gransha, Co. Down	Raised Rath	Sherds of B-ware	Lynn 1985.
Iniscealtra, Co. Clare	Ecclesiastical Site	?	Campbell 2007, xviii; Comber 2008, 168.
Kilgrovan, Co. Waterford	Ecclesiastical Site	Sherds of LR1 amphorae (Bii)	Purcell 2003:1882
Lisnacaheragh, Co. Cork (Garranes II)	Rath	Sherd of B-ware	O'Donnell 1991:022
Lurgoe, Co. Tipperary (Derrynaflan)	Ecclesiastical Site	Sherds of LR1 amphorae (Bii)	O Floinn 1985:53.
The Point, Lambay Island, Co. Dublin	Burial Site	Sherds of B-ware	Cooney 1995:100
Randalstown, Co. Meath (St. Anne's)	Ecclesiastical Site	Sherds of B-ware	Kelly 1975:32
Reask, Co. Kerry	Ecclesiastical Site	Six sherds of LR1 amphorae (Bii)	Fanning 1981, 113
Reask, Co. Kerry	Ecclesiastical Site	One sherd of LRA amphorae (Biii)	Fanning 1981, 113
Reask, Co. Kerry	Ecclesiastical Site	Two sherds of unclassified B-ware	Fanning 1981, 113

LR1 (Bii) was probably manufactured in south-east Asia Minor (Empereur & Picon 1989); and LR2 (Bi) was produced in the Peloponnese in southern Greece (Megaw & Jones 1983; Munn 1985), and possibly the islands of Chios and Kos (Vroom 2003, 143). Sherds of 'Biii' were recovered from Dalkey Island, Co. Dublin (Liversage 1968, 165-8), and Reask, Co. Kerry (Fanning 1981, 113), but the origin of these amphorae has not been identified, and Campbell refers to these as LRA (Campbell 2007, 19). Thomas has argued that the shape of LR1 amphorae (Bii) means that they were used for transporting olive oil (1959, 92), and that the shape of LR2 amphorae (Bi) means that they were used for transporting wine (*ibid*.). Work on the late Roman ship wreck off the island of Yassi Ada (which sank off the coast of Kos) has shown, however, that form did not necessarily follow function with amphorae, and some of the amphorae recovered from the wreck showed evidence for having been used to carry various materials at different times (Bass & 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. These items will be discussed in greater detail in the following section.

Early Medieval Ireland and Gaulo-Frankish Trade (c. A.D. 600-800)

Background

By the seventh century AD, the visible archaeological evidence suggests that there is a shift in emphasis in trade away from the Mediterranean and to continental Europe. Indeed, there is also evidence that early medieval Ireland, with its growing population, wealthy lordly classes and 'booming' agricultural economy, becomes a significant region in the western European economy. Our principal archaeological evidence consists of E-ware, glass and weaponry being 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.

Imported Pottery:

'E-ware' pottery is the most frequently discovered type of imported pottery in the British Isles, and has been identified on over 40 Irish sites (Table 8.4; Doyle 1998, 93). As with the earlier imported pottery, E-ware tends to be recovered from ecclesiastical sites and high status sites (multivallate raths and crannogs). A regional variation is also evident in the distribution of E-ware in Ireland, and almost half of the sites that contained E-ware are located in eastern/central Ulster (Campbell 2007, 115).

Table 8.4: Sherds of E-ware found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Armagh City, Co. Armagh (Cathedral Hill)	Ecclesiastical Site	One sherd of E-ware	Brown & Harper 1984, 143.
Ballycatteen, Co. Cork	Multivallate Rath	Sixty sherds of E_1-ware	Ó Ríordáin & Hartnett 1943.
Ballyfounder, Co. Down	Raised Rath	One sherd of E_2-ware	Waterman 1958.
Ballynahinch, Co. Offaly (Ballinderry 2)	Crannog	Sherds of E_1-ware	Hencken 1942.
Ballynavenooragh, Co. Galway (Cathair Fionnurach)	Cashel	Possible B-ware, or E-ware, sherds	Gibbons 1994:116.
Balrothery, Co. Dublin (Rosepark)	Enclosure	Large number of sherds of E-ware	Baker 1999:162 Carroll 2000:0209; Carroll 2001:334
Brittas, Co. Meath (Moynagh Lough)	Crannog	Sherds of E-ware	Bradley 1982-3, 24; Bradley 1995:228
Cabinteely , Co. Dublin (Mount Offaly)	Ecclesiastical Site	Sherds of E_5-ware	Conway 1998:124
Caherlihillan, Co. Kerry	Ecclesiastical Site	Sherds of E-ware	Sheahan 1994:118
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	Multiple sherds of E_1-ware	Warner 1971:0032; Warner 1973:0033; Warner 1974:0037; Warner 1975:35.
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	Multiple sherds of E_2-ware	Warner 1971:0032; Warner 1973:0033; Warner 1974:0037; Warner 1975:35.
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	Multiple sherds of E_4-ware	Warner 1971:0032; Warner 1973:0033; Warner 1974:0037; Warner 1975:35.
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	Multiple sherds of E_5-ware	Warner 1971:0032; Warner 1973:0033; Warner 1974:0037; Warner 1975:35.
Clonmacnoise, Co. Offaly	Ecclesiastical Site	Sherds of E_3-ware	King 1991:110; King 1992:157.
Colp West, Co. Meath	Ecclesiastical Site	Sherds of E-ware	Gowen 1988:51
Corbetstown, Co. Westmeath (Kilpatrick/Killucan)	Ecclesiastical Site	Sherds of E-ware	Swan 1980-4:0199

Townland/Site Name	Site Type	Comments	Reference
Corbetstown, Co. Westmeath (Kilpatrick/Killucan)	Ecclesiastical Site	Sherd of E_4-ware	Swan 1976; Swan 1994-1995.
Cullybackey, Co. Antrim (Markstown)	Souterrain	One sherd of E-ware	McSparron 2001:014
Dalkey Island, Co. Dublin	Emporium	Multiple sherds of E_1-ware	Liversage 1968, 165-168
Dalkey Island, Co. Dublin	Emporium	Multiple sherds of E_2-ware	Liversage 1968, 165-168
Dalkey Island, Co. Dublin	Emporium	Multiple sherds of E_5-ware	Liversage 1968, 165-168
Downpatrick Demesne, Co. Down (Cathedral Hill)	Ecclesiastical Site	?	Campbell 2007, xviii; Comber 2008, 168.
Dunnyneill Islands, Co. Down (Dunnyneill Island)	Emporium	Three sherds of E-ware	McCormick & Macdonald 2004, 8.
Garranes, Co. Cork	Multivallate Rath	Seven sherds of E-ware	Ó Ríordáin 1942
Garryduff, Co. Cork (Garryduff 1)	Rath	Sherds of nine E_1-ware jars.	O'Kelly 1962.
Garryduff, Co. Cork (Garryduff 1)	Rath	Sherds of five E_2-ware jars.	O'Kelly 1962.
Gartree, Co. Antrim (Langford Lodge)	Rath	Sherds of E-ware	Waterman 1963.
Gracedieu, Co. Dublin	Ecclesiastical Site	Sherds of E-ware	Gowen 1988:16
Gransha, Co. Down	Raised Rath	Sherds of E_1-ware	Lynn 1985.
Iniscealtra, Co. Clare	Ecclesiastical Site	Sherds of E_2-ware	Campbell 2007, xviii; Comber 2008, 168.
Kedrah, Co. Tipperary	?	?	Campbell 2007, xviii.
Lackenavorna, Co. Tipperary (Killederdadrum)	Ecclesiastical Site	One sherd of E_2-ware	Manning 1984, 252.
Lagore, Co. Meath	Crannog	Sherds of E_1-ware	Hencken 1950.
Lagore, Co. Meath	Crannog	Sherds of E_2-ware	Hencken 1950.
Lagore, Co. Meath	Crannog	Sherds of E_3-ware	Hencken 1950.
Lisdoo, Co. Fermanagh	Multivallate Rath	Sherds of E_1-ware	Brannon 1981-1982.
Lisduggan North, Co. Cork	Rath	Sherds of E_1-ware	Twohig 1990.
Lisleagh, Co. Cork (Lisleagh I)	Multivallate Rath	One sherd of E-ware	Youngs et al. 1984, 214; Campbell 2007, xix; Comber 2008, 168.
Lough Faughan Crannog, Co. Down	Crannog	Two sherds of E_1-ware	Collins 1955.
Lusk, Co. Dublin	Ecclesiastical site	?	Campbell 2007, xix.
Marshes Upper, Co. Louth	Unenclosed Settlement	Three sherds of E-ware	Gowen 1992, 105
Nendrum, Co. Down	Ecclesiastical site	Sherds of E_1-ware	Lawlor 1925.
Ninch, Co. Meath	Multi-period site	Several sherds of E-ware	Eogan & Reid 2000:0760; McConway 2001:1007
Raheens 2, Co. Cork	Rath	Sherds of E-ware	Lennon 1994, 47-65.
Randalstown, Co. Meath (St. Anne's)	Ecclesiastical Site	Sherds of E-ware	Kelly 1975:32

Townland/Site Name	Site Type	Comments	Reference
Rathgurreen, Co. Galway	Rath	Sherd of E_1-ware	Comber 2002.
Rathmullan, Co. Down	Raised Rath	Two sherds of E-ware	Lynn 1981-1982, 119.
Reask, Co. Kerry	Ecclesiastical Site	Three sherds of E-ware	Fanning 1981, 113
Scrabo, Co. Down	Hillfort	Sherds of E_4-ware	*Archaeological Survey of Co. Down* 1966, 147 & 178.
Slievegrane Lower, Co. Down	Souterrain	?	Campbell 2007, xx.
Spittle Ballee, Co. Down	Rath	One sherd of E_2-ware.	Waterman 1958.
Teeshan, Co. Antrim (Loughmagarry)	Crannog	Sherds of E_1-ware	Campbell 2007, 36.

'E-ware' is thought to have originated in northwest Gaul - although the production sites have yet to be identified - and comprises jars (E_1), beakers (E_2), bowls (E_3), pitchers (E_4) and storage jars (E_5) (Thomas 1959, 96-98). It has been suggested that, unlike 'B-Ware' - which was largely imported as containers for the trade goods - 'E-Ware' was principally traded as a ceramic commodity (Doyle 1998, 93), and it is believed to have been imported around A.D. 525-700.

Sherds of *dérivées sigillées paléochrétiennes* (DSPA/D-ware) (Rigoir 1968) have been recovered from two sites in Ireland – Clogher, Co. Tyrone (Campbell 2007, 31) and Carbinteely (Mount Offaly), Co. Dublin (Conway 1998:124) (Table 8.5). This was a product of the Bordeaux area (Soulas 1996, 252), and is dated to the sixth/seventh century (Campbell 2007, 28).

Sherds of 'F-ware' pottery have been recovered from two sites in Ireland – Corbetstown (Kilpatrick), Co. Meath (Swan 1980-84:0199), and Smithstown, Co. Meath (Gowen 1988:55) (Table 8.5). 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).

Table 8.5: Sherds of DSPA, and F-ware found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Cabinteely, Co. Dublin (Mount Offaly)	Ecclesiastical Site	Sherds of DSPA	Conway 1998:124
Clogher Demesne, Co. Tipperary (Clogher)	Multivallate Rath	Multiple sherds of DSPA	Campbell 2007, 31.
Corbetstown, Co. Westmeath (Kilpatrick/Killucan)	Ecclesiastical Site	Three sherds of F-ware	Swan 1980-4:0199
Smithstown, Co. Meath	Rath	One sherd of F-ware	Gowen 1988:55.

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).

Table 8.6: Imported Glass found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Armagh City, Co. Armagh (Cathedral Hill)	Ecclesiastical Site	Sherd of glass beaker.	Brown & Harper 1984, 135.

Ballycatteen, Co. Cork	Multivallate Rath	Pale blue vessel glass	Ó Ríordáin & Hartnett 1943.
Ballynahinch, Co. Offaly (Ballinderry 2)	Crannog	Sherds from two glass vessels.	Hencken 1942, 58; Bourke 1994, 195.
Brittas, Co. Meath (Moynagh Lough)	Crannog	Two sherds of vessel glass	Bradley 1988:50; Bradley 1997, 60.
Brittas, Co. Meath (Moynagh Lough)	Crannog	Two complete Merovingian glass phials.	Bradley 1995:228; Bourke 1994, 205.
Clogher Demesne, Co. Tyrone (Clogher)	Multivallate Rath	Large quantities of glass sherds – 15 vessels identified.	Warner 1974:0037; Bourke 1994, 196-199.
Corraneary, Co. Cavan (Kilbride)	Ecclesiastical Site	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; Bourke 1994, 201.
Drumcrittan, Co. Fermanagh	Crannog	Fragment of deep blue glass (lost)	Campbell 2007, 61
Dungarvan, Co. Waterford (Dungarvan Castle)	Re-used castle site	?	Campbell 2007, xviii.
Dunnyneill Islands, Co. Down (Dunnyneill Island)	Emporium	Sherds of vessel glass.	McCormick & Macdonald 2004, 8.
Dunnyneill Islands, Co. Down (Dunnyneill Island)	Emporium	Base of claw-beaker	Campbell 2007, 60.
Garranes, Co. Cork	Multivallate Rath	Fragments of five glass vessels.	Ó Ríordáin 1942
Garranes, Co. Cork	Multivallate Rath	Three pieces of millefiori.	Ó Ríordáin 1942
Garryduff, Co. Cork (Garryduff 1)	Rath	Sherds of four glass vessels.	O'Kelly 1962.
Lagore, Co. Meath	Crannog	Sherds from five glass vessels.	Hencken 1950; Bourke 1994, 204.
Lagore, Co. Meath	Crannog	Rods of millefiori	Hencken 1950.
Larrybane, Co. Antrim	Promontory Fort	Imported glass armlet	Childe 1936, 194-5.
Mullaroe, Co. Sligo	Souterrain	Complete glass phial	Harden 1956, 154; Bourke 1994, 205.
Randalstown, Co. Meath (St. Anne's)	Ecclesiastical Site	Sherd of glass cone-beaker	Kelly 1976, 12; Bourke 1994, 206.
Randalstown, Co. Meath (St. Anne's)	Ecclesiastical Site	One Saxon glass bead	Kelly 1976, 12; Bourke 1994, 206.
Rathintaun, Co. Sligo	?	Base-sherd of small glass phial	Bourke 1994, 206.
Reask, Kerry Co. Kerry	Ecclesiastical Site	Rimsherd of glass bowl.	Fanning 1981, 121; Bourke 1994, 206.

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 (Campbell 2007, 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 marvered, opaque white decoration, which often decay in acidic soils. This decoration is caused 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 are dated to the mid-sixth century (Campbell 2007, 68), and 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 & Ivens 1992, 57).

Coins:

Two early-sixth century Frankish coins – one from Maryborough, Co. Laois (Hall 1973-74, 82); and one form Trim, Co. Meath (*ibid*.) – are recorded as having been found in Ireland (Table 8.10). These date from the period of the importation of E-ware from western France, and may have arrived in Ireland during this process.

Table 8.7: Anglo-Saxon Coins Found in Ireland

Townland/Site Name	Site Type	Comments	Reference
26-29 Castle Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	76 Anglo-Saxon coins – 'Ethelred II'	Byrne 1993:057
26-29 Castle Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	237 Anglo-Saxon coins – 'Ethelred II'	Byrne 1993:057
Adare, Co. Limerick	?	About twenty-four coins in total – Anglo-Saxon.	Hall 1973-74, 80.
Armagh City, Co. Armagh (Cathedral Hill)	?	Two Anglo-Saxon coins - 'Æthelstan'; 'Eadgar'	Hall 1973-74, 76.
Armagh City, Co. Armagh	Ecclesiastical Site	One Anglo-Saxon coin – 'Offa'	Hall 1973-74, 82.
Armagh City, 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 coins – '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-Norse Urban site	Anglo-Saxon coin – 'Cnut'	O'Donovan 1999:515
Bullock, Co. Dublin	?	Three Anglo-Saxon coins – 'Eadgar'	Hall 1973-74, 77.
Bullock,	?	65 Anglo-Saxon coins –	Hall 1973-74, 77.

Townland/Site Name	Site Type	Comments	Reference
Co. Dublin		'Eadgar'	
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.
Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Two Anglo-Saxon coins	Ó Ríordáin 1975:15
Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Two Anglo-Saxon coins – 'Æthelred'; 'Cnut'	Ó Ríordáin 1973:0017
Clonmacnoise, Co. Offaly	Ecclesiastical Site	Possible Anglo-Saxon coin.	King 1994:197.
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 Site	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, Co. Dublin	?	One Anglo-Saxon coin – 'Eadgar'	Hall 1973-74, 82.
Dunamase, Co. Laois (Rock of Dunamase)	Cashel? Re-built as castle.	One Anglo-Saxon coin – 9th C.	Hodkinson 1995:176
Dunbrody, Co. Wexford	?	1600 coins in total – Anglo-Saxon – 'Edward the Confessor'; 'Cnut'; 'Harold I'; 'Harthacnut'	Hall 1973-74, 80.
Durrow, Co. Offaly	Ecclesiastical Site	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.
Fishamble Street I, Dublin, Co. Dublin	Hiberno-Norse Urban site	One Anglo-Saxon coin – 10th C.	Ó Ríordáin 1976:19
Fishamble Street II, Dublin, Co. Dublin	Hiberno-Norse Urban site	One Anglo-Saxon coin – 'Eadgar'	Wallace 1977-79: 0037
Fontstown, Co. Offaly	?	One Anglo-Saxon coin – 'Æthelred II'	Hall 1973-74, 82.
Fourknocks, Co. Meath	?	Twenty-nine coins in total – Anglo-Saxon -	Hall 1973-74, 80.

Townland/Site Name	Site Type	Comments	Reference
		'Æthelred II'	
Glasnevin, Co. Dublin	?	Two Anglo-Saxon coins – 'Æthelstan'	Hall 1973-74, 73.
Glendalough, Co. Wicklow	Ecclesiastical Site	Forty-nine Anglo-Saxon coins - 'Edward the Elder'; 'Æthelstan'; 'Eadmund'	Hall 1973-74, 74.
Glendalough, Co. Wicklow	Ecclesiastical Site	Anglo-Saxon coins - 'Eadmund'; 'Eadwig'; 'Eadgar'; 'Eadred'.	Hall 1973-74, 78.
High Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Anglo-Saxon coin – 'Anlaf'	Ó Ríordáin 1972:0014
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 1971:28; Hall 1973-74, 74.
Lagore, Co. Meath	Crannog	One Anglo-Saxon coin – 'Edward the Elder'	Hencken 1951, 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.
Mohil, Co. Kilkenny (Dunmore Cave)	Cave	Fourteen Anglo-Saxon silver pennies – 'Æthelstan'; 'Edward the Elder'	Wallace & Ó Floinn 2002, 223.
Mohil, Co. Kilkenny (Dunmore Cave)	Cave	Ten coins in total - Anglo-Saxon coins – 'Æthelstan'; 'Edward the Elder'	Hall 1973-74, 73

Townland/Site Name	Site Type	Comments	Reference
Monasterboice, Co. Louth	Ecclesiastical site	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 Site	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 1985:58; Kenny 1984, 521.
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.
Werburgh Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	125 Anglo-Saxon coins – late-10th C.	Hayden 1994:087
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	Hall 1973-74, 78.

Townland/Site Name	Site Type	Comments	Reference
		coins – 'Eadgar'; 'Æthelstan II'	
Unlocated	?	One Anglo-Saxon coin – 'Ceolwulf II'	Hall 1973-74, 82.
Unlocated	?	One Anglo-Saxon coin – 'Harthacnut'	Hall 1973-74, 82.

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 have since been refuted (James 1982; Wooding 1996), it is nevertheless clear that some of the archaeological remains may be a result of this trade. Thomas argued that LR2 amphorae (Bi) were used for transporting wine (1959, 92); and it has been suggested that 'E-ware' jugs and bowls (E_1-E_4) may have been imported as part of the wine trade (James 1982, 383; Wooding 1996, 69).

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 the associated pottery is predominantly found on ecclesiastical sites, and the change in the pottery-types may therefore 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 & Ritchie 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 & Ritchie 1873, 427), suggesting that it too was traded to Ireland.

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.

The emporium, or trading post, at the mouth of the Loire River, Noirmoutier was known for its salt pans, and 'Baiesalt' was well distributed along the Loire valley and the interior of the Frankish empire (Hodges 1989, 128). Noirmoutier appears to have been the centre for the Irish trade to continental Europe (see exported goods below), and as such it would be highly improbable that trading ships would not return to Ireland with a cargo of salt, especially when salt was not mined in Ireland until the later medieval period (Scott 1981, 115-6)

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' ('*clúman*') to the list of flotsam (Binchey 1978; Wooding 1996, 69); and O'Davoren's '*Glossary*' includes '*laire breathnacha*' ('British horses') (Stokes 1862, 95).

Slaves
There is evidence for slave raiding on Britain during this period, for example the story of St. Patrick. In his, '*Letter to the Soldiers of Coroticus*', St. Patrick's also suggests an element of slave trading between Britain and Ireland: '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, and shackles from Knowth, Co. Meath; Oldgrange, Co. Kildare; Corcreevy, Co. Tyrone; Lough Sheelin, Co. Cavan; and Coagh, Co. Sligo (Barton 2000, 22) have been interpreted as slave chains. 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, 742-3). There is no indication, however, whether the slaves were imported from outside Ireland, or were captured 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, if any material was being exported outwards from Ireland to Britain and the nearby Continent. The classical authors, such as Strabo, wrote of 'hides, slaves and hunting dogs' (Jones 1969, 255) being the prime exports of the British Isles, and 'over the centuries it was undoubtedly slaves which were the most important merchandise in this trade' (Doenhaerd 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 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 the 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; there were a number of Greeks and Syrians, but Jews predominated, a number of whom appear to have made a living from the slave-trade serving Muslim North Africa (Doenhaerd 1978, 172).

The only other good reference to specific Irish exports at this time comes from the seventh-century '*Life of Philabert*' of Noirmoutier in southern Brittany which mentions:

> '*Scottorum navis diversis mercimoniis plenus ad litus affuit, quae calciamenta ac vestimenta fratribus larga copia ministravit*' §42. (Krusch & 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 around the *floruit* of 'E-ware', suggesting that there may have been a two-way trade between parts of Ireland and western and northwest Gaul 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 and exchange locations on the Irish coast, AD 400-800

In the early medieval period around the North Sea and the Atlantic, particular islands or sheltered locations along the coast seem to have been used as places where pottery and glass was brought ashore by coastal traders. On the other hand, it may well be that such beach markets were established by maritime traders along the east coast themselves – in co-operation with local elites or with the church.

The early medieval coastal settlement at Dalkey Island, Co. Dublin seems to have been one of these places. Dalkey Island is a promontory fort on this small island on the south side of Dublin bay. It was excavated by David Liversage in the 1950s and produced evidence for Mesolithic, Bronze Age and early medieval occupation. The early medieval settlement on the island was concentrated on a narrow promontory at the north-west end of the island, adjacent to a natural landing place. The promontory fort was probably built in the sixth or seventh century, and probably succeeded a previous unenclosed settlement. The promontory fort has produced the largest amount of imported pottery and glass known from any site in Ireland. It includes fifth and sixth century Bi, Bii, B misc. pot shards and sixth to seventh century E-ware pottery, glass bowls and glass beakers. It is unlikely that Dalkey Island was a high status settlement site; neither the enclosure or finds evidence would indicate this. However, Dalkey Island would have been ideal for a trading place. It was strategically situated on the Irish Sea maritime routeways and was also located on an offshore island on the south side of Dublin Bay, where it could have served as a safe and secure landing place for merchants working under the protection of a local king.

E-ware pottery is also found elsewhere up along the Irish Sea coast. Recent archaeological excavations at Ninch, Co, Meath – to the south of the Boyne estuary - have produced some E-ware associated with a multi-period, enclosed settlement on this coastal site, implying the use of natural landing places along the Irish Sea coastline.

The largest concentration of E-ware on the Irish Sea coast is found around Strangford Lough, Co. Down. 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. Finbar McCormick and Phillip McDonald's recent archaeological excavations on Dunnyneill Island 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. It is likely then that Dunnyneill Island was both a high-status seasonally occupied island, as well as a beach trading station, and was probably also a location for feasting and entertainment.

Both Dalkey Island and Dunnyneill Island as offshore, marine islands could also be seen as usefully neutral places (indeed, this is implied in an early medieval annalistic reference to a royal political encounter on *Inis na Righ*, another Irish Sea island on the north Dublin coast, which is described as being usefully 'neither sea nor land' and thence capable of being used for negotiating a political agreement). Early medieval trade and exchange was structured around gift giving and reciprocity, so it is likely that local kings or other secular elites sent emissaries out to the these islands (or went out themselves) to meet Gaulish 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 local political territories.

Early medieval Ireland and Hiberno-Norse Trade (c. A.D. 800 - 1150)

Background

In the Viking Age, Ireland was drawn again into another maritime trading network, but now with a focus on the north Atlantic. In particular, the Irish Sea had become a major Atlantic seaway, serving as the axis for sea-going trade and exchange between the Mediterranean and northern Europe. Dublin was a particularly significant stopping point or port on the east-west routeways between early medieval Europe and the Scandinavian colonies of the Faroes, Iceland and Greenland. We can see the role of both the native Irish and Dublin Vikings in the North Atlantic by the frequent reference in the Icelandic sagas to Irish slaves and women, while the discovery of Irish type ringed pins at the tenth-century Norse settlement at L'Anse Aux Meadows also indicates the far flung maritime connections between Ireland and elsewhere.

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 AD. However, it is likely that other, perhaps even peaceable, types of activities that went under the radar of monastic scribes were also going on. It is possible that Scandinavian rural settlements such as the Cherrywood, Co. Dublin site or even the Dublin longphort of AD 841, were the residences of Scandinavian men and women engaged in trade, manufacturing and rural agricultural labour.

However, particularly striking is the development of Hiberno-Norse ports and harbours from the tenth centuries onwards in Dublin, Wexford, Waterford, Cork and Limerick. All these ports appear to have located at places that had a number of suitable topographic features and landscape characteristics; proximity to the coast, situation on large natural havens at the confluence of rivers. These locations would also have provided natural defence, sheltered by the surrounding topography and the river barriers and with a ready escape route to the sea. These ports were often at the boundaries of existing expansive socio-economic and political hinterlands and also provided ready access to a wide and varied hinterland. This is especially true when one considers the mobility that the surrounding seascapes gave these Scandinavian peoples.

In any case, by the tenth and eleventh century AD, 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 AD 920-1170, Dublin had trading links with York, Scandinavia, Anglo-Saxon England and other parts of Ireland. Gold and silver ingots and a large number of imported coins indicate the importance of trade with England, particularly the Chester area, and with the north west of France. The presence of walrus ivory (available only in the Arctic circle), soapstone vessels and amber indicates that trade was maintained with Scandinavia while the discovery of silks show that Dublin was part of a trading network which stretched as far as the Silk Road to China. Silver coins from Samarkand, Taskent and Baghdad, Iraq have all been found in Dublin.

What was Dublin exporting? Almost certainly, the town's major exports were wool, hides and slaves (as slavery was to be the source of Bristol's and Liverpool's wealth in the post-medieval period). Some slaves were probably obtained in raids, but the most common way of obtaining slaves was by trade. In early medieval Ireland, the lives of captives taken in battle were forfeit to the victors. If the captives were not aristocratic and capable of paying a ransom, it was more profitable to sell the captives as slaves, than it was to kill them. The majority of individuals in the Dublin slave markets then were probably purchased from one victorious Irish king or another. Ireland was not the only source of slaves. England, Scotland and Wales supplied their share. Indeed even in the 1100s the merchants of Dublin were condemned for selling English Christians into slavery in Ireland.

Archaeological evidence for trade, AD 800-1150

Our knowledge of early medieval trade between Ireland and the rest of Europe in the Viking Age (AD 800-1150) is of course dominated by the discoveries from our Hiberno-Norse Dublin, and particularly from Dublin. This period - *c.* 800 to the *c.*1100 - coincides with the arrival of the Vikings, and through them, the development of the Hiberno-Norse towns and marketplaces. Although exotic materials have been found in the Hiberno-Norse towns (such as Dublin or Cork), or Norse *longphorts* (such as Woodstown, Co. Waterford), they 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-Norse population, becomes increasingly difficult. By contrast contemporary rural 'native' sites, such as Balriggan, Co. Louth (Delaney & Roycroft 2003, 16-19), or Killickaweeny, Co. Kildare (Walsh & Harrison 2003, 33-36) do not show evidence of 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 in some cases before this date.

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 would also have had a major impact on the spread of exotic pottery in Ireland.

Specialist reports from excavations at the Hiberno-Norse/Medieval towns of Dublin (McCutcheon 1994; McCutcheon 1995b; Gahan & McCutcheon 1997b; McCutcheon 2006); Cork (McCutcheon 1995a; McCutcheon 1996a; McCutcheon 1997; Gahan, McCutcheon & Twohig 1997) and Waterford (Gahan & McCutcheon 1997a) have indicated a large import trade, predominantly from the southwest of England (Table 8:8), from the late-eleventh century onwards. Excavations in Hiberno-Norse 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 there are therefore a limited number of identified pottery types (Tables 8:9 & 8:13) from this phase.

Table 8.8: Imported English Pottery – 11th/12th C.

Townland/Site Name	Site Type	Comments	Reference
CORK: 5 Barrack Street, Cork, Co. Cork	Hiberno-Norse Urban site	Sherds of medieval pottery – late-11th/early-12th C.	Lane 2000:0122
Kyrl's Quay, Cork, Co. Cork	Hiberno-Norse Urban site	41 sherds of South-East Wiltshire-Ware	McCutcheon 1996c, 44
Kyrl's Quay, Cork, Co. Cork	Hiberno-Norse Urban site	Two sherds of Ham Green Cooking-Ware	McCutcheon 1996c, 44
Lady Lane, Waterford, Co. Waterford	Hiberno-Norse Urban site	Sherds of South-East Wiltshire-ware	Moore 1983; Hurst 1988, 242.
Main Street South, Cork, Co. Cork	Hiberno-Norse Urban site	Sherds of Ham Green Cooking Ware	Ni Loingsigh 2003:0225

Townland/Site Name	Site Type	Comments	Reference
North Gate, Cork, Co. Cork	Hiberno-Norse Urban site	One sherd Ham Green Cooking-Ware	McCutcheon 1997, 77.
North Gate, Cork, Co. Cork	Hiberno-Norse Urban site	Two sherds Ham Green Glazed Ware	McCutcheon 1997, 77.
Skiddy's Castle, Cork, Co. Cork	Hiberno-Norse Urban site	34 sherds Bath Fabric 'A'-ware	Gahan, McCutcheon & Twohig 1997, 110.
Skiddy's Castle, Cork, Co. Cork	Hiberno-Norse Urban site	99 sherds South-East Wiltshire Ware	Gahan, McCutcheon & Twohig 1997, 110.
Skiddy's Castle, Cork, Co. Cork	Hiberno-Norse Urban site	Eleven sherds Coarse London Ware	Gahan, McCutcheon & Twohig 1997, 110.
Skiddy's Castle, Cork, Co. Cork	Hiberno-Norse Urban site	27 sherds Dyfed gravel-tempered ware	Gahan, McCutcheon & Twohig 1997, 110.
Skiddy's Castle, Cork, Co. Cork	Hiberno-Norse Urban site	299 sherds Ham Green 'A'-Ware	Gahan, McCutcheon & Twohig 1997, 110.
Skiddy's Castle, Cork, Co. Cork	Hiberno-Norse Urban site	919 sherds Ham Green Cooking Ware	Gahan, McCutcheon & Twohig 1997, 110.
South Main Street, Cork, Co. Cork	Hiberno-Norse Urban site	Ham Green Ware	Twohig 1975:10
Tobin Street, Cork, Co. Cork	Hiberno-Norse Urban site	Ham Green Ware	Papazian 1985, 213
Tuckey Street, Cork, Co. Cork	Hiberno-Norse Urban site	Ham Green Ware	Cleary 1981, 1-20.
Washington Street, Cork, Co. Cork	Hiberno-Norse Urban site	Ham Green Ware	Cleary 1996.
DUBLIN: Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Chester-ware	Ó Ríordáin 1972-5; Hurst 1988, 242.
Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Saxo-Norman Glazed-ware (other)	Ó Ríordáin 1972-5; Hurst 1988, 242.
Dublin Castle, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Barlip-Ware	O hEochaidhe 1961-62; Hurst 1988, 242.
Dublin Castle, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Chester-Ware	O hEochaidhe 1961-62; Hurst 1988, 242.
Essex Street West, Dublin, Co. Dublin	Hiberno-Norse Urban site	Five sherds of South-East Wiltshire-Ware	McCutcheon 1995b, 42
Essex Street West, Dublin, Co. Dublin	Hiberno-Norse Urban site	Nine sherds of Ham Green 'A' -Ware	McCutcheon 1995b, 42
Essex Street West, Dublin, Co. Dublin	Hiberno-Norse Urban site	Eleven sherds of Ham Green Cooking-Ware	McCutcheon 1995b, 42
High Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Ham Green Ware jug	Ó Ríordáin 1972:0014
Isolde's Tower, Dublin, Co. Dublin	Hiberno-Norse Urban site	Thirteen sherds of Ham Green Ware	McCutcheon 1994, 53
Isolde's Tower, Dublin, Co. Dublin	Hiberno-Norse Urban site	One sherd of Ham Green Cooking-Ware	McCutcheon 1994, 53
Patrick Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Thirteen vessels (minimum number)- Ham Green Glazed	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Three vessels (minimum number)- Ham Green Cooking-Ware	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Two vessels (minimum number)- Wiltshire-Ware	Gahan & McCutcheon 1997b, 112

Townland/Site Name	Site Type	Comments	Reference
Patrick Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Redcliffe-Ware	Gahan & McCutcheon 1997b, 112
Patrick Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Chester-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Three vessels (minimum number)- Ham Green Glazed	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Ham Green Cooking-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Wiltshire-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Redcliffe-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Chester-Ware	Gahan & McCutcheon 1997b, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of South-East Wiltshire-ware	Ó Ríordáin 1969-73; Hurst 1988, 242.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Chester-ware	Ó Ríordáin 1969-73; Hurst 1988, 242.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Saxo-Norman Glazed-ware (other)	Ó Ríordáin 1969-73; Hurst 1988, 242.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Stamford-ware	Ó Ríordáin 1969-73; Hurst 1988, 242.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	228 sherds South-East Wiltshire Ware	McCutcheon 2006, 40.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	307 sherds Ham Green A Ware	McCutcheon 2006, 40.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	437 sherds Ham Green Cooking Ware	McCutcheon 2006, 40.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	Ten sherds Coarse London Ware	McCutcheon 2006, 40.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	One sherd Malvern Chase Ware	McCutcheon 2006, 40.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	One sherd Stamford Ware	McCutcheon 2006, 40.
LIMERICK: St. Saviour's, Limerick, Co. Limerick	Hiberno-Norse Urban site	Four sherds of Ham Green Glazed Ware	McCutcheon 1996b, 66
WATERFORD: Waterford, Co. Waterford	Hiberno-Norse Urban site	898 sherds Cornish Ware	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	64 sherds Dyfed gravel-tempered Ware	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	48 sherds of Stamford-ware	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	165 sherds Bath Fabric 'A'- ware	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	863 sherds Proto-Ham Green Ware	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	1003 sherds South-East Wiltshire Ware	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	19119 sherds Ham Green Ware (A & B)	Gahan & McCutcheon 1997, 288.
Waterford, Co. Waterford	Hiberno-Norse Urban site	16 sherds Coarse London Ware	Gahan & McCutcheon 1997, 288.

The predominant imported pottery came from kilns near Bath - Ham Green A is dated from the early-twelfth century to the late-twelfth century. South East Wiltshire ware, which was not widely traded until the mid- to late-twelfth century, is also found in large numbers on these sites. Other West Country pottery found in Ireland from this period include West Wiltshire ware (early twelfth century), and Cornish ware (late-eleventh to mid-twelfth century). Some sherds of Stamford ware (pre-1150) were found at Waterford, and a number of sherds of Course London-type (twelfth century), which is more usually associated with the Scottish market, were also found at Cork, Waterford and Dublin. Sherds of Dyfed gravel-tempered ware (mid- to late-twelfth century), suggest trading links with south-west 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 are often more vague, and the two sherds of 'French cooking vessel' identified by the excavator at Harristown, Co. Louth (Murphy 1994:181), were dated to the 9th - 12th century. This remains, to date, the only Early Medieval French pottery to be found in a non-urban site. Imported English wares and also Rhenish Paffrath-ware were recorded from the rath at Ballyfounder, Co. Down (Waterman 1958, 48; Hurst 1988, 243), but this comes from the later re-occupation of the site as an Anglo-Norman motte.

Table 8.9: Imported French Pottery – 11th/12th C.

Townland/Site Name	Site Type	Comments	Reference
CORK: Kyrl's Quay, Cork, Co. Cork	Hiberno-Norse Urban site	Thirteen sherds of Normandy Gritty-Ware	McCutcheon 1996c, 44
Kyrl's Quay, Cork, Co. Cork	Hiberno-Norse Urban site	Nine sherds of Normandy Smooth-Ware	McCutcheon 1996c, 44
DUBLIN: Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Andenne-ware	Ó Ríordáin 1974:0014
Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of northern French-ware	Ó Ríordáin 1974:0014
Dublin Castle, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Normandy Gritty-Ware	O hEochaidhe 1961-62; Hurst 1988, 242.
Fishamble Street II, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Red Painted-ware	Ó Ríordáin 1969-73; Hurst 1988, 243.
Fishamble Street II, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Andenne-ware	Wallace 1975-6; Hurst 1988, 243.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	One vessel (minimum number)- Normandy-Ware	Gahan & McCutcheon 1997, 112
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of North France – Fine Grey-ware	Ó Ríordáin 1969-73; Hurst 1988, 242.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of North France-Fine White-ware	Ó Ríordáin 1969-73; Hurst 1988, 242.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Normandy Gritty -ware	Ó Ríordáin 1969-73; Hurst 1988, 242.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Red Painted -ware	Wallace 1975-6; Hurst 1988, 243.
Winetavern Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Andenne -ware	Ó Ríordáin 1969-73; Hurst 1988, 243.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	Nine sherds Paris-type Ware	McCuthcheon 2006, 88.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	127 sherds Rouen-type Ware	McCuthcheon 2006, 88.
Wood Quay, Dublin, Co. Dublin	Hiberno-Norse Urban site	Sherds of Andenne-ware	Wallace 1974-6; Hurst 1988, 243.

Townland/Site Name	Site Type	Comments	Reference
HARRISTOWN: Harristown, Co. Louth	Rath	Two sherds of 'French cooking vessel'	Murphy 1994:181
WATERFORD: Lady Lane, Waterford, Co. Waterford	Hiberno-Norse Urban site	Sherds of North France – Fine Grey-ware	Moore 1983; Hurst 1988, 242.
WEXFORD: Water Lane, Wexford, Co. Wexford	Hiberno-Norse Urban site	Sherds of Red Painted-ware	Wallace 1974; Hurst 1988, 243.

Imported Glass:

There is, as yet, no complete study of glass imports into Ireland during the Hiberno-Norse 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 & 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-Norse period have poor provenance (Tables 8:10-8:11). The assumption must be made that these predominantly 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, Co. Armagh (Hall 1973-74, 76), or 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 trade. Similarly the eleventh century Norman coin (Table 8.11) found at Dalkey Island, Co. Dublin (Liversage 1968, 179-181) may also be the result of some unknown trading enterprise, rather than Viking raiding. Although the nine hoards that included Kufic coins (Table 8.12), almost certainly have no connection with an Irish-Arabic trade, they are indicators of the extent of the wider Viking trade networks.

Table 8.10: 'Viking'/Norse Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Armagh City, 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 Site	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.
Durrow, Co. Offaly	Ecclesiastical Site	One Norse coin (Jorvik) – 'Anlaf Guthfrithsson'	Hall 1973-74, 74.
Dysert, Lough Ennell, Co. Westmeath	?	Sixteen Norse coins (Jorvik)	Kenny 1987, 521
Townland/Site Name	Site Type	Comments	Reference

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.
High Island, Co. Galway (St. Fechin's)	Ecclesiastical Site	Norse coin – 'Harald Hardrada'	Scally 1999:305
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.
Mohil, Co. Kilkenny (Dunmore Cave)	Cave	Ten coins in total – Norse coins - Jorvik	Hall 1973-74, 73
Mohil, Co. Kilkenny (Dunmore Cave)	Cave	Ten coins in total – Norse coins (Lincoln)	Hall 1973-74, 73
Mungret, Co. Limerick	Ecclesiastical Site	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.
Unlocated, Co. Dublin	?	One Norse (Jorvik)	Hall 1973-74, 73.
Unlocated	?	Forty-eight coins in total – Norse (Jorvik) - 'Anlaf Guthfrithsson'.	Hall 1973-74, 76.

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

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Table 8.11: Hiberno-Norse Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Adare, Co. Limerick	?	About twenty-four coins in total – Hiberno-Norse.	Hall 1973-74, 80.
Ardagh, Co. Longford	?	One Hiberno-Norse coin	Hall 1973-74, 82.
Ardfert, Co. Kerry (St. Brendan's)	Ecclesiastical Site	Hiberno-Norse coin – 'Sitric III'	Moore 1990:066
Armagh City, Co. Armagh (Cathedral Hill)	Ecclesiastical Site	Hiberno-Norse coin – 'Sitric III'	Heslip 1984, 134.
Armagh City, Co. Armagh	Ecclesiastical Site	Three Hiberno-Norse coins	Hall 1973-74, 81.
Ballycastle, Co. Antrim	Megalith	70 coins in total – Hiberno-Norse	Hall 1973-74, 80.
Ballylynan, Co. Laois	?	Hoard of Hiberno-Norse coins.	Hall 1973-74, 80.
Ballyvally, Co. Cork (Beal Boru)	Rath	Two Hiberno-Norse coins	O'Kelly 1962; Hall 1973-74, 82.
Baltinglass, Co. Wicklow	?	84 Hiberno-Norse coins	Hall 1973-74, 80-81.
Castlelyons, Co. Cork	?	Several hundred Hiberno-Norse coins	Hall 1973-74, 82.
Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	Fourteen Hiberno-Norse coins	Ó Ríordáin 1973:0017
Christchurch Place, Dublin, Co. Dublin	Hiberno-Norse Urban site	One Hiberno-Norse coin – 'Sihtric III'	Ó Ríordáin 1974:0014
Christchurch, Dublin, Co. Dublin	Ecclesiastical Site	Seven Hiberno-Norse coins	Hall 1973-74, 81.
Clondalkin, Co. Dublin	?	Hiberno-Norse – 'Sihtric III'	Hall 1973-74, 79.
Clondalkin, Co. Dublin	?	Hoard of Hiberno-Norse coins	Hall 1973-74, 81.
Clonmacnoise, Co. Offaly	Ecclesiastical Site	Hiberno-Norse coin hoard	O Floinn 1977-79: 0063
Clonmacnoise, Co. Offaly	Ecclesiastical Site	Hiberno-Norse coins.	King 1997:448; King 1998:548.
Collinstown, Co. Westmeath	?	Five Hiberno-Norse coins – 'Sihtric III'	Kenny 1987, 521.
Derrymore, Co. Westmeath	?	Eleven coins in total – Hiberno-Norse – 'Sihtric III'	Hall 1973-74, 79.
Donaghenry, Co. Tyrone	?	Hoard of Hiberno-Norse coins	Hall 1973-74, 81.
Downpatrick Demesne, Co. Down (Cathedral Hill)	Ecclesiastical Site	Two Hiberno-Norse coins	Brannon 1988.
Dunamase, Co. Laois	?	Several hundred Hiberno-Norse coins	Hall 1973-74, 81.
Dunbrody, Co. Wexford	?	1600 coins in total – Hiberno-Norse	Hall 1973-74, 80.
Fermoy, Co. Cork	?	One Hiberno-Norse coin	Hall 1973-74, 82.
Fishamble Street II, Dublin, Co. Dublin	Hiberno-Norse Urban site	Two Hiberno-Norse coins	Wallace 1977-79: 0037
Fourknocks, Co. Meath	Megalith	Twenty-nine coins in total – Hiberno-Norse – 'Sihtric III'	Hall 1973-74, 80.
Glendalough, Co. Wicklow	Ecclesiastical Site	Hoard of Hiberno-Norse coins	Hall 1973-74, 81.

Townland/Site Name	Site Type	Comments	Reference
Gortgole, Co. Antrim (Ferrystown)	River dredging	Fragment of Hiberno-Norse ring money	Bourke 1995:005
High Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Hiberno-Norse coins	Ó Ríordáin 1972:0014
Kilcullen, Co. Kildare	?	Hoard of Hiberno-Norse coins	Hall 1973-74, 81.
Kildare, Co. Kildare	?	Six Hiberno-Norse coins	Hall 1973-74, 81.
Kilkenny, Co. Kilkenny	?	Large quantities of coins – Hiberno-Norse	Hall 1973-74, 80.
Kilmainham, Co. Dublin	?	Hoard of Hiberno-Norse coins	Hall 1973-74, 82.

Townland/Site Name	Site Type	Comments	Reference
Knockmaon, Co. Waterford	?	Fourteen coins in total – Hiberno-Norse – 'Sihtric III'	Hall 1973-74, 79.
Limerick, Co. Limerick	?	108 Hiberno-Norse coins	Hall 1973-74, 81.
Loughgur, Co. Limerick (Carraig Aille II)	Cashel	Hiberno-Norse coins	Ó Ríordáin 1949,
Marshes Upper, Co. Louth	Unenclosed Habitation Site	One Hiberno-Norse coin – 'Sihtric III'	Gosling 1980-84: 0137; Kenny 1987, 521.
Mohil, Co. Kilkenny (Dunmore Cave)	Cave	Nine Hiberno-Norse coins – c. A.D. 928	Drew & Huddart 1980, 17.
Mullingar, Co. Westmeath	?	Fourteen Hiberno-Norse coins	Hall 1973-74, 79.
Outlack, Co. Armagh	?	Twelve Hiberno-Norse coins	Hall 1973-74, 81.
Rathlin Island, Co. Antrim	?	Seven/eight Hiberno-Norse coins	Hall 1973-74, 80.
Scrabo Hill, Co. Down	Hill Fort	100+ Hiberno-Norse coins	Hall 1973-74, 81.
Shandon, Co. Waterford	Enclosure	Fragment of Hiberno-Norse coin – 11th C.	Elder 2002:1790
Tonyowen, Co. Westmeath	?	Three Hiberno-Norse coins – c. A.D. 1040	Kenny 1987, 521.
Unlocated, Co. Londonderry	?	One Hiberno-Norse coin – 'Sihtric III'	Hall 1973-74, 82.
Unlocated, Co. Wexford	?	Three Hiberno-Norse coins	Hall 1973-74, 82.
Unlocated	?	One Hiberno-Norse coin	Hall 1973-74, 82.

Imported coins are also known from elsewhere in continental Europe, including Frankish coins from Maryborough, Co. Laois and Trim, Co. Meath and (Hall 1973-4, 82) and Carolingian coins from Coghlanstown West, Co. Kildare, Derrykeighan, Co. Antrim, Knockmaon, Co. Waterford (Table 8.12). A 'Norman' coin found at Dalkey Island, Co. Dublin (Liversage 1968, 179-181) may also be the result of some unknown trading enterprise, rather than Viking raiding.

Table 8.12: Continental European Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Coghlanstown West, Co. Kildare (Mullaghboden)	?	Eleven Carolingian coins – 'Louis the Pious'; 'Pippin I/II'; 'Charles the Bald'	Hall 1973-74, 71; Dolley & Morrison 1963, 78.
Dalkey Island, Co. Dublin (St. Begnet's)	Ecclesiastical Site	Norman coin – 11th C.	Liversage 1968, 179-181.
Delgany, Co. Wicklow	?	Papal coin – 'Leo III'	Hall 1973-74, 71; Dolley & Morrison 1963, 77.
Derrykeighan, Co. Antrim	Ecclesiastical Site	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.
Trim, Co. Meath	?	One Frankish coin – early 7th C.	Hall 1973-74, 82.

Amongst the most remarkable coins hoards are those that included Kufic coins (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 across western Europe and particularly with the eastern Mediterranean and the way the such coins could find their way out from the Norse towns into the rural hinterland.

Table 8.13: Arabic/Kufic Coins found in Ireland

Townland/Site Name	Site Type	Comments	Reference
Drogheda, Co. Louth	?	Hoard of Kufic coins (lost)	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.

Townland/Site Name	Site Type	Comments	Reference
Mohil, Co. Kilkenny (Dunmore Cave)	Cave	Ten coins in total – Kufic (Armenia) – 'Caliph Al-Mu'tamid'	Hall 1973-74, 73
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.

Other Material:

The period A.D. 800 – A.D. 1000 has very little documentary information on external trade – the Irish Law tracts are 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 more 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 – '*fincharb*' – is derived from the Irish for wine – '*fin*' – and the Old Norse word for ship – '*karf*'.

The French wine trade was flourishing in the late-twelfth century. Giraldus 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* (Ritchie 1879, 325), there is no evidence for native salt production prior to the late-twelfth century – for example all Irish

place-names associated with salt production during the later medieval period are ultimately English in derivation (Scott 1981, 115-6).

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

Silk:
Approximately sixty pieces of silk have been recovered from Hiberno-Norse Dublin. These have been interpreted as probably coming from Byzantium (Wallace 1987, 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 arriving 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. '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 (*Annals of Ulster* 871)'. The Dublin-based slave trade seems to have extended as far south as northern Africa:

> 'Then they [i.e. Hiberno-Norse] brought a great host of them [i.e. Mauritanians] 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 Danish (or Ostmen) settlement at Limerick, established in 922, for a time rivaled 'Dublin as the key market for slaves' (Forte *et al*. 2005, 105), but in later documents Dublin appears to have 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 that was 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 record 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 & 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.* 1125, for example, mentions ships from Germany and Ireland trading at York - '*naves a Germania et Hibernia venientes...*' (Preest 2002, 139) - but 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 – specifically marten, deer, otter, squirrel, hare, sheep, lamb, fox, kid and rabbit (Warner 1926). It is possible, with the exception of the introduced rabbit, that the fur trade 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 chronicled farther back than this. A charter of Rouen dated to 1150 or 1151, and 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 Ballynahinch (Ballinderry II), Co. Offaly (Hencken 1942), and Tullycommon (Cahercommaun), Co. Clare (Hencken 1938). These presumably represent fur-hunting, although possibly for domestic manufacture, rather than trade.

Ireland was not only an importer of slaves, but also an exporter. Most of the slaves brought into Dublin appear to have been processed there and then sent off to their final destinations. There is evidence of slaves being sent from Ireland to Rouen *c.* A.D. 1000 (Doehard 1978, 206), and the assumption is that the Moorish slaves captured in 867 were also sent on to other destinations. The slave trade in Dublin was not, however, 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).

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-Norse 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 1987, 215) – and this may represent the source of much of the rest of the amber found in Ireland.

Table 8.14: Amber material from Ireland

Townland/Site Name	Site Type	Comments	Reference
Ballycatteen, Co. Cork	Multivallate Rath	One amber bead.	Ó Ríordáin & Hartnett 1943.
Ballynahinch, Co. Offaly (Ballinderry 2)	Crannog	Fourteen amber beads.	Hencken 1942.
Brittas, Co. Meath (Moynagh Lough)	Crannog	Amber beads	Bradley 1997, 60.
Cherrywood, Co. Dublin	Hiberno-Norse occupation site	One amber bead	O Neill 1999:169
Clonmacnoise, Co. Offaly	Ecclesiastical Site	?	Comber 2008, 168.
Dooey, Co. Donegal	Sand hills Enclosure	Amber settings in locally made bronze	Ó Ríordáin & Rynne 1961
Dunbell, Co. Kilkenny	Rath	Two amber beads.	Foley 1972:0020.
Dunmisk, Co. Tyrone	Rath/Monastic Site	One amber bead	Ivens 1989, 53.
Fishamble Street, Dublin, Co. Dublin	Hiberno-Norse Urban site	Four thousand + pieces	Wallace 1987, 215.
Garranes, Co. Cork	Multivallate Rath	Two fragments of amber	Ó Ríordáin 1942, 121.
Garranes, Co. Cork	Multivallate Rath	One amber bead	Ó Ríordáin 1942, 121.
Garryduff, Co. Cork (Garryduff 1)	Rath	One piece of amber.	O'Kelly 1962.
Glencull, Co. Tyrone	Rath	Amber hemisphere in decorated bronze disc	Collins 1960, 78-79.
Lagore, Co. Meath	Crannog	One amber bead	Hencken 1950.
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.
Lough-a-Trim, Co. Westmeath	Crannog	Part of amber ring	Falkiner 1899, 216.
Loughgur, Co. Limerick (Carraig Aille I)	Cashel	Two fragments of amber.	Ó Ríordáin 1949.
Poulacapple, Co. Tipperary	Rath	Amber button	Reynolds 1972:0030

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), or Garranes, Co. Cork (Ó Ríordáin 1942, 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.

Jet:

Jet has been found on twenty-six Early Medieval sites in Ireland prior to 2004 (Table 8.15). Fragments of jet bracelet predominate among finds of jet, although some un-worked jet lumps have been found at Fishamble Street in Dublin (Wallace 1987, 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. In certain cases 'jet' is included as a possible stone-type, along with 'shale' or 'lignite' - e.g. Drumaroad, Co. Down (Waterman 1956); Ballyaghagan, Co. Antrim (Proudfoot 1958) - and it is clear that further petrological research is required before a definitive list of jet finds in Ireland may be produced.

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.
Armagh City, Co. Armagh (Cathedral Hill)	Ecclesiastical Site	Fragments of three jet bracelets.	Brown & Harper 1984, 136.
Ballyaghagan, Co. Antrim	Rath	Fragment of jet/lignite bracelet.	Proudfoot 1958.
Ballycatteen, Co. Cork	Rath	Fragment of jet bracelet.	Ó Ríordáin & Hartnett 1943.
Ballyvourney, Co. Cork	Ecclesiastical Site	Three fragments of jet.	O'Kelly 1952.
Brittas, Co. Meath (Moynagh Lough)	Crannog	Fragments of jet bracelets.	Bradley 1989:072; Bradley 1995:228
Clonmacnoise, Co. Offaly	Ecclesiastical Site	Fragments of jet bracelets	O Floinn 1977-79:0063; King 1992:157; King 1993:187; King 1995:240; King 1996:324
Dressogagh, Co. Armagh	Rath	Fragment of jet bracelet	Collins 1966.
Drumaroad, Co. Down (White Fort)	Cashel	Fragment of jet/shale/lignite bracelet	Waterman 1956.
Duneight, Co. Down	Raise Rath	Fragment of jet bracelet	Waterman 1963
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, Co. Dublin	Hiberno-Norse Urban site	Unworked jet nodules	Wallace 1987, 216.
Kilbride Parish, Co. Antrim	Isolated Souterrain	Fragment of jet bracelet	Lawlor 1917, 88.
Killarn, Co. Down	Raised Rath	Fragment of jet bracelet	Boal & Moffit 1959
Knockea, Co. Limerick	Rath	Fragment of jet bracelet.	O'Kelly 1967, 96.
Knowth, Co. Meath	Raised Rath	Fragments of jet armlets	Eogan 1975:30; Comber 2008, 168
Lackan, Co. Wicklow (Quinn's Rath)	Rath	Piece of jet.	O'Connor 1944.
Lagore, Co. Meath	Crannog	Fragments of four jet bracelets	Eogan 1991, 165.
Letterkeen, Co. Mayo	Rath	Eight fragments of jet bracelets	Ó Ríordáin 1951.
Loughgur, Co. Limerick (The Spectacles)	Unenclosed Hut Site	Four fragments of jet bracelet.	Ó Ríordáin 1949.
Mullaghbane, Co. Tyrone	Multivallate Rath	Fragments of three jet bracelets	Harper 1972, 78.
Ninch, Co. Meath	Multi-period site	Fragments of two jet bracelets	Eogan & Reid 2000:0760
Oldcourt, Co. Cork	Rath	Three fragments of jet bracelets	O'Kelly 1961.
Oldcourt, Co. Cork	Rath	Jet core.	O'Kelly 1961.
Rathnew, Co. Westmeath (Uisneach)	High Status Enclosure	Fragments of four jet bracelets	Macalister & Praeger 1928.
Reask, Co. Kerry	Ecclesiastical Site	?	Comber 2008, 168.
Simonstown, Co. Meath	Rath	Fragments of jet bracelets.	Kelly 1975:33.

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). Porphyry was used mostly by the Romans as a decorative building material, and may have been seen as an appropriate material for inclusion in portable altars. Lynn noted that fragments have been found at the ecclesiastical sites of Armagh, Co. Armagh; Downpatrick, Co. Down; Movilla Abbey, Co. Down; and Kilteel, Co. Kildare. Generally, they were found in contexts that post-dated A.D. 1000. There were also seven separate finds of the material from Fishamble Street and Christ Church Place, Dublin (Wallace 1987, 220). Since Lynn's survey, further examples of green porphyry have been found at Clonmacnoise (King 1992:157) and Derrynaflan, Co. Tipperary (O Floinn 1985:53). The bias of the material towards ecclesiastical sites would tend to support the theory that it had some religious function.

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 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 1987, 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 'Gospel of St. Martin' that was taken from 'Dunbo in Dal Riada' (Dunboe, Co. Londonderry) in 1182 (*Annals of the Four Masters*) may also have arrived in Ireland through the relics trade.

Internal Trade

Our 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 of Ireland, and even where there are substantial differences at this period – for example the presence of souterrain ware in northeast Ulster in an otherwise aceramic island – only two sites, Killegar, Co. Wicklow (Ryan 1973, 641), and Millockstown, Co. Meath (Manning 1986), from outside this core area have, to date, produced evidence of souterrain ware (although, souterrain ware has recently been identified artefacts excavated on an early medieval settlement by Francois Henry in the Iniskeas, Co. Mayo; Sharon Greene, pers. comm..)

It has been argued that concentrations of certain products, such as the 524 whetstones/honestones from Tullycommon (Cahercommaun), Co. Clare (Hencken 1938), 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 origin of the stones from Nendrum has been located 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 (Davidson 1962, 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 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-Norse 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 & 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 *tuatha* 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 & 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'. (*Chronicon Scottorum* 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. The *Leahbar na g-Ceart* (Book of Rights) was composed sometime after A.D. 900 (O'Donovan 1847, xi), and this mentions drinking horns, slave-women, hounds, weaponry, chess-sets, and clothing all changing hands as part of this procedure, as well as the livestock dues (*ibid.* 69-71).

Conclusion

The various phases of external trade across the early medieval period not only highlight a change in overseas trading partners, but also a significant shift in the way in which trade is organised in Ireland. In the earlier phases - up to *c.* A.D. 800 - external goods appear to have been 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 & 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 (1988) who proposed a more European-style model based on the role of local magnates.

The establishment of the Hiberno-Norse towns marks a significant change in how external trade is managed in Ireland. In this 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-Norse 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.

Chapter 9. Conclusions and future challenges

Background

- The Early Medieval Archaeology Project has shown how the incredible richness, complexity and potential of the excavated archaeological evidence for the period 1930-2004, and in particularly the transformative nature of archaeological discoveries in the last decade.

- EMAP's research, data capture, data analysis and first-stage archaeological interpretation presented in this report has shown that entirely new types and forms of early medieval archaeological sites have been discovered, investigated and recorded, that if made more fully available and integrated into archaeological research and publication will transform our understanding of this key period in Ireland's past.

- EMAP has shown through its construction and analysis of a Microsoft Access database of 2,208 early medieval sites excavated (containing 3,047 excavations) between 1930-2004 how the character of Irish archaeology itself has been transformed. The location, character and density of archaeological excavations have been changed, almost entirely due to the onset of development-led archaeological investigations since the mid 1990s. However, the pace and extent of these excavations have varied across the island and the distribution of different types of excavated sites is biased by several factors.

- EMAP has also shown that there has been immense research capacity building in the commercial sector, and the standards of quality and range of investigative and analytical methods and techniques being used in archaeological projects are now undoubtedly at their highest in the history of Irish archaeology. However, EMAP has also shown that the human and financial resources devoted to research and interpretations in the Universities, Museum and state sector have largely remained static in 1930-2004 (despite immense growth and pressures in all these sectors).

- However, despite a general perception of a 'crisis' in Irish archaeology of non-publication, EMAP has shown that the problem may not be quite of the scale hitherto believed. EMAP suggests that of the 2,208 early sites, (where excavations were undertaken both on and in vicinity of_, between 1930-2004; only 95 would be considered to be 'Highly Significant'; 307 'Significant'; 485 'General Significant', 302 'Uncertain' while 1,019 site excavations were of 'No Archaeological Significance'. Obviously the grading of sites is subjective and more information will change these figures, but the key point is that this is not an insurmountable problem. Irish archaeologists, through a well-funded collaborative research programme such as EMAP (and other projects for other periods) could easily cope with the publication and dissemination of this new archaeological evidence.

- Future initiatives to exploit this early medieval archaeological data will require both a step change in the funding of research in these bodies, but also a new collaborative research culture in Irish archaeology across all sectors. EMAP has provided one example of how a funded programme of research can enable high-quality reviews and reports.

Settlement and landscape

- EMAP has demonstrated that a wide range of new early medieval settlement types have been identified as excavations move beyond the confines of traditional SMR sites and into the landscape. Of the EMAP site categories investigated, a total of 346 sites were

'settlement enclosures'; 101 were 'settlement landscapes'; 129 were 'unenclosed' habitation sites, 12 were 'settlement/cemeteries and 216 were earth agricultural/industrial structures or features. A total of 89 sites were in Viking/Hiberno-Norse towns.

- Early medieval dwellings and settlement activities were often situated within enclosures, typically but not exclusively, classic ringforts. In recent years, a much wider range of 'settlement enclosures' (e.g. 'settlement/cemeteries', palisaded enclosures, settlements within field enclosures, ecclesiastical enclosures) have been investigated that do not fit closely with modern categories of archaeological evidence, but reveal the varied and evolving character of settlement in the early medieval landscape. There is also evidence for local and regional variation; for the chronologies of continuity and change on sites and the potential shifting social, ideological and political factors behind the changing character of the cultural biographies of early medieval settlements. It would be important for future studies to bear this social and cultural variability in mind.

- Early medieval *unenclosed* habitation sites were also uncovered in 1930-2004, and in increasing numbers in recent years, across the island, of a range of different types and forms (e.g. early medieval houses in fields; early medieval occupation evidence, souterrains associated with unenclosed settlement; there was also evidence for early medieval dwelling activities in caves, early medieval occupation at shell middens, etc). These sites offer new insights into the organization of early Irish society, the dispersion of settlement across the land and potentially the processes of historical and social change across the period, AD 400-1200.

- EMAP has show the scale and extent of investigation of urban archaeological deposits dating to the Viking Age/Hiberno-Norse periods in such major cities and towns as Dublin, Waterford, Cork, Limerick and Wexford, with their well-known contribution to our understanding of urban origins, enclosures and defences, settlement, trade and exchange, crafts and economy and relationships with wider political and rural hinterlands.

- Finally, a large corpus of early medieval buildings has been investigated 1930-2004. The EMAP database indicates that over 480 buildings were excavated 1970-2002 on rural settlements and 566 Viking buildings. These could provide key insights into the social, economic and ideological organization of domestic and dwelling space.

Church

- EMAP has demonstrated that an increasing range of evidence has been uncovered that will enable scholars to trace how the introduction of Christianity transformed the Irish landscape over the early medieval period. Of EMAP's site categories, a significantly large proportion was 'Church/Ecclesiastical'. New archaeological evidence has been uncovered to trace the function of ecclesiastical sites and how they related to settlement/cemetery sites, unenclosed cemeteries, ecclesiastical cemeteries and the wider landscape of secular settlement, travel and the economy. There is also a surprising range of evidence for the excavation of 'early medieval monuments' such as round towers, high crosses and leachta that needs to be integrated. Finally, the archaeological evidence outlined here certainly contributes to the ongoing debate about the 'monastic town' in Ireland.

- This EMAP report has focused on analyzing the known archaeological evidence for ecclesiastical enclosures, the character of the early church (5th-9th century AD), the evidence for wooden churches and structures and the evidence for agriculture, craftworking and trade.

- The EMAP database has also shown that there is growing archaeological evidence for the role of monastic enclosures in the growth of 'towns' in early medieval Ireland.

- Finally, EMAP has shown that this emerging archaeological evidence can be used to trace the character of pastoral care and the organization of ecclesiastical estates.

Burial

- EMAP has shown that there is significant diversity and variety in burial rites and contexts in early medieval Ireland.

- During the late Iron Age/early medieval transition period, between the 4th-6th century AD, early medieval communities were burying their dead in a range of burial grounds (including penannular and annular ring ditches; mounds, standing stones and other unenclosed sites). Such burials speak strongly of people's sense of connection with the past and with particular places in the landscape and the range of beliefs and practices held to by the population, both ancient and new.

- By the 7th-8th century, early medieval ecclesiastical enclosures around churches became the focus for burial of some, but certainly not all, the population. Indeed, radiocarbon dates from 'settlement/cemeteries' reveal that many people continued to be buried close the land itself, beside dwellings and settlements well into the Christian era. Early medieval burial in caves, middens and other contexts also argues for the survival of 'pagan' or at the least, more complex forms of Christian burial around the island, raising intriguing questions of religious identities in the period.

- The 9th-11th centuries AD saw the re-introduction of 'pagan' burial rites and practices by Norse in Ireland, both in association with early longphort and the developed Hiberno-Norse towns, but also in isolated rural locations.

- An intriguing range of evidence has also shown that 'settlement/cemeteries' (also known in the literature as cemetery/settlements) were used from the 5th-11th century, and were not always phases of use in settlement enclosures.

- At the least, all this evidence analysed by EMAP demonstrates that early medieval burial practices were 'messy' and contingent, as local communities responded to the deaths of their people in various ways. In a sense, we can trace strong evidence for changes in burial practice across time – but that the evidence cannot easily be categorized in to 'early' and 'late' practices. It should also be acknowledged, although outside the scope of the EMAP project, that these excavations provide a unique opportunity to investigate the demographics and populations of early medieval Ireland, the diet, health, diseases and ways of life of the people of early medieval Ireland.

Agriculture

- The character and organization of early medieval agriculture is comparatively well-understood; the role of dairying and the role of arable crops and the place of farming in early Irish society have all been reconstructed from known archaeological, environmental and historical evidence.

- However, EMAP has revealed that there has been a significant amount of discoveries in 1930-2004, but particularly in recent years, for entirely new types of archaeological evidence for agriculture in early medieval Ireland that have yet to be integrated into our understandings. Of EMAP's site categories, large numbers were 'Agricultural (mills, kilns, fields) while much of the other site categories had evidence for agricultural activities. It could be argued the well-known knowledge of the 'revolutions' in early Irish farming could now be matched with a revolution in the understanding of the scale and intensity of settlement and land-use in the Irish landscape and the real role of farming in social life and practice.

- EMAP has demonstrated the increasing evidence for early medieval field-systems (at least 30 early medieval sites were associated with field systems) and enclosures of varying sizes, types and shapes; for souterrains, corn-drying kilns and water mills, for bog trackways and coastal fisheries and other features associated with economy and the land. EMAP has shown that there is growing data for the scale and extent of arable production. There is also potentially evidence that could be used to reconstruct the regionality of agricultural practices across the country.

Crafts/Industry and Trade/ Exchange

- EMAP briefly reviewed the evidence for crafts and technology, focusing in particular on ironworking, non-ferrous metalworking, stone, glass and vitreous materials and organic raw materials (e.g. wood, bone and antler, textiles), with tables of evidence outlining the potential for future research and investigation.
- EMAP's review of the evidence for imported pottery, glass, coins, amber and other objects from early medieval excavations, 1930-2004 also arguably provides a valuable resource for future studies.
- It is also evident from more recent projects, that early medieval excavations in Ireland have uncovered potentially thousands of early medieval artefacts, with the wider contextual evidence for resource procurement, technological skills and crafts; manufacturing processes and the distribution and uses of different types of wooden, leather, antler/bone, textiles, glass, copper-alloy, iron, silver, gold and other objects all well-recorded.
- Artefact studies have proven to be less popular in this generation and EMAP's review suggests that there is vast potential for a re-invigorated study of the material culture of our early medieval past. The use, repair, discarding and abandonment of these objects has led to their identification in the archaeological record and thus it should be possible to re-invigorate the study of early medieval material culture assemblages, within their widest social, ideological, economic and cultural contexts.
- For example, an analysis of ironworking on early medieval sites enables an investigation of the scale and context of ironworking evidence and the social and ideological status of the blacksmith and the scale of ironworking at various types of sites.
- The importation of exotic pottery can be revealing about the changing social and cultural contexts of trade and exchange and the perception and role of 'distant places and objects' in early medieval society.

In conclusion, Irish archaeologists have excelled in uncovering new data from early medieval Ireland and an extraordinary range of stories now need to be told about this time, place and its peoples. EMAP has laid out the bones of some of the stories – and has helped to show how we could begin to tell them.

Bibliography

Aalen, F. H. A. & K. Whelan (eds.), 1992. *Dublin City and County: From Prehistory to Present,* Dublin: Geography Publications.

Aalen, F. H. A., K. Whelan & M. Stout 1997. *Atlas of the Irish rural landscape,* Cork: Cork University Press.

Abrams, L. 1997. The conversion of the Scandinavians of Dublin. *Anglo-Norman Studies,* 20, 1–29.

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

Adair, J. E. 1978. *The pilgrims' way: shrines and saints in Britain and Ireland* London: Thames and Hudson.

Adams, F. R. G. 1960. Killucan—some remarks on its prehistory and history. *Ríocht na Midhe,* 2(2), 23–34.

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.

Alcock, O., K. de hÓra & P. Gosling 1999. *Archaeological inventory of County Galway Vol.2, North Galway,* Dublin Stationery Office.

Aldridge, R. B. 1966. Two cross inscribed stones in Co. Mayo (note). *Journal of the Royal Society of Antiquaries of Ireland,* 66, 96–7.

–––– 1969. Notes on children's burial grounds in Mayo. *Journal of the Royal Society of Antiquaries of Ireland,* 99, 83–7.

Alexander, J. J. G. 1978. *Insular manuscripts, 6th to the 9th century* London: Harvey Miller.

Alexander, S. 1997. Daniel themes on the Irish High Crosses, in *The Insular Tradition*, eds. C. E. Karkov, M. Ryan & R. Farrell Albany: State University of New York Press, 20-3.

Allen, J. R. 1992. *Early Christian symbolism in Great Britain and Ireland. Lecture 1-2: The Romano-British period and Celtic monuments: with an account of early Christian symbolism in foreign countries*: Felinfach : Llanerch Publishers.

Ambrosiani, B. 1998. Ireland and Scandinavia in the early Viking age: an archaeological response, in *Ireland and Scandinavia in the early Viking age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press, 405–20.

Anderson, A.O & Anderson, M.O. 1961. *Adomnan's Life of Columba*, Nelson, London.

Anderson, J. 1974–1975. Romanesque heads in Teampall Jarlath, Tuam [note]. *Journal of the Galway Archaeological and Historical Society,* 34, 98–101.

Anderson, M. 1982. Dalriada and the creation of the kingdom of the Scots, in *Ireland in Early Medieval Europe: studies in memory of Kathleen Hughes* eds. D. Whitelock, R. McKitterick & D. N. Dumville Cambridge: Cambridge University Press, 106–32.

Anonymous 1937. A circular stone fort in Co. Wexford (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 311.

–––– 1937. The "Druuides" stone of Killeen Cormaic. *Journal of the Kildare Archaeological and Historical Society,* 12(2), 66–73.

–––– 1937. Excavations of stone circle and two stone forts at Lough Gur *North Munster Antiquarian Journal,* 1(2), 82.

–––– 1938. Excavations at Lough Gur, 1938 (note). *North Munster Antiquarian Journal,* 1(3), 124–5.

–––– 1939. Excavations at Lough Gur, 1939 (note). *North Munster Antiquarian Journal,* 2(1), 47–9.

–––– 1940. Excavations at Lough Gur, 1940 (note). *North Munster Antiquarian Journal,* 2(4), 172–3.

–––– 1941. Bronze pin from near Ardee. *Journal of the Louth Archaeological and Historical Society,* 10(1), 54.

–––– 1942. Bog finds in Ardee district [note]. *Journal of the Louth Archaeological and Historical Society,* 10(2), 157.

–––– 1942. Bronze pin found near Ardee [note]. *Journal of the Louth Archaeological and Historical Society,* 10(2), 156.

–––– 1956–1957. Souterrain found in the townland of Kildalton (Note). *Old Kilkenny Review (Note),* 9, 47.

–––– 1956–1957. Souterrain found in the townland of Kildalton (note). *North Munster Antiquarian Journal,* 9, 47.

–––– 1988. Patrician Landscapes and Sites. *Archaeology Ireland,* 2(1), 25–9.

–––– 2002. The round tower [Tullaherin, near Bennetsbridge]. *Old Kilkenny Review,* 16–7.

Archaeological Exploration Committee, R. 1969. Archaeological Exploration Committee: report,—Knowth, Dunboy Castle (Cork), Shalwy (court cairn, Donegal), Liathmore-Mochoemóg (mediaeval monastic site, Tipperary), Ballyglass (court cairn, Mayo) and Newgrange. Annual Report 1968-69. *Proceedings of the Royal Irish Academy Section C,* 68, 16–22.

Archaeological Exploration Committee, r. 1970. Archaeological Exploration Committee: report,—Breany (ringfort, Longford), Behy (court cairn, Mayo), Knowth, Dunboy Castle (Cork), Shalwy & Croaghbeg (court cairns, Donegal), Liathmore-Mochoemóg (mediaeval monastic site, Tipperary), Carrownaglogh & Behy (prehistoric enclosures under peat, Mayo), Ballyglass (court cairn, Mayo), Rathgall (hillfort, Wicklow), Carrowbrack (mound, Mayo), and Rinmore (non-archaeological), Galway. Annual Report 1969-70. *Proceedings of the Royal Irish Academy Section C,* 69, 16–27.

Arnold, B. 1969. *A concise history of Irish Art,* Oxford University Press.

Atkinson, J. A., I. Banks & J. O'Sullivan (eds.), 1996. *Nationalism and archaeology,* Galway: Cruithne Press.

Avery, M. 1991–1992. Caiseal na nDuini and Cashelreagan: two forts in Rosguill, Co. Donegal *Ulster Journal of Archaeology,* 54–55, 120–8.

–––– 1991–1992. Cashel-na-Vean, Rosguill, Co. Donegal *Ulster Journal of Archaeology,* 54–55, 113–9.

B.B.G. 1997. Kilcrohane [K.A.M. Vol. III, No. 14, April 1915, 119-122]. *Journal of the Kerry Archaeological and Historical Society,* 30, 47–8.

Bailey, R. N. 1963. The Clogher Crucifixion: a Northumbrian parallel and its implications. *Journal of the Royal Society of Antiquaries of Ireland,* 93, 187–8.

–––– 1984. Irish Sea contacts in the Viking period: the sculptural evidence, in *Tredie Tvaerfaglige Vikingesymposium*, eds. G. F. Jensen & N. Lund Copenhagen, 1–36.

–––– 1990. An early Irish carved stone in Northern England (note). *Journal of the Royal Society of Antiquaries of Ireland,* 120, 126–8.

Baillie, M. G. L. 1975. A horizontal mill of the eighth century AD 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

–––– 1985. Irish dendrochronology and radiocarbon calibration *Ulster Journal of Archaeology,* 48, 11–23.

–––– 1986. A sherd of souterrain ware from a dated context (Drumard, Derry - late 8th century) *Ulster Journal of Archaeology,* 49, 106.

–––– 1988. Marker Dates- Turning Prehistory into History. *Archaeology Ireland,* 2(4), 154–6.

–––– 1995. Patrick, comets and Christianity'. *Emania,* 13, 69–78.

–––– 1998. *Exodus to Arthur: catastrophic encounters with comets,* London: Batsford.

–––– 2000. A Dark Age indeed: a dendrochronologist looks at the evidence for a sixth-century catastrophe. *Medieval Life,* 14, 2–7.

Bain, G. 1951. *Celtic art: the methods of construction* Glasgow: Wm Maclellan Publishers

Bairead, F. 1943. The Northmen of Limerick. *North Munster Antiquarian Journal,* 3(4), 213–21.

Baker, C. 2004. A lost ecclesiastical site in Finglas. *Archaeology Ireland,* 18(3), 14–7.

–––– 2006. Putting the cill into Killeen. *Archaeology Ireland,* 20(4), 8–10.

Bakka, E. 1965. Some decorated Anglo-Saxon and Irish metalwork found in Norweigan Viking graves, in *Proceedings of the fourth Viking Congress*, ed. A. Small London, 32–40.

Bannerman, J. 1974. *Studies in the history of Dalriada* Edinburgh Scottish Academic Press

Barber, J. W. 1981. Excavations on Iona 1979. *Proceedings of the Society of Antiquaries of Scotland,* 111, 282–380.

Barber, J. W. & B. A. Crone 1993. Crannogs; a diminishing resource? A survey of the crannogs of southwest Scotland and excavations. *Antiquity,* 67(256), 520.

Barnard, T., D. Ó Cróinín & K. Simms (eds.), 1998. *'A miracle of learning': studies in manuscripts and Irish learning: essays in honour of William O'Sullivan,* Aldershot: Ashgate.

Barnes, M., J. R. Hagland & R. I. Page 1997. *The runic inscriptions of Viking age Dublin* Dublin: Royal Irish Academy for the National Museum of Ireland and the Royal Irish Academy.

Barrett, G. F. 1980. Aerial Photography and the study of early settlement structures in Ireland *Aerial Archaeology,* 6, 27–38.

–––– 1980. A field survey and morphological study of ringforts in southern, Co. Donegal. *Ulster Journal of Archaeology,* 43, 39–51.

–––– 1982. Ring-fort settlement in County Louth: sources, pattern and landscapes. *Journal of the Louth Archaeological and Historical Society,* 20 (2), 77–95.

–––– 1983. Reconstruction of proto-historic landscapes using aerial photographs. *Journal of the Louth Archaeological and Historical Society,* 20(3), 215–36.

–––– 1990. The hidden landscape: the evidence of aerial reconnaissance, July 1989 *Archaeology Ireland,* 4(3), 26–8.

–––– 1992. Landscapes at Risk. *Archaeology Ireland,* 6(2), 16–8.

Barrett, G. F. & B. J. Graham 1975. Some considerations concerning the dating and distribution of ring-forts in Ireland. *Ulster Journal of Archaeology,* 38, 33–45.

Barrett, J. H. (ed.) 2003. *Contact, continuity, and collapse: the Norse colonization of the North Atlantic* Turnhout Brepols

Barrow, G. L. 1972. *Glendalough and Saint Kevin,* Dundalk: Dundealgan Press.

–––– 1979. *The Round Towers of Ireland: a study and gazetteer* Dublin: Academy Press.

Barrow, L. 1974–1975. The round tower of Kildare. *Journal of the Kildare Archaeological and Historical Society,* 15(4), 406–18.

Barry, P. 1976. St. Craven's Well, near Ennistymon, Co. Clare (note). *North Munster Antiquarian Journal,* 18, 80–1.

Barry, T. B. 1978. Three bullaun stones at Kelshamore, County Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 108, 116.

–––– 1981. Archaeological excavations at Dunbeg promontory fort, County Kerry, 1977. *Proceedings of the Royal Irish Academy Section C,* 81, 295–329.

–––– 1988. *The archaeology of medieval Ireland* London: Routledge.

–––– 2000. The history of settlement in Ireland London: Routledge, 296.

Barton, R. 2000. A possible slave-chain from Knowth, Co. Meath. *Ríocht na Mídhe,* 11(1), 20–3.

Bass, G.F. & van Doorninck, F.H. 1982. *Yassi Ada, a seventh-century Byzantine shipwreck*, Texas A & M University Press, Texas.

Bateson, J.D. 1973. 'Roman material from Ireland', *Proceedings of the Royal Irish Academy* (73C), 21-97

Bateson, J.D. 1976. 'Further finds of Roman material from Ireland', *Proceedings of the Royal Irish Academy* (76C), 171-180.

Battersby, W. 1995. *The Book of Kells* Navan.

Bayley, D. 2003. Megalithic Art discovered in Souterrain. *Archaeology Ireland,* 17(3), 4.

Bayley, D. & N. Roycroft 2003. Souterrain City. *Archaeology Ireland,* 17(4), 24–7.

Beattie, S. 1994. *Ancient monuments of Inishowen, North Donegal,* Donegal: Lighthouse Publications.

Beaverson, G. 1998. The fury of the Northmen. *Christian History,* 17(4), 41.

Beck, H. C. 1934. Report on Irish beads in Salisbury Museum. *Journal of the Royal Society of Antiquaries of Ireland,* 64, 268.

Beckwith, J. 1970. *Early Christian and Byzantine art* Harmondsworth: Penguin Books.

Belier, A.-C. 1981–1982. A sherd of terra sigillata from Wood Quay, Dublin. *Ulster Journal of Archaeology,* 44–45, 192–4.

Bell, J. 1981. Sickles, hooks and scythes in Ireland. *Folklife,* 19, 26–35.

–––– 1984. A contribution to the study of cultivation ridges in Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 114, 80–97.

Bennett, E. J. 1934. Drumasail (Tory Hill) fort, Co. Limerick (note). *Journal of the Royal Society of Antiquaries of Ireland,* 64, 139–41.

Bennett, I. 1986. Excavations of two long stone cists at Dromkeen East, Causeway. *Journal of the Kerry Archaeological and Historical Society,* 19, 151–65.

–––– 1987. The Archaeology of County Kerry. *Archaeology Ireland,* 1(2), 48–51.

–––– 1989. The settlement pattern of ringforts in County Wexford. *Journal of the Royal Society of Antiquaries of Ireland,* 119, 50–61.

–––– 1994. Excavations of Clocháin in Glin North townland, Co. Kerry. *Journal of the Kerry Archaeological and Historical Society,* 27, 107–25.

–––– 1996. Archaeological investigations at Caherquin, near Ballyferriter, Co. Kerry. *Journal of the Kerry Archaeological and Historical Society,* 29, 5–30.

Bennett, I. & M. i. Uí Shíthigh 1995. *Ogham stones of the Dingle Peninsula* Ballyferriter: Ballyferriter: Oidhreacht Chorca Dhuibhne.

Beranger, G. 1998. *Drawings of the principal antique buildings of Ireland: National Library of Ireland ms 1958 TX (edited by Peter Harbison),* Dublin: Four Courts, in association with the National Library of Ireland.

Berger, P. 1979. The Ardagh Chalice, numerology and the Stowe Missal. *Ériu- Ireland,* 14(3), 6–16.

Berger, R. 1992. 14C dating mortar in Ireland. *Radiocarbon,* 34(3), 880-9.

–––– 1995. Radiocarbon dating of early medieval Irish monuments. *Proceedings of the Royal Irish Academy Section C,* 95, 159–74.

Bermingham, N. 2006. Discoveries on the N6. *Seanda: National Roads Authority Magazine,* 1, 6.

Berry, R. G. 1938. Ancient Irish house types (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 162–4.

Berry, R. G. & M. J. Nolan 1932. Report on the ancient graveyard at Annalong, Co. Down. *Journal of the Royal Society of Antiquaries of Ireland,* 62, 219–23.

Bersu, G. 1947. The rath in Lissue townland, Co. Antrim: report on excavation in 1946. *Ulster Journal of Archaeology,* 10, 30–59.

–––– 1948. Preliminary report on the excavations at Lissue, 1947. *Ulster Journal of Archaeology,* 11, 131–3.

–––– 1966. *Three Viking graves in the Isle of Man,* London: Society for Medieval Archaeology.

Bethell, D. L. T. 1981. The originality of the early Irish Church. *Journal of the Royal Society of Antiquaries of Ireland,* 111, 36–49.

Beutmann, J. 1994. An imported revolution? Urbanisation in Ireland before AD 1100. *Trowel,* 5, 8–14.

Bhreathnach, E. 1994. Killeshin: an Irish monastery surveyed. *Cambridge Medieval Celtic Studies,* 27, 33–47.

–––– 1995. *Discovery Ireland Programme: A select bibliography / 3, Tara* Dublin: Royal Irish Academy for the Discovery Programme.

–––– 1996. The documentary evidence for pre-Norman Skreen, County Meath. *Ríocht na Mídhe,* 9(2), 37–45.

–––– 1998. Saint Patrick, Vikings and the Longphort in the early Irish literary tradition. *Wicklow Archaeology and History,* 1, 36–40.

–––– 1998. The Tech Midchuarta,'the house of the mead-circuit': feasting, royal circuits and the king's court in early Ireland *Archaeology Ireland,* 12(4), 20–2.

–––– 1998. Topographical note: Moynagh Lough, Nobber, Co. Meath. *Ríocht na Mídhe,* 9(4), 16–9.

–––– 1999. Columban churches in Brega and Leinster: relations with the Norse and the Anglo-Normans. *Journal of the Royal Society of Antiquaries of Ireland,* 129, 5–18.

–––– (ed.) 2005. *The kingship and landscape of Tara* Dublin: Four Courts Press for the Discovery Programme.

–––– 2005. The Medieval Kingdom of Tara, in *The Kingship and landscape of Tara*, ed. E. Bhreathnach Dublin: Dublin: Four Courts Press for the Discovery Programme, 410–22.

Bhreathnach, E. & C. Newman 1995. *Teamhair,* Dublin: Stationery Office.

Bieler, L. 1963. *Ireland: harbinger of the Middle Ages,* Oxford: Oxford University Press.

—— 1968. The Christianization of the Insular Celts during the sub-Roman period and its repercussions on the Continent. *Celtica,* 8, 112–25

Bieler, L. & G. Mac Niocaill 1960. Fragment of an Irish double psalter with glosses in the library of Trinity College, Dublin. *Celtica,* 5, 28–39

Binchey, D.A. 1978. *Corpus iuris hibernici*, Dublin Institute for Advanced Studies, Dublin.

Binchy, D. A. 1981. Brewing in eighth century Ireland, in *Studies in early Ireland*, ed. B. G. Scott Belfast.

Birthistle, D. 1969. Inistioge. *Old Kilkenny Review,* 21, 31–47.

Bitel, L. M. 1984. Women's donations to the churches in early Ireland. 114, 5–23.

—— 1986. Women's monastic enclosures in early medieval Ireland: a study of female spirituality and male monastic mentalities. *Journal of Medieval History,* 12, 15–36.

—— 1992. Conceived in sins, born in delights": stories of procreation from early Ireland. *Journal of the History of Sexuality,* 3(2), 181–202.

—— 1993. *Isle of the saints: monastic settlement and Christian community in early Ireland* Cork: Cork university Press.

—— 1996. *Land of Women: Tales of Sex and Gender from Early Ireland* New York: Cornell University Press.

—— 2002. *Women in Early Medieval Europe, 400-1100,* Cambridge: Cambridge University Press.

Black, L. 2000. The Round Towers of Ireland. *The Glynns,* 28, 11-24.

Blackburn, M. 1975. Hiberno-Norse imitations of Watchet long cross coins. *Numismatic Chronicle,* 15, 195–7.

—— 1977. Thoughts on imitations of the Anglo-Saxon coins. *Seabys Coin and Medal Bulletin*, 344–50.

Blackburn, M. & H. Pagan 1986. A revised check-list of coin hoards from the British Isles c.500-1100, in *Anglo-Saxon monetary history: essays in memory of Michael Dolley*, ed. M. Blackburn Leicester: Leicester University Press, 291–314.

Blackwell, M. 1983. *Croagh Patrick: the holy mountain of Ireland* Newport: M. Blackwell.

Blair, G., D 2008. Chiefdoms and the emergence of private property in land. *Journal of Anthropological Archaeology,* 27(1), 46–62.

Blair, J. & C. Pyrah (eds.), 1996. *Church archaeology: research directions for the future,* London.

Blair, J. & R. Sharpe (eds.), 1992. *Pastoral care before the parish* Leicester: Leicester University Press.

Blindheim, M. 1984. A house-shaped Irish-Scots reliquary in Bologna and its place among the other reliquaries. *Acta Archaeologica,* 55, 1–53.

Boal, F. W. & M. K. Moffitt 1959. A partly destroyed rath in Killarn townland, Newtownards, Co. Down. *Ulster Journal of Archaeology,* 22, 107–11.

Boe, J. 1940. Norse antiquities in Ireland, in *Viking Antiquities in Great Britain and Ireland (Part III)*, ed. H. Shetelig Oslo.

Boland, D. & A. O'Sullivan 1997. Underwater excavations of an early medieval wooden bridge at Clonmacnoise, Co. Offaly, in *The quaternary of the Irish midlands*, eds. F. Mitchell & C. Delaney Dublin: Irish Association for Quaternary Studies, 55–63.

Boll, S. 2004. Seduction, vengeance and frustration in Fingal Rónáin: the role of Foster-Kin in structuring the narrative. *Cambridge Medieval Celtic Studies,* 47, 1–16.

Bonde, N. 1998. Found in Denmark, but where do they come from? *Archaeology Ireland,* 12(3), 24–9.

Bourke, C. 1980. Early Irish Hand-Bells. *Journal of the Royal Society of Antiquaries of Ireland,* 110, 52–66.

—— 1982. Two early hand-bells from Kilkenny. *Old Kilkenny Review*, 370–2.

—— 1985. A crozier and bell from Inishmurray and their place in ninth-century Irish archaeology. *Proceedings of the Royal Irish Academy Section C,* 85, 145–68.

—— 1986. Early Irish hand bells. *Journal of the Dromore Historical Society (Seanchas Dhroim Mor),* 4, 27–38.

—— 1986. A panel on the North Cross at Clonmacnois. *Journal of the Royal Society of Antiquaries of Ireland,* 116, 116–21.

—— 1987. The Doras/Tullyniskan bell *Ulster Journal of Archaeology,* 50, 155–6.

—— 1987. Irish croziers of the eighth and ninth centuries, in *Ireland and Insular Art, A.D. 500-1200*, ed. M. Ryan Dublin: Royal Irish Academy, 166–78.

—— 1988. A ringed pin from Lough Ravel crannog, County Antrim *Ulster Journal of Archaeology,* 51, 55–60.

—— 1988. Three twelfth century appliqué figures, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. Mac Niocaill & P. F. Wallace Galway: Galway University Press, 112–26.

—— 1989. Notes on the relics of St. Patrick. *Lecale Miscellany,* 7, 5–10.

—— 1989. On a lost mount from the Cross of Cong. *Archaeology Ireland,* 3(1), 14–6.

—— 1990. On the 'crozier of Glendalough'. *Archaeology Ireland,* 4(4), 10–1.

—— 1991. The Blackwater Shrine. *Dúiche Néill,* 6, 103–6.

—— 1991. Good news from North Armagh. *Archaeology Ireland,* 5(4), 6.

—— 1991. The 'Virtues' of a Blackwater Bowl. *Archaeology Ireland,* 5(3), 22.

—— 1992. The Ballyrea Brooch. *Emania,* 10, 66–7.

—— 1992. Notes on the Cross of Downpatrick. *Lecale Miscellany,* 10, 42-3.

—— 1993. Antiquities from the river Blackwater II, Iron Age metalwork *Ulster Journal of Archaeology,* 56, 109–13.

—— 1993. *The Archaeology of a Saint,* Belfast: HMSO.

—— 1993. The Chronology of Irish Crucifixion Plaques, in *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, eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 175–81.

–––– 1994. The hand bells of the early western church, in Irlande et Bretagne: vingt siécles d'histoire. Essais: Actes du Colloque de Rennes 29-31 Mars 1993, eds. C. Laurent & H. Davis Rennes, 77–82.

–––– 1994. Report from the River Bann. Archaeology Ireland, 8(3), 8–9.

–––– 1995. Carved Stones from Donagheary and Stewardstown. The Bell: Journal of the Stewardstown and District Local History Society, 10, 14-35.

–––– 1995. From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994, in Proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April, ed. C. Bourke Belfast: HMSO, 280.

–––– 1995. Further notes on the Clonmore shrine. Seanchas Ardmhacha, 16(2), 27–32.

–––– 1997. Insignia Columba II, in Studies in the cult of St. Columba, ed. C. Bourke Dublin: Four Courts Press, 162–83.

–––– 1997. A note on the Delg Aidechta, in Studies in the cult of St. Columba, ed. C. Bourke Dublin: Four Courts Press, 184–92.

–––– (ed.) 1997. Studies in the Cult of St. Columba, Dublin: Four Courts Press.

–––– 1998. Fine metalwork from the River Blackwater. Archaeology Ireland, 12(3), 30–1.

–––– 2000. The Bells of Saints Caillín and Cuana: two twelfth-century cups, in Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne, ed. A. P. Smyth Dublin: Four Courts Press, 331–40.

–––– 2001. Antiquities from the River Blackwater III, iron axe-heads Ulster Journal of Archaeology, 60, 63–93.

–––– 2001. A view of the early church, in The Vikings in Ireland, ed. A. Larsen Roskilde: The Viking Ship Museum, 77–86.

Bourke, C. & J. Close-Brooks 1989. Five insular enamelled ornaments. Proceedings of the Society of Antiquaries of Scotland, 119, 227–37.

Bourke, C., T. Fanning & N. Whitfield 1989. An Insular brooch-fragment from Norway. Antiquaries Journal, 68, 90–8.

Bourke, C. & M. Fry 1989. Outdoor or In? The future of Ireland's Stone Crosses. Archaeology Ireland, 3(1), 68–71.

Bourke, C. & R. B. Warner 1991. From Blackwater to Bobbio- a coincidence of shrines. Archaeology Ireland, 5(2), 16–7.

Bourke, E. 1987. Glass Vessels In Ireland c. 100-1400, (Unpublished M.A.) Dublin: University College Dublin.

–––– 1988–1989. 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 AD 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), 33–6.

Bourke, F. R. 1980. St. Flannan's Cathedral, Killaloe. The Other Clare, 16–8.

Bowman, A. 1996. Post-Roman imports in Britain and Ireland: a maritime perspective, in External Contacts and the economy of Late Roman and Post-Roman Britain, ed. K. R. Dark Woodbridge: Boydell.

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.

Boyle, P. 1973. The text of St. Luke's Gospel in the Book of Mulling. Proceedings of the Royal Irish Academy Section C, 73, 177–200.

Bracken, D. & D. Ó Riain-Raedel 2006. Ireland And Europe In The Twelfth Century; Reform And Renewal, Dublin: Four Courts Press.

Bracken, G. 1998. A pilgrimage to Iona. Cathair Na Mart, 18, 10–5.

Bradley, J. 1978. The topography and layout of Medieval Drogheda. Journal of the Louth Archaeological and Historical Society, 19(2), 98–127.

–––– 1981–1982. 'Medieval' samian ware - a medicinal suggestion [powdered samian in medicine] Ulster Journal of Archaeology, 44–45, 196–7.

–––– 1982. A separate-bladed shovel from Moynagh Lough, County Meath. Journal of the Royal Society of Antiquaries of Ireland, 112, 117–22.

–––– 1982–1983. Excavations at Moynagh Lough, Co. Meath 1980-81. Ríocht na Midhe, 7 (2), 12–32.

–––– 1984. Ardee: an archaeological study. Journal of the Louth Archaeological and Historical Society, 20(4), 267–96.

–––– 1984. Excavations at Moynagh Lough, 1982-83, interim report. Ríocht na Midhe, 7(3), 86–93.

–––– 1984. The sarcophagus at Cormac's Chapel, Cashel, Co. Tipperary. North Munster Antiquarian Journal, 26, 14–35.

–––– (ed.) 1984. Viking Dublin exposed: the Wood Quay saga Dublin: O'Brien Press.

–––– 1985–1986. Excavations at Moynagh Lough, 1984, summary report. Ríocht na Midhe, 7(4), 79–92.

–––– 1987. Recent archaeological research on the Irish town, in Stadtkernforschung, ed. H. Jager Koln: Wein, 321–

70.

–––– 1988. The interpretation of Scandinavian settlement in Ireland, in *Settlement and Society in Medieval Ireland*, ed. J. Bradley Kilkenny: Boethus, 49–78.

–––– (ed.) 1988. *Settlement and society in medieval Ireland: studies presented to Francis Xavier Martin,* Kilkenny: Boethus.

–––– 1990. Medieval Kilkenny City, in *Kilkenny: history and society. Interdisciplinary essays on the history of an Irish County*, ed. W. Nolan Dublin: Geography Publications.

–––– 1990–1991. 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.

–––– 1992. The topographical development of Scandinavian Dublin, in *Dublin City and County: From Prehistory to Present* Dublin: Geography Publications, 43–56.

–––– 1993. Moynagh Lough: an insular workshop of the second quarter of the 8th century, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 74–81.

–––– 1993. The topographical development of Scandinavian and Anglo-Norman Cork, in *Cork History and Society*, eds. P. O'Flanagan & C. G. Buttimer Dublin: Geography Publications, 15–44.

–––– 1993–1994. The archaeology and history of Saint Patrick: a review article. *North Munster Antiquarian Journal,* 35, 29–44.

–––– 1994. Killaloe: a pre-Norman borough?, . *Peritia,* 8, 170–9

–––– 1994–1995. Excavations at Moynagh Lough, Co. Meath. *Ríocht na Mídhe,* 9(1), 158–69.

–––– 1995. Scandinavian Rural Settlement in Ireland. *Archaeology Ireland,* 9(3), 10–2.

–––– 1995. *Walled towns in Ireland,* Dublin: Dublin : Country House.

–––– 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: Drogheda : The Old Drogheda Society.

–––– 1999. Excavations at Moynagh Lough, Co. Meath, 1997-98. *Ríocht na Mídhe,* 10(1), 1–17.

–––– (ed.) 2000. *Kilkenny,* Dublin: Dublin : Royal Irish Academy.

–––– 2003. *Dublin in the year 1000,* Dublin: Dublin : Dublin City Public Libraries.

Bradley, J. & N. Dunne 1989. The findplace of the Athlone crucifixion plaque. *Organisation of Irish Archaeologists Newsletter,* 8, 13-8.

Bradley, J. & A. Halpin 1992. The topographical development of Scandinavian and Anglo-Norman Waterford, in *Waterford history and society: interdisciplinary essays on the history of an Irish county*, eds. W. Nolan & T. P. Power Dublin: Geography Publications, 105–29.

Bradley, J. & H. King 1985. Romanesque voussoirs at St Fin Barre's Cathedral, Cork. *Journal of the Royal Society of Antiquaries of Ireland,* 115, 146–51.

Brady, C. F. 1983. Some observations on the Ogham script. *Teathbha,* 2(2), 124–.

Brady, J. 1958. Early Christian Meath. *Ríocht na Mídhe,* 1(4), 5–13.

Brady, N. 1994. Fifty years a-ploughing. *Archaeology Ireland,* 8(3), 15–7.

–––– 1994. Labor and Agriculture in Early Medieval Ireland: Evidence from the Sources, in *The Work of Work: Servitude, Slavery and Labor in Medieval England*, eds. A. J. Frantzen & D. Moffat Glasgow: Cruithne Press, 125–45.

–––– 1997. De oratorio: Hisperica famina and church building. *Peritia,* 11, 327–35

–––– 2003. *Exploring Irish medieval landscapes,* Dublin.

–––– 2006. Mills in medieval Ireland: looking beyond design, in *Wind and water, the medieval mill*, ed. S. Walton Pennsylvania: Pennsylvania State University Press, 39–68.

Brannon, N. F. 1979. A small excavation at Turraloskin Townland, County Antrim. *Ulster Journal of Archaeology,* 42, 86–7.

–––– 1979. A trial excavation at an earthwork near Moira, County Down'. *Ulster Journal of Archaeology,* 42, 26–33.

–––– 1980. The excavation of a rath in Ballykennedy townland, County Antrim. *Ulster Journal of Archaeology,* 43, 65–70.

–––– 1980. The excavation of a rath in Drumbroneth townland, Dromore, County Down. *Ulster Journal of Archaeology,* 43, 71–4.

–––– 1980. The Excavation of a rath in Shewis townland, near Richhill, County Armagh. *Ulster Journal of Archaeology,* 43, 106–8.

–––– 1980. A trial excavation at St John's Point Church, County Down *Ulster Journal of Archaeology,* 43, 59–64

–––– 1981–1982. The excavation of a cashel in Carn townland, County Fermanagh. *Ulster Journal of Archaeology,* 44–45, 60–4.

–––– 1981–1982. A rescue excavation at Lisadoo Fort, Lisnaskea, County Fermanagh. *Ulster Journal of Archaeology,* 44–45, 53–9.

–––– 1981–1982. A rescue excavation at Lisdoo fort, Lisnaskea, County Fermanagh. 44–45, 53–9.

–––– 1981–1982. A second sherd of terra sigillata from Carrickfergus *Ulster Journal of Archaeology,* 44–45, 195.

–––– 1986. Five excavations in Ulster 1978-1984. *Ulster Journal of Archaeology,* 49 (3rd Series), 89–98.

–––– 1990. A souterrain in Spittle Quarter townland, Co. Down. *Lecale Miscellany,* 8, 39–41.

Braunfels, W. 1972. *Monasteries of Western Europe: The Architecture of the Orders,* London: Thames and Hudson.

Breen, T. C. 1981. A pre-Norman grave-slab at Rathfarnham, county Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 111, 120–3.

–––– 1988. Excavation of a roadway at Bloomhill Bog, County Offaly. *Proceedings of the Royal Irish Academy Section C,* 88, 321–39.

–––– 2007. Beside the Rath: excavations at Raheenagurren West. Co. Wexford, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 1–10.

Breeze, A. 1988. The shrine of St Brigit at Olite, Spain. *Cambridge Medieval Celtic Studies,* 16, 85–95.

–––– 1988. The Virgin's tears of blood. *Celtica,* 20, 110–22

Brennan, E. J. 1987. A cross-carved slab from Kildare cathedral. *Cambridge Medieval Celtic Studies,* 14, 53–60.

Brennan, J. 1976. Clonamery. *Old Kilkenny Review,* 201–8.

–––– 1979. Foulksrath and its associations. *Old Kilkenny Review,* 50–60.

Brennan, M. 1975. Ogham language. *Old Kilkenny Review,* 104.

–––– 2001. An examination of the modern Celtic cross. *Old Kilkenny Review,* 36–52.

Brenneman, W. & M. Brenneman 1995. *Crossing the Circle at the Holy Wells of Ireland,* Charlottesville: University Press of Virginia.

Brew, F. 1990. Aughinish. *The Other Clare,* 14, 62.

Briggs, C. S. 1987. A neglected Viking burial with beads from Kilmainham, Dublin, discovered in 1847. *Medieval Archaeology,* 29, 94–108.

Briggs, C. S. & J. Sheehan 1987. A hoard of dispersed Viking-age armrings from the Liffeyside, Co. Dublin. *Antiquaries Journal,* 67, 351–2.

Briggs, S. 1978. The Magheralagan hoard: an additional note *Ulster Journal of Archaeology,* 41, 102.

–––– 1981–1982. On the Viking-age silver hoards from Co. Galway. *Journal of the Galway Archaeological and Historical Society,* 38, 79–82.

–––– 1983. A lost hoard of Viking Age silver from Cave Hill, Belfast *Ulster Journal of Archaeology,* 46, 152–3.

Briggs, S. & J. Graham-Campbell 1976. A lost hoard of Viking-age silver from Magheralagan, County Down *Ulster Journal of Archaeology,* 39, 20–4.

Brindley, A. L. 1988. Early ecclesiastical remains at Selloo and Kilnahalter, County Monaghan *Ulster Journal of Archaeology,* 51, 49–53.

Brindley, A. L. & J. N. Lanting 1998. Radiocarbon dates for Irish trackways. *Journal of Irish Archaeology,* 9.

Brindley, A. L., J. N. Lanting & W. G. Mook 1989–1990. Radiocarbon dates from Irish Fulachta Fiadh and other burnt mounds. *Journal of Irish Archaeology,* 5.

Brothwell, D. 1985. Variation in early Irish populations: a brief survey of the evidence *Ulster Journal of Archaeology,* 48, 5–9.

Brothwell, D. & P. Brothwell 1998. *Food in Antiquity: a Survey of the Diet of Early Peoples* Baltimore: The Johns Hopkins University Press.

Brown, M. P. 1993. Paten and purpose: the Derrynaflan paten inscriptions, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 162-7.

–––– 2006. *How Christianity came to Britain and Ireland,* Oxford: Lion Hudson Press.

Brown, T. J. 1971. Northumbria and the Book of Kells in *Anglo-Saxon England. 1*Cambridge: Cambridge University Press, 219–46.

–––– 1982. The Irish Element in the Insular System of Scripts to c. 850, in *Die Iren und Europa im früheren Mittelalter,* ed. H. Lowe Stuttgart: Klett Cotta, 101–19.

–––– 1982. The oldest Irish manuscripts and their late antique background, in *Die Iren und Europa im früheren Mittelalter,* eds. P. Ní Chatháin & M. Richter Stuttgart: Klett Cotta, 311–27.

Bruce-Mitford, R. 1987. Ireland and the hanging bowls– A review Article, in *Ireland and Insular Art, A.D. 500-1200,* ed. M. Ryan Dublin: Royal Irish Academy, 30–9.

Bryan, D. 1967. Dunbell. *Old Kilkenny Review,* 19, 59–60.

Bryce, D. 1992. *The symbolism of the Celtic Cross,* Lampeter: Llanerch Enterprises.

Buckley, L. 1991. *A study of the human skeletal remains from a cemetery at Kilshane, co. Dublin,* (Unpublished MSc.) Belfast: Queen's University Belfast.

–––– 1996. Francis Street, Dublin. Skeletal report (Unpublished), Dublin.

–––– 1996. Solar, co. Antrim, Skeletal report for DOENI (Unpublished), Belfast: Department of Environment Northern Ireland (DOENI).

–––– 1998. Decommissioning our dead. *Archaeology Ireland,* 12(4), 18–9.

–––– 2003. Health status in medieval Dublin: analysis of the skeletal remains from the abbey of St. Thomas the Martyr, in *Medieval Dublin IV: proceedings of the Friends of Medieval Dublin Symposium 2002* ed. S. Duffy Trinity College Dublin: Four Courts Press, 98–126.

–––– 2008. Outcasts, or care in the community? *Archaeology Ireland,* 22(1), 26–31.

Buckley, L. & V. M. Buckley 2000. Kilmoon: A tale of two parishes. *Archaeology Ireland,* 14(2), 4.

Buckley, L. & A. Hayden 2002. Excavations at St. Stephen's leper hospital, Dublin: a summary account and an analysis of burials, in *Medieval Dublin IV: proceedings of the Friends of Medieval Dublin Symposium 2001*, ed. S. Duffy Dublin: Four Courts Press, 151-94.

Buckley, V. M. 1986. A souterrain at Rossdreenagh, Co Monaghan *Ulster Journal of Archaeology,* 49, 104–5.

–––– 1986. Ulster and Oriel souterrains - an indicator of tribal areas? . *Ulster Journal of Archaeology,* 49, 108–12.

–––– 1988–1989. Meath souterrains: some thoughts on Early Christian distribution patterns. *Ríocht na Mídhe,* 8(2), 64–7.

–––– (ed.) 1990. *Burnt offerings: International contributions to burnt mound archaeology* Bray: Bray: Wordwell

–––– 1991. The Stone of Cethern's Delusion. *Archaeology Ireland,* 5(1), 16.

–––– 2000. Shallow Grave. *Archaeology Ireland,* 14(1), 4.

Buckley, V. M. & K. O'Brien 1985–1986. A recently discovered souterrain at Carnmore townland, Co. Galway. *Journal of the Galway Archaeological and Historical Society,* 40, 139–42.

Buckley, V. M. & D. Sweetman 1991. The Wee County- No small heritage. *Archaeology Ireland,* 5(4), 16–9.

Budny, M. 2001. Deciperhing the art of interlace, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 183–210.

Burke, C. & M. Clinton 1983–1984. Three long cists at Britonstown. *Journal of the Kildare Archaeological and Historical Society,* 16(4), 366–70.

Burke, N. 1974. Dublin's North-eastern city wall: early reclaimation and development of the Poddle Liffey confluence. *Proceedings of the Royal Irish Academy Section C,* 74, 142–285.

Burke, S. 2000. Souterrain at Ballycroy. *Cathair Na Mart,* 20, 5.

Burov, G. M. 2005. Fishing gear of the 1st millennium AD in the north east of European Russia. *Journal of Wetland Archaeology,* 5, 5–16.

Butler, V. 1989. Aniamal Bone Studies in Archaeology. *Archaeology Ireland,* 3(3), 104–7.

Byrne, F. J. 1972. Rathmulcah: an historical note. *Journal of the Royal Society of Antiquaries of Ireland,* 102, 73–6.

–––– 1973. *Irish kings and high-kings,* London: Batsford.

–––– 1979. *A Thousand years of Irish script: Catalogue of an exhibition of Irish manuscripts in Oxford Libraries,* Oxford: Oxford University Press.

–––– 1980. Derrynavlan: the historical context. *Journal of the Royal Society of Antiquaries of Ireland,* 110, 116–26.

–––– 1984. A note on Trim and Sletty. *Peritia,* 3, 316–19

–––– 2005. The Viking Age, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 609–34.

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.

Byrne, P. 1940–1941. Old Kilcullen. *Journal of the Kildare Archaeological and Historical Society,* 12(5), 214–6.

–––– 1985. The community of Clonard from the sixth to the twelfth centuries. *Peritia,* 4, 157–73

Cahill, M. 1981. A bronze ringed pin from Bishopslough, Newtown, Co. Kilkenny. *Old Kilkenny Review*, 253.

Cahill, M. & R. Ó Floinn 1995. Two silver kite brooches from near Limerick City. *North Munster Antiquarian Journal,* 36, 65–82.

Calkins, R. G. 1983. *Illuminated books of the Middle Ages,* New York: Cornell University Press.

Callan, M. B. 2003. St Darerca and her sister scholars: women and education in medieval Ireland. *Gender and History,* 15(1), 32–49.

Campbell, E. 1984. E ware and Aquitaine: a reappraisal of the petrological evidence. *Scottish Archaeological Review,* 3(1), 35–41.

–––– (ed.) 1996. *The archaeological evidence for external contacts: imports, trade and economy in Celtic Britain A.D. 400-800,* Woodbridge: Boydell Press.

–––– 2001. Were the Scots Irish? *Antiquity,* 75(288), 285–92.

–––– 2003. The Archaeology of the Early Medieval Celtic Churches. *Scottish Archaeological Journal,* 25(2), 179–81.

–––– 2007. *Continental and Mediterranean Imports to Atlantic Britain and Ireland, A.D. 400-800,* York: Alden Press.

Campbell, K. 2002. Souterrain at Muirhevnamore, Marshes Upper, Dundalk. *Journal of the Louth Archaeological and Historical Society,* 25(2), 202–7.

Carey, J. 1986. The Heavenly City in Saltair na Rann. *Celtica,* 18, 87–104

–––– 1998. Sages, Saints, and Semiotics: Encountering Medieval Irish Literature. *Cambridge Medieval Celtic Studies,* 35, 57–72.

–––– 2001. Recent work on Celtic Christianity. *Cambridge Medieval Celtic Studies,* 42, 83–8.

–––– 2002. Werewolves in Ireland. *Cambridge Medieval Celtic Studies,* 44, 37–72.

Carey, J., M. Herbert & P. Ó Riain (eds.), 2001. *Studies in Irish Hagiography: Saints and Scholars,* Dublin: Four Courts Press.

Carey, O. 2002. Explorations in Tomfinlough (Fenloe) church and graveyard. *The Other Clare,* 26, 24.

Carlin, N., L. Clarke & F. Walsh (eds.), 2008. *The Archaeology of Life and Death in the Boyne Floodplain: the linear landscape of the M4* Bray: Wordwell.

Carney, J. 1975. The Invention of the Ogam Cipher. *Ériu,* 22, 62-3.

Carney, J. & D. Greene (eds.), 1968. *Celtic studies: essays in memory of Angus Matheson, 1912-1962* New York: Barnes & Noble

Carr, K. 1994. The turas (Sts. Peter & Paul). *Donegal Annual,* 46, 114–6.

Carroll, F. & D. Murphy 1987. A second souterrain at Termonfeckin. *Journal of the Louth Archaeological and Historical Society,* 21(3), 287–9.

Carroll, J. 1995. Milliefiori in the development of early Irish enamelling, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO, 49-57.

–––– 2001. Glass bangles as a regional development in early medieval Ireland, in *Pattern and purpose in insular art*, eds. M. Redknap, N. Edwards, S. Young, A. Lane & J. Knight Oxford: Oxbow, 101–14.

Carter, S. 2007. Environmental archaeology: two examples from the N25 Waterford City Bypass and the N7 Limerick Southern Ring Road, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 47–60.

Case, H. J., G. W. Dimbleby, G. F. Mitchell, M. E. S. Morrison & V. B. Proudfoot 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).

Caseldine, C., B. Gearey, J. Hatton, E. Reilly, I. Stuijts & W. Casparie 2001. From the wet to the dry: palaeoecological studies at Derryville, co. Tipperary, Ireland, in *Recent developments in wetland research : proceedings of a conference held by the Department of Archaeology, University College Dublin and the Wetland Archaeology Research Project (WARP) 26th-29th August 1998*, eds. B. Raftery & J. Hickey University College Dublin: Department of Archaeology.

Casey, C. & A. Rowan 1993. *North Leinster (The Buildings of Ireland),* Harmondsworth: Penguin.

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 Dunbel Big. *Archaeology Ireland,* 5(2), 18–20.

Caulfield, S. 1969. Some quernstones in private possession in Co. Kerry. *Journal of the Kerry Archaeological and Historical Society,* 2, 59–73.

Cavers, G. 2006. Late Bronze Age and Iron Age settlement in Scotland and Ireland: The Development of the Crannóg in the North and West. . *Oxford Journal of Archaeology,* 25(4), 389–412.

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, 176–7.

–––– 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. 1970. *Irish ecclesiastical architecture: with some notice of similar or related work in England, Scotland and elsewhere (edited by Liam de Paor),* Shannon: Irish University Press.

Channing, J. 2007. Politics, wealth and expansion: the archaeology of a multiperiod enclosure at Rochfort Demesne, Co. Westmeath, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 111–21.

Channing, J. & P. Randolph-Quinney 2006. Death, decay and reconstruction: the archaeology of Ballykilmore cemetery, County Westmeath, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 115–28.

Charles-Edwards, G. 2002. The East Cross inscription from Toureen Pecaun: letterform analysis and a suggested reading. *Journal of the Royal Society of Antiquaries of Ireland,* 132, 114–26.

–––– 2002. The Springmount Bog tablets. *Studia Celtica,* 36, 27–45.

–––– 2003. The East Cross inscription from Toureen Peacaun: letterform analysis and a suggested reading. *Archaeology Ireland,* 17(1), 13–5.

Charles-Edwards, T. M. 1976. Boundaries in Irish Law. , in *Medieval settlement: Continuity and Change*, ed. P. H. Sawyer University of Leeds 1974: London : Edward Arnold, 83–7.

–––– 1976. The social background to Irish peregrinatio *Celtica,* 11, 43–59

–––– 1978. Honour and Status. *Ériu,* 29.

–––– 1986. Críth Gablach and the law of status. *Peritia,* 5.

–––– 1992. The pastoral role of the church in the early Irish laws, in *Pastoral Care before the Parish*, eds. J. Blair & R. Sharpe Leicester: Leicester University Press, 63–80.

–––– 1993. *Early Irish and Welsh Kinship,* Oxford: Clarendon Press.

–––– 1994. A contract between king and people in early medieval Ireland: Críth Gablach on kingship. *Peritia,* 8, 107–19.

–––– 1999. Geis, prophecy, omen, and oath. *Celtica,* 23, 38–59

–––– 2000. *Early Christian Ireland,* Cambridge: Cambridge University Press.

–––– 2004. 'Early Irish saints' cults and their constituencies'. *Ériu,* 54, 79–102.

–––– 2005. Early Irish Law, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 331–70.

Cherry, J. 1981. Medieval rings, in *The ring from antiquity to the twentieth century*, ed. A. Ward London: Electrum Gallery, 53–9.

Childe, V. G. 1936. A Promontory fort on the Antrim Coast. *Antiquities Journal,* 16, 179–98.

Christensen, A. 1988. Ship Graffati and models, in *Miscellanea 1*, ed. P. F. Wallace Dublin: Royal Irish Academy, 13–26.

Clancy, T. O. 2006. Adomnaín and the abbacy of Clonmacnois: historical needs, literary narratives. *Innes Review,* 57(2), 206–15.

Clark, J. 1968. St. Austin's Well Newbridge. *Journal of the Kildare Archaeological and Historical Society,* 14(3), 341.

Clarke, H. 1977. The topographical development of Early Medieval Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 107, 29–51.

–––– 1990. *Medieval Dublin: the Making of a Metropolis,* Dublin: Blackrock Publishing.

–––– 1991. The Bloodied Eagle: the Vikings and the early development of Dublin. *Irish Sword,* 18, 91–119.

–––– 1995. The Vikings in Ireland: A Historians Perspective. *Archaeology Ireland,* 9(3), 7–9.

–––– 1998. Proto-towns and towns in Ireland and Britain in the ninth and tenth centuries, in *Ireland and Scandinavia in the early Viking age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press.

Clarke, H. & B. Ambrosiani 1995. *Towns in the Viking Age,* Leicester: Leicester University Press.

Clarke, H. & M. Brennan (eds.), 1981. *Columbanus and Merovingian monasticism* Oxford: Oxford University Press.

Clarke, H., S. Dent & R. Johnson 2002. *Dublinia: the story of medieval Dublin,* Dublin: O'Brien Press.

Clarke, H., M. Ní Mhaonaigh & R. Ó Floinn (eds.), 1998. *Ireland and Scandinavia in the Early Viking Age,* Dublin: Four Courts Press.

Clarke, H. & J. R. S. Philips (eds.), 2006. *Ireland, England and the continent in the middles ages and beyond: Essays in memory of a turbulent friar, F.X. Martin, O.S.A.,* Dublin: University College Dublin Press.

Clarke, J. P. 1963. Souterrain at Crossabeagh, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 15(3), 255–61.

–––– 1964. Some antiquities of Urney Graveyard, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 15(4), 349–50.

Clarke, L. 2002. An early medieval enclosure and burials, Johnstown, Co. Meath. *Archaeology Ireland,* 16(4), 13–5.

Clarke, L. & N. Carlin 2006. Life and death in Ardsallagh. *Seanda: National Roads Authority Magazine,* 1, 16–8.

–––– 2006. Life and death in County Meath. *Archaeology Ireland,* 20(4), 22–5.

Clarke, M. 1944. The Black Castle, Wicklow. *Journal of the Royal Society of Antiquaries of Ireland,* 74, 1–22.

Clarke, R. S. J. 1971. Four cross-slabs in County Down graveyards *Ulster Journal of Archaeology,* 34, 108–9.

Clayton, B. 1973–1974. Palaeoecological investigations at Crossnacreevy, Co. Down *Ulster Journal of Archaeology,* 36–37, 42–51

Clayton, M. 1994. Centralism and uniformity or localism and diversity: the Virgin and native saints in the English monastic reform. *Peritia,* 8, 95–106.

Cleary, R. M. 1985. Archaeological investigation of a ringfort at Ballyduff, Co. Limerick. *North Munster Antiquarian Journal,* 27, 3–7.

–––– 1987. Archaeological investigation of a ringfort at Ballyduff, Co. Limerick. *North Munster Antiquarian Journal,* 27, 3–7.

–––– 1992. Cross-inscribed slab from Bilboa, Co. Limerick. *Tipperary Historical Journal,* 5, 202–5.

–––– 2006. Excavations of an Early-Medieval period enclosure at Ballynagallagh, Lough Gur, Co. Limerick. *Proceedings of the Royal Irish Academy Section C,* 106, 1–66.

Cleary, R. M. & M. F. Hurley (eds.), 2003. *Cork City excavations, 1984-2000* Cork: Cork City Council.

Cleary, R. M., M. F. Hurley & E. S. Twohig 1987. *Archaeological excavations on the Cork - Dublin pipeline* Cork: University College Cork. Department of Archaeology.

–––– (eds.), 1997. *Skiddy's Castle and Christ Church, Cork : excavations 1974-77 by D.C. Twohig* Cork: Cork Corporation.

Clinton, M. 1982. Monotoring of bore-holes at Bridge Street Upper, Dublin (unpublished), Dublin: Dúchas.

–––– 1993. Souterrain at Loughcrew, near Oldcastle, County Meath. *Journal of the Royal Society of Antiquaries of Ireland,* 123, 120–6.

–––– 1996. Two recently discovered souterrains in County Meath. *Ríocht na Mídhe,* 9(2), 30–6.

–––– 1997. Porthole slabs in souterrains in Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 127, 5–17.

–––– 1998. The souterrains of County Dublin, in *Dublin and beyond the Pale: studies in honour of Patrick Healy*, ed. C. Manning Bray: Bray, Co. Wicklow : Wordwell in association with Rathmichael Historical Society.

–––– 2000. A second souterrain in the townland of Newrath Big, County Meath. *Ríocht na Mídhe,* 11(1), 51–7

–––– 2000. Settlement patterns in the early historic kingdom of Leinster (seventh-mid twelfth centuries), in *Seanchas: Studies in Early and Medieval Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Four Courts Press, 275–98.

–––– 2001. *The souterrains of Ireland,* Bray: Wordwell.

Clinton, M. & M. Stout 1997. Two souterrains and an enclosure at Killally, County Louth. *Journal of the Louth*

Archaeological and Historical Society, 24(1), 129–34.

Clohosey, T. J. 1960. St. Canice of Aghaboe and Kilkenny. *Old Kilkenny Review,* 12, 16–20.

Clyne, M. 1992. Excavations at Rosshill Abbey, County Galway. *Journal of the Galway Archaeological and Historical Society,* 44, 195-207.

–––– 1998–1999. Interim report on the archaeological excavations at Moone Abbey, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 18(4), 473–92.

Coleman, J. C. 1941-1942. Cave Excavation at Midleton, Co. Cork *Journal of the Cork Historical and Archaeological Society,* 47, 63-76.

–––– 1945. Souterrain near Bealnamorrive, Co. Cork (note). *Journal of the Royal Society of Antiquaries of Ireland,* 75, 112–4.

–––– 1947. Irish Cave Excavations. *Journal of the Royal Society of Antiquaries of Ireland,* 77, 63–80.

Coleman, S. & J. Elsner 1995. *Pilgrimage past and present in the world religions,* London: British Museum Press.

Coles, B. & J. Coles 1989. *People of the wetlands- Bogs, Bodies and Lake dwellers: A world Survey,* London: Thames & Hudson.

Colfer, B. 1988. Wexford. *Archaeology Ireland,* 1(2), 8–11.

Colhoun, M. R. 1946. Souterrain at Ballylin, Malin, Co. Donegal *Ulster Journal of Archaeology,* 9, 84–6

–––– 1970. Donegal carved stones (note). *Journal of the Royal Society of Antiquaries of Ireland,* 100, 223–5.

Colhoun, M. R. & B. Lacy 1979. A socketed bronze axehead from a ringfort at Ballynabwee, County Tyrone (note). *Journal of the Royal Society of Antiquaries of Ireland,* 109, 152–3.

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

–––– 1959. Further investigations in the Dundrum sandhills. *Ulster Journal of Archaeology,* 22, 5–20.

–––– 1959. A rath group at Craigaphuile, Co Down *Ulster Journal of Archaeology,* 22, 88–92

–––– 1960. Finds from a rath in Glencull Townland, Aughacloy, Co Tyrone *Ulster Journal of Archaeology,* 23, 78–80

–––– 1960. A souterrain at Tobergill, Co Antrim *Ulster Journal of Archaeology,* 23, 80–1.

–––– 1961–1962. An Earthwork at Craigboy, Co Down. *Ulster Journal of Archaeology,* 24–25, 116–8.

–––– 1962. An earthwork at Craigboy, Co. Down. *Ulster Journal of Archaeology,* 24–5, 116–8.

–––– 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

–––– 1968. Settlement in Ulster, 0–1100 A.D. *Ulster Journal of Archaeology,* 31, 53–8.

–––– 1976. Three souterrains in County Antrim *Ulster Journal of Archaeology,* 39, 13–4.

Collins, A. E. P., B. K. Davison & W. S. Wright 1964. Recent Investigations of Souterrains *Ulster Journal of Archaeology,* 27, 121–32.

Collins, A. E. P. & V. B. Proudfoot 1959. A trial excavation in Clea Lakes crannog, Co Down *Ulster Journal of Archaeology,* 22, 92–101

Collins, A. E. P. & W. A. Seaby 1960. Structures and small finds discovered at Lough Eskragh, Co Tyrone *Ulster Journal of Archaeology,* 23, 25–37

Collins, B. 1988. Environmental Archaeological Remains from Dublin Castle. *Archaeology Ireland,* 2(4), 150–2.

Collins, T. 2007. *Killone nunnery, Co. Clare,* Bray: Wordwell.

Columb, F. 1978. Inchmore, Lough Gowna. *Teathbha,* 1(4), 282–6.

Comber, M. 1997. Non-ferrous metalworking in early historic Ireland and its reflection of the contemporary social position of Lagore crannog, co. Meath. *Journal of Irish Archaeology,* 8, 101–14.

–––– 2001. Trade and communication networks in early historic Ireland. *Journal of Irish Archaeology,* 10.

–––– 2002. M.V. Duignan's excavations at the ringfort of Rathgurreen, Co. Galway 1948-9. *Proceedings of the Royal Irish Academy Section C,* 102 Section C, 137–97.

Comber, M. 2008. *Economy of Early Medieval Settlement, Ireland.* BAR International Series.1773

Conant, K. J. 1973. *Carolingian and Romanesque architecture, 800 to 1200* Harmondsworth: Penguin.

Condit, T. 2000. North-east Clare: an eroding archaeological cameo. *Archaeology Ireland,* 14(3), 24–9.

Condit, T. & V. M. Buckley 2007. *Faughart, Co. Louth: the hill of heroes, saints, battles and boundaries* Bray: Wordwell.

Condit, T. & G. Cooney 2001. *Dalkey Island- an island on the tides of time,* Bray: Wordwell.

Condit, T. & F. Moore 2003. *Oweynagat- the cave of Cruachain,* Bray: Wordwell.

Condit, T. & A. O'Sullivan 1998. *Magh Adhair: a ritual and inauguration complex in south-east Clare,* Bray: Wordwell.

Condon, T. E. 1973. Souterrain at Ballymascanlon (Note by D. McÍ). *Journal of the Louth Archaeological and Historical Society,* 18(1), 84–5.

Condren, M. 1989. *The Serpent and the Goddess: Women, Religion and Power in Celtic Ireland,* San Francisco: Harper and Row.

Cone, P. (ed.) 1977. *Treasures of early Irish art, 1500 B.C. to 1500 A.D. : from the collections of the National Museum of Ireland, Royal Irish Academy, Trinity College, Dublin,* New York: Metropolitan Museum of Art.

Conlon, L. 1999. The holy wells of County Louth. *Journal of the Louth Archaeological and Historical Society,* 24(3), 329–56.

`

–––– 2000. The holy wells of County Louth, (continued). *Journal of the Louth Archaeological and Historical Society,* 24(4), 453–73.

Connellan, M. 1944–1945. St. Muadhnat of Kill Muadhnat. *Journal of the Galway Archaeological and Historical Society,* 21(1 & 2), 56–62.

–––– 1948–1949. St. Brocaidh of Imliuch Brocadha. *Journal of the Galway Archaeological and Historical Society,* 23(3 & 4), 138–46.

–––– 1952–1953. Where on Cruachain was Seandomnagh Maighe Ai? . *Journal of the Galway Archaeological and Historical Society,* 25(3 & 4), 78–80.

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.

–––– 1992. A souterrain at Beaufort. *Journal of the Kerry Archaeological and Historical Society,* 25, 20–38.

–––– 2001. Archaeological test excavations on an earth-cut souterrain at Gortatlea, Co. Kerry, Kerry: Kerry County Council Archaeological Reports.

Connolly, M. & F. Coyne 2000. The underworld of the Lee Valley. *Archaeology Ireland,* 14(2), 8–12.

Connors, P. 1998. Some raised ringforts/earthworks/trackways west of the Fergus estuary. *The Other Clare,* 22, 47–8.

Conway, M. 1999. Director's first findings from excavations at Cabinteely, Dublin, in *Margaret Gowen and Company Transactions 1* Dublin: Margaret Gowen and Company.

Conway, M. & M. K. McGurl 1956. Hon. Secretary's Report [mentions new crannog and dugouts] *Ríocht na Mídhe,* 1(2), 66–71.

Cooney, B. 1992. Excavation Round-up. *Archaeology Ireland,* 6(4), 7.

Cooney, G. 1990. Dublin's Islands. *Archaeology Ireland,* 4(4), 7–9.

–––– 1993. Lambay: An island on the horizon. *Archaeology Ireland,* 7(4), 24–8.

–––– 2000. Genes and Irish origins. *Archaeology Ireland,* 14(2), 29.

–––– 2001. Is it all in the genes? *Archaeology Ireland,* 15(1), 34–5.

Coope, G. R. (ed.) 1981. *Report on the coleopetra from an eleventh century house at Christchurch Place, Dublin,* Odense: Odense University Press.

Cordner, W. S. 1940. Some old wells in Antrim and Down *Ulster Journal of Archaeology,* 3, 156–61

–––– 1942. Some old wells in antrim and Down II *Ulster Journal of Archaeology,* 5, 90–5

–––– 1946. The Cult of the Holy Well *Ulster Journal of Archaeology,* 9, 24–36

Corlett, C. 1993. Previously unrecorded cross-slab from Feenune in the Barony of Murrisk, County Mayo (note). *Journal of the Royal Society of Antiquaries of Ireland,* 123, 169–70.

–––– 1996. The pagan/Christian transition in Ireland reflected in the burial record. *Trowel,* 7, 31–7.

–––– 1996. Prehistoric pilgrimage to Croagh Patrick. *Cathair Na Mart,* 16, 54–61.

–––– 1997. An Early Christian ecclesiastical Site at Carrowrevagh, near Carrowkennedy, County Mayo. *Cathair Na Mart,* 17, 115–20.

–––– 1998. Interpretation of Round Towers: public appeal or professional opinion. *Archaeology Ireland,* 12(2), 24–7.

–––– 1998. Recent stray finds from county Wicklow. *Wicklow Archaeology and History,* 1, 64–6.

–––– 1998. Two previously unpublished cross slabs from Taghshinny, County Longford (note). *Journal of the Royal Society of Antiquaries of Ireland,* 128, 115–8.

–––– 1999. *Antiquities of Old Rathdown: The Archaeology of South County Dublin and north County Wicklow,* Bray: Wordwell.

–––– 1999. Castledermot Hogback. *Archaeology Ireland,* 13(4), 11.

–––– 1999. Holed Stone at Castledermot, Co. Kildare. *Archaeology Ireland,* 13(1), 12.

–––– 2000. Gallen Cross-slabs. *Archaeology Ireland,* 14(1), 15.

–––– 2000. Megalithic Altars. *Archaeology Ireland,* 14(2), 13.

–––– 2001. Prehistoric life in the fast lane. *Archaeology Ireland,* 15(1), 4.

–––– 2002. Two recently discovered Rathdown Slabs from Taney Graveyard, Dundrum, County Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 132, 139–43.

–––– 2003. The Hollywood Slabs: some late medieval grave slabs from west Wicklow and neighbouring Counties. *Journal of the Royal Society of Antiquaries of Ireland,* 133, 86–110.

–––– 2003. The Rathdown Slabs- Viking and Christianity. *Archaeology Ireland,* 17(4), 28–30.

–––– 2005. Recent discoveries in Dun Laoghaire-Rathdown. *Archaeology Ireland,* 19(2), 5.

–––– 2005. Two recently discovered crosses from Co. Wicklow. *Journal of the Royal Society of Antiquaries of Ireland,* 135, 140–4.

Corlett, C. & D. McGuinness 1994. An unrecorded cross-slab from Kiltiernan, County Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 124, 217–8.

Corlett, C. & B. Shanahan 1998. Evidence for a horizontal mill on the River Dee, near Nobber, Co. Meath. *Ríocht na Midhe,* 9(4), 20–7.

Corthals, J. 1995. Affiliation of children: Immathchor nAilella 7 Airt. *Peritia,* 9, 92–124

Costello, C. 1972. Castledermot hogback [note]. *Journal of the Kildare Archaeological and Historical Society,* 15(2), 140.

Cotter, C. 1986–1987. Excavations at the site of MacMurrough Castle, near New Ross, Co. Wexford. *Journal of the*

Wexford Historical Society, 11, 33–49.

–––– 1993. Western Stone Fort Project: Interim report, in *Discovery Programme Reports 2: Project results 1993* Dublin: Dublin: Royal Irish Academy, 1–11.

–––– 1994. Atlantic fortifications: The Dúns of the Aran Islands. *Archaeology Ireland,* 8(1), 24–8.

–––– 1994. Western Stone Fort Project: Interim report, in *Discovery Programme Reports 4: Project results and reports 1994* Dublin: Dublin: Royal Irish Academy.

–––– 1995. Archaeological excavations at Skeam West. *Mizen Journal,* 3, 71-9.

–––– 1995. The Western Stone Fort Project. *The Other Clare,* 19, 10–3.

–––– 1999. Western Stone Forts Project: Cahercommaun Fort, Co. Clare - a reassessment of its cultural context, in *Discovery Programme Reports 5* Dublin: Dublin: Royal Irish Academy.

Coughlan, T. 2003. Excavations at the medieval cemetery of St. Peter's church, Dublin, in *Medieval Dublin IV : proceedings of the Friends of Medieval Dublin Symposium 2002* ed. S. Duffy Trinity College Dublin: Four Courts Press, 11–39.

–––– 2007. The enigma of Cappydonnell Big. *Seanda: National Roads Authority Magazine,* 2, 16–7.

Courtney, L. 2006. Archaeological aerial survey: a bird's eye view of the M7/M8 in county Laois, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 103–4.

Cox, L. 1972. The O Maelseachlainn Kings of Meath. *Ríocht na Midhe,* 5(2), 22–53.

Coyle, M. 1954. St. Brigid's Well, Dunleer. *Journal of the Louth Archaeological and Historical Society,* 13(2), 175–8.

Coyle, T. 1969. Inistioge district. *Old Kilkenny Review,* 21, 17–31.

Coyne, F. 2000. *The Paps of Anu: two sacred mountains in County Kerry* Bray: Wordwell.

–––– 2006. Excavation of an early medieval 'plectrum-shaped' enclosure at Newtown, Co. Limerick, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell.

–––– 2006. *Islands in the clouds: an upland archaeological study on Mount Brandon and The Paps, County Kerry (Contributions by Tracy Collins),* Tralee: Kerry County Council in association with Aegis Archaeology Limited.

Coyne, F. & T. Collins 2003. Plectrum shaped enclosures-a new site type at Newtown, Co. Limerick. *Archaeology Ireland,* 17(4), 17–9.

–––– 2005. *Mount Brandon, Co. Kerry: Dingle's holy mountain* Bray: Wordwell.

Craig, M. 1982. *The architecture of Ireland from the earliest times to 1800,* London: Batsford.

Cramp, R. 1967. *Anglian and Viking York.,* York: York : St. Anthony's P, 1967.

–––– (ed.) 1984. *Corpus of Anglo-Saxon stone sculpture. Vol.1, County Durham and Northumberland* London: Oxford: Published for the British Academy by the Oxford University Press.

–––– 1986. Northumbria and Ireland, in *Sources of Anglo-Saxon culture*, eds. P. Szarmach & V. D. Oggins Kalamazoo: Medieval Institute Publications, Western Michigan University, 185–201.

–––– (ed.) 2006. *Corpus of Anglo-Saxon Stone Sculpture, Volume VII: South-West England* Oxford: Oxford University Press.

Cramp, R. & R. Bailey, N (eds.), 1988. *Corpus of Anglo-Saxon stone sculpture. Vol.2, Cumberland, Westmorland and Lancashire North-of-the-Sands,* London: Oxford: Published for the British Academy by the Oxford University Press.

Crawford, B. E. 1987. *Scandinavian Scotland,* Leicester: Leicester University Press.

Crawford, H. (ed.) 1979. *Subterranean Britain: Aspects of Underground Archaeology,* New York: St. Martin's Press.

Crawford, H. S. 1980. *Irish carved ornament: from monuments of the Christian period* Dublin: Mercier Press.

Crilly, A. 1976. Some Drogheda wells. *Journal of the Old Drogeda Society,* 1.

Crone, A. & E. Campbell 2005. *A crannog of the First Millennium AD: excavations by Jack Scott at Loch Glashan, Argyll, 1960* Edinburgh: Society of Antiquaries of Scotland.

Cronin, R. 1998. Late High Crosses in Munster: traditions and novelty in twelfth-century Irish art, in *Early medieval Munster: archaeology, history, and society* eds. M. A. Monk & J. Sheehan Cork: Cork University Press, 138-46.

Cross, R. E. 1953. Lough Gara: A preliminary survey. *Journal of the Royal Society of Antiquaries of Ireland,* 83, 93–6.

Crothers, N. 1997. A rediscovered Souterrain at Mallusk old Graveyard, Co. Antrim. *Archaeology Ireland,* 11(1), 34–5.

–––– 1999. Excavations in Upper English Street, Armagh *Ulster Journal of Archaeology,* 58, 55–80.

–––– 2000. Further excavations at Nendrum. *Archaeology Ireland,* 14(3), 4.

–––– 2000. Rescue excavations at Templecorran, Ballycarry, County Antrim *Ulster Journal of Archaeology,* 59, 29–46.

Crotty, G. 1988. A Romanesque fresco in Cormac's Chapel. *Tipperary Historical Journal,* 155-8.

Crozier, I. & L. D. Lowry-Corry 1938. Some Christian cross-slabs in Co. Donegal and Co. Antrim. *Journal of the Royal Society of Antiquaries of Ireland,* 68, 219–25.

Crozier, I. R. & L. C. Rea 1940. Bullauns and other basin-stones *Ulster Journal of Archaeology,* 3, 104–14

Crumlish, R. 1992. Archaeological monitoring of the Dingle Sewerage Scheme, Dingle, Co. Kerry. *Journal of the Kerry Archaeological and Historical Society,* 25, 37–50.

–––– 1993. The archaeology of Tory Island. *Archaeology Ireland,* 7(1), 22–5.

–––– 1993. Tullaghobegley Church and Graveyard excavation report. *Donegal Annual,* 45, 42–51.

Culleton, E. 1999. *Celtic and early Christian Wexford, AD 400-1166,* Dublin: Four Courts Press.

Culleton, E. B. 1992–1993. The rise and fall of Norse Wexford. *Journal of the Wexford Historical Society,* 14, 151–9.

–––– 2000–2001. Where was the first Viking settlement in Wexford harbour? (letter to the Editor). *Journal of the Wexford Historical Society,* 18, 145–6.

Culleton, E. B. & G. F. Mitchell 1976. Soil erosion following deforestation in the early christian period in south Wexford. *Journal of the Royal Society of Antiquaries of Ireland,* 106, 120–3.

Cunningham, J. 1994. Old graveyards and irregular burials near Pettigo. *Donegal Annual,* 46, 87–90.

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.

D'Evelyn, A. M. 1933. A sandhill settlement, Maghera, Co. Donegal. *Journal of the Royal Society of Antiquaries of Ireland,* 63, 88–100.

Daly, C. 2005. Garnets and Gold: the technical examination of a medievla ring-brooch. *Archaeology Ireland,* 19(3), 36–9.

Daly, C. B. 1973. St. Mel's crozier. *Teathbha,* 1(3), 186–8.

Daniells, M. J. & B. B. Williams 1977. Excavations at Kiltierney Deerpark, County Fermanagh *Ulster Journal of Archaeology,* 40, 32–41

D'Arcy, S. A. 1930. "Holed"-Stone at Cushendall, Co. Antrim (note). *Journal of the Royal Society of Antiquaries of Ireland,* 60, 192–3.

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.

D'Aughton, M. 2004. The Kells Market Cross: the Epiphany sequence reconsidered. *Archaeology Ireland,* 18(1), 16–7.

Davey, P. J. & J. A. Rutter 1977. A note on continental imports in the North-west, 800-1700 A.D. . *Medieval Ceramics,* 1, 17–30.

Davidson, R. C. 1958. Some Crosses in Co Down *Ulster Journal of Archaeology,* 21, 89–90

–––– 1971. Medieval Stone Carvings from Saul and Downpatrick *Ulster Journal of Archaeology,* 34, 109–10

Davies, M. 1990. Charting the development of the Irish Town. *Archaeology Ireland,* 4(4), 23–5.

Davies, O. 1938. Clogher crosses and other carved stones *Ulster Journal of Archaeology,* 1.

–––– 1938. Excavations at Sallagh Fort. *Proceedings of the Belfast Natural History & Philosophical Society,* 1, 27–33.

–––– 1938. Killeavy churches. *Journal of the Louth Archaeological and Historical Society,* 9(2), 77–86.

–––– 1938. Sessiaghmagaroll Fort *Ulster Journal of Archaeology,* 1, 42–4

–––– 1939. Dungiven Priory *Ulster Journal of Archaeology,* 2, 271–87

–––– 1939. Excavations at Lissachiggel. *Journal of the Louth Archaeological and Historical Society,* 9(3), 209–43.

–––– 1939. Killinagh Church & Crom Cruaich *Ulster Journal of Archaeology,* 2, 98–102

–––– 1939. White Island church door (note). *Journal of the Royal Society of Antiquaries of Ireland,* 69, 112–5.

–––– 1940. Excavations at Corliss fort. *Journal of Louth Archaeological and Historical Society,* 9(4), 338–43.

–––– 1940. Excavations at Lissachiggel. *Journal of Louth Archaeological and Historical Society,* 9(3), 209–43.

–––– 1940-1941. Trial excavations at Lough Enagh *Ulster Journal of Archaeology,* 4, 88-101

–––– 1941. Ballynascreen church and legends *Ulster Journal of Archaeology,* 4, 57–62.

–––– 1941. Drakestown graveyard, Co. Meath (note). *Journal of the Royal Society of Antiquaries of Ireland,* 71, 64–6.

–––– 1941. Old Churches in County Louth. *Journal of the Louth Archaeological and Historical Society,* 10(1), 5–23.

–––– 1941. Survey of ancient monuments, additions and corrections *Ulster Journal of Archaeology,* 4, 35–44

–––– 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.

–––– 1942. Old churches in County Louth (continued). *Journal of the Louth Archaeological and Historical Society,* 10(2), 101–7.

–––– 1943. Church architecture in Ulster *Ulster Journal of Archaeology,* 6, 61–8

–––– 1943. Old churches in County Louth (continued). *Journal of the Louth Archaeological and Historical Society,* 10(3), 200–12.

–––– 1944. Church Architecture in Ulster (Concluded). *Ulster Journal of Archaeology,* 7, 53–61

–––– 1944. Old churches in County Louth (continued). *Journal of the Louth Archaeological and Historical Society,* 10(4), 277–96.

–––– 1945. Movilla Abbey. *Ulster Journal of Archaeology,* 8.

–––– 1945. Old churches in County Louth. *Journal of the Louth Archaeological and Historical Society,* 11(1), 21–7.

–––– 1946. Bangor Abbey, Co. Down. *Ulster Journal of Archaeology,* 9, 100–4.

–––– 1946. Excavation of a crannog at Deredis Upper, in Lough Inchin, Co. Cavan. *Journal of the Royal Society of Antiquaries of Ireland,* 76, 19-34.

–––– 1946. Excavations around Lough Eske, Co Donegal *Ulster Journal of Archaeology,* 9, 91–9.

–––– 1946. Old churches in the parish of Rossinver, Co Leitrim *Ulster Journal of Archaeology,* 9, 76–9.

–––– 1946. Trial excavations at a mound on the shore of Lough Atrain, Co. Cavan. *Journal of the Royal Society of Antiquaries of Ireland,* 76, 32-4.

–––– 1947. Types of Raths in southern Ulster *Ulster Journal of Archaeology,* 10, 1–14.

–––– 1948. The churches of County Cavan. *Journal of the Royal Society of Antiquaries of Ireland,* 78, 73–118.

–––– 1949. Early Irish stone building. *Journal of the Louth Archaeological and Historical Society,* 12(1), 11–2.

–––– 1949. Early Irish Stone Buildings, County Louth *Ulster Journal of Archaeology,* 12, 11–2.

–––– 1950. *Excavations at Island MacHugh* Belfast: Belfast Natural History and Philosophical Society.

–––– 1976. Ring-forts and mottes *Ulster Journal of Archaeology,* 39, 72–3.

–––– 1996. *Celtic Christianity in early medieval Wales: the origins of the Welsh spiritual tradition* Cardiff: University of Wales Press.

Davies, O. & T. G. F. Paterson 1940. The Head of Saint Patrick at Armagh *Ulster Journal of Archaeology,* 3, 68.

Davies, W. 1982. *Wales in the early Middle Ages* Leicester: Leicester University Press.

–––– 1983. Celtic women in the early middle ages, in *Images of Women in Antiquity*, eds. A. Cameron & A. Kuhrt London: Croom Helm, 323.

–––– 1989. The Place of Healing in Early Irish Society, in *Sages, Saints and Storytellers: Celtic studies in honour of Professor James Carney* eds. D. Ó Corráin, L. Breatnach & K. McCone Maynooth: An Sagart, 472.

–––– 1992. The Myth of the Celtic Church, in *The Early Church in Wales and the West: recent work in early Christian archaeology, history and place-names (Oxbow Monograph 16)*, eds. N. Edwards & A. Lane Oxford: Oxbow.

–––– 1993. Celtic Kingships in the Early Middle Ages, in *Kings and Kingship in Medieval Europe*, ed. A. J. Duggan London: King's College London, Centre for Late Antique and Medieval Studies, 1–24.

–––– 1996. On servile status in the early middle ages, in *Serfdom and Slavery: Studies in Legal Bondage*, ed. M. L. Bush London: Longman Publishers, 225–46.

–––– 1996. "Protected space" in Britain and Ireland, in *Scotland in Dark-Age Britain*, ed. B. E. Crawford Aberdeen: Scottish Cultural Press, 1–19.

–––– (ed.) 2003. *From the Vikings to the Normans* Oxford: Oxford University Press.

Davison, B. K. 1961–1962. Excavations at Ballynarry Rath, Co Down *Ulster Journal of Archaeology,* 24–25, 39–87.

de Brún, P. 1974. Miscellanea: 4. Ardfert in 1827. *Journal of the Kerry Archaeological and Historical Society,* 7, 148–9.

de Courcy, J. & T. O'Neill 1987. *Merchants and mariners in medieval Ireland,* Dublin: Irish Academic Press.

de Courcy, S. 1995. Looking at the Liffey in 795. *Archaeology Ireland,* 9(3), 16–8.

de h-Óir, S. 1983. The Mount Callan ogham stone and its context. *North Munster Antiquarian Journal,* 25, 43–57

–––– 1984. The Mount Callan ogham stone—a footnote (note). *North Munster Antiquarian Journal,* 26, 99.

–––– 1987. Three sketches of Donegal Antiquities. *Journal of the Royal Society of Antiquaries of Ireland,* 117, 146–50.

de Paor, L. 1954–1956. The limestone crosses of Clare and Aran. *Journal of the Galway Archaeological and Historical Society,* 26(3 & 4), 53–71.

–––– 1955. A survey of Sceilg Mhichíl. *Journal of the Royal Society of Antiquaries of Ireland,* 85, 174–87.

–––– 1961. Irish belt-buckles and strap-mounts, in *Bericht uber den V. internationalen Kongress fur vor- und Fruhgeschichte, Hamburg, 1958*, ed. G. Bersu Berlin, 649-53.

–––– 1962. Antiquities of the Viking Period from Inchbofin, Co. Westmeath. *Journal of the Royal Society of Antiquaries of Ireland,* 92, 187–91.

–––– 1967. Cormac's Chapel: the beginning of Irish Romanesque, in *North Munster Studies: essays in commemoration of Monsignor Michael Moloney*, ed. E. Rynne Limerick.

De Paor, L. 1969. Excavations at Mellifont Abbey, Co. Louth. *Journal of the Roscommon Historical and Archaeological Society,* 68, 109-64.

de Paor, L. (ed.) 1976. *The Viking towns of Ireland* London: Viking Society for Northern Research.

–––– 1980. The Derrynaflan hoard. *Art about Ireland,* June–July 1980, 8–12.

–––– 1987. The High Crosses of Tech Theille (Tihilly), Kinitty and Related Sculpture, in *Figures from the Past: studies on figurative art in Christian Ireland : in honour of Helen M. Roe* ed. E. Rynne Dun Laoghaire Glendale Press for the Royal Society of Antiquaries of Ireland.

–––– 1996. The history of the monastic site of Inis Cealtra, Co. Clare. *North Munster Antiquarian Journal,* 32, 21–32.

–––– 1996. *Saint Patrick's world: the Christian culture of Ireland's apostolic age* Dublin: Four Courts Press.

–––– 1997. *Inis Cealtra: report on archaeological and other investigations of the monuments on the island,* Dublin.

–––– 1997. *Ireland and early Europe,* Dublin: Four Courts Press.

–––– 1998. A grave-slab associated with the high cross at Durrow, in *Dublin and beyond the Pale: studies in honour of Patrick Healy*, ed. C. Manning Dublin: Wordwell in association with Rathmichael Historical Society.

de Paor, L. & D. Glenn 1995. St. Caimin's, Inis Cealtra: reconstruction of the doorway. *North Munster Antiquarian Journal,* 36, 87–103.

de Paor, L. & M. Ó hEochaidhe 1956. Unusual group of earthworks at Slieve Breagh. Co. Meath. *Journal of the*

Royal Society of Antiquaries of Ireland, 86, 97–101.

de Paor, M. i. 1958. *Early Christian Ireland,* London: Thames and Hudson.

–––– 1967. *Early Christian Ireland,* London: Thames and Hudson.

–––– 1979. *Early Irish art* Dublin: Department of Foreign Affairs, Ireland.

–––– 1998. *Patrick the pilgrim apostle of Ireland : St Patrick's "Confessio" and "Epistola"* Dublin: Veritas.

–––– 2001. *Saint Moling Luachra: a pilgrimage from Sliabh Luachra to Rinn Ros Broic above the stream-pools of the Barrow : Geinemain Molling ocus a bhetae (the birth and life of St. Moling),* Dublin: Columba Press.

–––– 2001. *Saint Moling Luachra: a pilgrimage from Sliabh Luachra to Rinn Ros Broic above the stream-pools of the Barrow : Geinemain Molling ocus a bhetae (the birth and life of St. Moling),* Dublin: Columba Press.

de Paor, M. i. & L. De Paor 1978. *Early Christian Ireland,* London: Thames & Hudson.

de Pontfarcy, Y. 1988. A note on two dates given for the foundation of Baltinglass (note). *Journal of the Royal Society of Antiquaries of Ireland,* 118, 163–4.

de Vál, S. S. 1970. The High Crosses of Ireland. *Journal of the Louth Archaeological and Historical Society,* 3, 21–5.

de Varebeke, H. J. 1950. The Benedictines in Medieval Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 80, 92–6.

de Vegvar, C. N. 2001. In the shadow of the Sidhe. Arthur Kingsley Porter's vision of an exotic Ireland. *Irish Arts Review Yearbook,* 17, 48-60.

Deady, J. 1972. Miscellanea: 1. A souterrain at Ballysheen, Abbeydorney. *Journal of the Kerry Archaeological and Historical Society,* 5, 160–1.

Deevy, M. B. 1998. *Medieval ring-brooches in Ireland: a study of jewellery, dress and society,* Bray: Wordwell Press.

–––– 1998. The three wise men and medieval Ireland. *Archaeology Ireland,* 12(4), 30–1.

–––– 2005. The M3 Clonee to North of Kells Road Scheme, County Meath, in *Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, Spetember 2004,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 83–92.

–––– 2006. The Hidden Archaeological Landscapes of the M3. *Seanda: National Roads Authority Magazine,* 1, 10–1.

Deevy, M. B. & C. Baker 2000. Ring Brooches and finger rings from medieval Dublin, in *Medieval Dublin I : proceedings of the Friends of Medieval Dublin Symposium 1999* ed. S. Duffy Trinity College Dublin: Four Courts Press, 159–84.

Delaney, S. & N. Roycroft 2003. Early medieval enclosure at Balriggan, Co. Louth. *Archaeology Ireland,* 17(2), 16–9.

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, 57–9.

–––– 1977. A medieval French cresset lamp from Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 107, 144.

Delany, D. 2003. The Archaeological Excavation and Conservation Project at Coolbanagher, 1993-96. *Laois Heritage Society Journal,* 1, 59-70.

Delap, M. J. 1997. Some holy wells in Valencia and Portmagee [K.A.M. No. 7, October 1911, 403-414]. *Journal of the Kerry Archaeological and Historical Society,* 30, 18–22.

Dennehy, E. 2001. Children's burial-ground. *Archaeology Ireland,* 15(1), 20–3.

Desmond, S. 2006. 4,500 years in 41 kilometers: Scenes beneath the M7 and M8 Motorway Scheme. *Seanda: National Roads Authority Magazine,* 1, 28–9.

–––– 2007. Ancient Peoples, hidden landscapes: the archaeology of the M7/M8 motorway scheme, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 123–31.

De Winterfeld, P (ed.). 1899, *Poetarum Latinorum Medii Aevi. Tomi IV,* Societas Aperiendis Fontibus Rerum Germanicarum Medii Aevi, Berlin.

Di Martino, V. 2003. *Roman Ireland* Cork: Collins Press.

Dickie, K. M. 1963. Stone figure from Tomregan, Co. Cavan (note). *Journal of the Royal Society of Antiquaries of Ireland,* 93, 198–9.

Dickson, C. W. & D. M. Waterman 1959. Excavations at a rath with motte at Castlekreen, Co. Down. *Ulster Journal of Archaeology,* 22, 67–82.

Dickson, T. M. 1982. Fowler's type G penannular brooches reconsidered. *Medieval Archaeology,* 26, 41-68.

Dietler, M. & B. Hayden 2001. Digesting the feast: good to eat, good to drink, good to think, in *Feasts: archaeological and ethnographic perspectives on food, politics and power,* eds. M. Dietler & B. Hayden Washington D.C. : Smithsonian Institution Press, 1–20.

Dillon, C. & H. A. Jefferies (eds.), 2000. *Tyrone: history & society: Interdisciplinary essays on the history of an Irish County,* Dublin: Geography Publications.

Dillon, M. 1973. The consecration of Irish kings. *Celtica,* 10, 1–8

–––– 1977. The Irish settlements in Wales. *Celtica,* 12, 1–11

–––– 1994. *Early Irish literature,* Dublin: Four Courts Press.

Dillon, M., P. Johnston & M. Tierney 2007. Reading the ashes: charred plant material from two ringforts in county Galway. *Seanda: National Roads Authority Magazine,* 2, 27–9.

Dimmock, J.F. (ed.) 1867. *Giraldi Cambrensis: Opera. Vol. V,* Longmans, Green, Reader & Dyer, London.

Dobbs, M. E. 1945. The Dal Fiatach *Ulster Journal of Archaeology,* 8, 66–79.

—––– 1950. The Name Dalaraidia *Ulster Journal of Archaeology,* 13, 165.

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 basilica in early Ireland. *Peritia,* 3, 303–15

—––– 1984. The Use of Relics in Early Ireland, in *Ireland and Europe: The Early Church,* eds. P. Ní Chatháin & M. Richter Stuttgart: Klett-Cotta, 89–101.

—––– 1985. The monastic towns in early medieval Ireland, in *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,* eds. H. Clarke & A. Simms Oxford: Oxford University Press, 45–75.

—––– 1998. The Vikings in the Irish Annals; a review', in *Ireland and Scandinavia in the Early Viking Age,* eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press.

—––– 2000. Settlement in early medieval Ireland: a review, in *A history of settlement in Ireland,* ed. T. B. Barry London: Routledge, 50–80.

—––– 2001. The Viking impact upon Ireland, in *The Vikings in Ireland,* ed. A. Larsen Roskilde: The Viking Ship Museum, 29–36.

—––– 2005. Kingship in Early Ireland, in *The Kingship and Landscape of Tara,* ed. E. Bhreathnach Dublin: Dublin: Four Courts Press for the DIscovery Programme, 3–31.

Dolan, A. 1998–1999. The high cross at Moone: report on conservation work to date. *Journal of the Kildare Archaeological and Historical Society,* 18(4), 513–5.

Dolley, M. 1959. A neglected tenth-century coin-hoard from Donegal *Ulster Journal of Archaeology,* 22, 56–8.

—––– 1960. A hoard of tenth-century Anglo-Saxon coins from Glendalough. *Journal of the Royal Society of Antiquaries of Ireland,* 90, 41–7.

—––– 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.

—––– 1961–1962. The 1871 Viking-Age find of silver coins from Mullaghboden as a reflection of Westfalding intervention in Ireland. *Universites Oldsaksamling Arbok,* 49–62.

—––– 1961–1962. The Viking Age Coin-Hoard from Ballycastle in Co Antrim *Ulster Journal of Archaeology,* 24–25, 88–90.

—––– 1962. The 1843? find of Viking-age silver coins from Co. Tipperary. *Journal of the Cork Historical and Archaeological Society,* 67, 41–7.

—––– 1962. New light on the 1837 Viking-Age coin-hoard from Ballitore. *Journal of the Royal Society of Antiquaries of Ireland,* 92, 175–86.

—––– 1963. The Dublin pennies in the name of Sihtric Silkbeard in the Hermitage Museum at Leningrad. *Journal of the Royal Society of Antiquaries of Ireland,* 93, 1–8.

—––– 1965. New light on the 1843 Viking-age coin hoard from Derrykeighan, near Dervock, Co. Antrim. *British Numismatics Journal,* 34, 32–6.

—––– 1965. *Viking coins of the Danelaw and of Dublin,* London: Trustees of the British Museum.

—––– 1966. *Sylloge of coins of the British Isles. [8], The Hiberno-Norse coins in the British Museum* London: Trustees of the British Museum.

—––– 1968. The Hiberno-Norse coins in the 1967 find from Immelunda Parish, Gotland. *Journal of the Royal Society of Antiquaries of Ireland,* 98, 197–9.

—––– 1968. 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.

—––– 1972. Aspects of George Petrie. III.—George Petrie and a century of Irish numismatics. *Proceedings of the Royal Irish Academy Section C,* 72, 165–93.

—––– 1973. The forms of proper names appearing on the earliest coins struck in Ireland, in *Otium et Negotium,* ed. F. Sandgren Stockholm, 49–65.

—––– 1973. Some Irish evidence for the date of the crux coins of Aethelred II, in *Anglo-Saxon England,* ed. P. Clemoes Cambridge: Cambridge Univeristy Press.

—––– 1973–1974. Some further light on the 1891 Viking-age coin-hoard from Ballycastle *Ulster Journal of Archaeology,* 36–37, 87–9.

—––– 1975. The 1973 Viking-age coin-find from Dunmore Cave. *Old Kilkenny Review,* 70–9.

—––– 1975. A forgotten eighteenth-century discovery of Hiberno-Norse coins in the County Meath. *Ríocht na Mídhe,* 6(1), 55–8.

—––– 1976. Roman coins from Ireland and the date of St. Patrick. *Proceedings of the Royal Irish Academy Section C,* 76, 181–90.

—––– 1977. An Ex Voto of eleventh-century silver coins from Co. Westmeath. *Ríocht na Mídhe,* 6(3), 19–22.

—––– 1978. The Hiberno-Norse coins of Gotlands Fornsal, Visby. *British Numismatics Journal,* 48, 29–34.

`

Dolley, M. & J. Ingold 1961. Viking age coin hoards from Ireland and their relevance to Anglo-Saxon studies, in *Anglo-Saxon coins: Studies presented to F.M. Stenton*, ed. M. Dolley London, 241–65.

Dolley, M. & C. J. Lynn 1976. A provisional note on the incidence of coin-hoarding in Viking age Ireland. *Irish Archaeological Research Forum,* 3.

Dolley, M. & T. Talvio 1977. A little-known contribution to Hiberno-Norse numismatics of Otto Alcenius (1838–1913). *Proceedings of the Royal Irish Academy Section C,* 77, 213–21.

Donaghy, C. & E. Grogan 1997. Nave-gazing at Uisneach, Co. Westmeath. *Archaeology Ireland,* 11(4), 24–6.

Donnelly, C. 1988. Antrim. *Archaeology Ireland,* 2(3), 90–3.

Dowd, M. 2001. Archaeology of the subterranean world. *Archaeology Ireland,* 15(1), 24–9.

–––– 2007. Living and dying in Glencurran Cave. *Archaeology Ireland,* 21(1), 36–9.

Dowd, M. & C. Corlett 2002. Brothers in Caves- lost archives of subterranean Waterford rediscovered. *Archaeology Ireland,* 16(1), 8–10.

Dowd, M., L. Fibiger & L. G. Lynch 2006. The Human Remains from Irish Caves Project. *Archaeology Ireland,* 20(3), 16–9.

Downey, L., E. P. Kelly & C. Stanton 2006. Bog Butter: Dating Profile and Location. *Archaeology Ireland,* 20(1), 32–4.

Downham, C. 2003–2004. The Vikings in Southern Uí Néill until 1014. *Peritia,* 17–18, 233–55.

–––– 2007. St Bega - myth, maiden or bracelet? An insular cult and its origins. *Journal of Medieval History,* 33(1), 33–42.

Doyle, I. W. 1998. The early medieval activity at Dalkey Island, Co. Dublin: a re-assessment *Journal of Irish Archaeology,* 9, 89–103.

Doyle, I. W., D. Jennings & J. MacDermott 2002. *Unpublished excavations in the Republic of Ireland, 1930-1997 / prepared for the Heritage Council* Kilkenny: The Heritage Council.

Doyle, J. 1998. Kilcumney-its origins, aftermath & legacy-a review. *Old Kilkenny Review*, 140–3.

Doyle, M. 2007. Dress, ornament and bodily identities in early medieval Ireland: An archaeology of personhood. *Trowel,* 11, 26–40.

Drennan, C. 1965. Gowran. *Old Kilkenny Review,* 17, 52–63.

Drew, D. P. & D. Huddart 1980. Dunmore Cave, County Kilkenny: a reassessment. *Proceedings of the Royal Irish Academy Section C,* 80, 1-23.

Driscoll, S. T. (ed.) 1988. *Power and politics in early medieval Britain and Ireland,* Edinburgh: Edinburgh University Press.

Duczko 1985. The Filigree and granulation work of the Viking Period, in *From Viking to Cruasader: Scandinavia and Europe, 800-1200*, eds. E. Rosedahl & D. M. Wilson Stockholm: Birka.

Duffy, J. 1985. Kilmeena, Part.1. *Cathair Na Mart,* 5, 5–30.

Duffy, S. 1992. Irishmen and Islemen in the Kingdoms of Dublin and Man 1052-1171. *Ériu,* 93–133.

–––– 1995. Ostmen, Irish and Welsh in the eleventh century. *Peritia,* 9, 378–96

–––– (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 2000,* 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.

Duffy, S., A. Mac Shamhráin, J. Moynes & P. Harbison 2005. Medieval Ireland: an encyclopedia in *Medieval Ireland: an encyclopedia* eds. S. Duffy, A. Mac Shamhráin, J. Moynes & P. Harbison New York: Routledge, 546.

Duignan, L. 1973. A hand-pin from Treanmacmurtagh Bog, Co. Sligo. *Journal of the Royal Society of Antiquaries of Ireland,* 103, 220–3.

Duignan, M. 1944. Early monastic site at Peakaun, Co. Tipperary (note). *Journal of the Royal Society of Antiquaries of Ireland,* 74, 226–7.

–––– 1944. Irish agriculture in Early Historic times. *Journal of the Royal Society of Antiquaries of Ireland,* 74, 124–45.

–––– 1944. Souterrain at Ardbraccan, Co. Meath (note). *Journal of the Royal Society of Antiquaries of Ireland,* 74, 224.

–––– 1950–1951. The Moylough (Co. Sligo) and other Irish belt-reliquaries. *Journal of the Galway Archaeological and Historical Society,* 24(3 & 4), 83–94.

–––– 1951. Early monastic site, Kiltiernan East townland, Co. Galway. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 73–5.

–––– 1954–1956. Clonfert cathedral: a note. *Journal of the Galway Archaeological and Historical Society,* 26(1 & 2), 29.

Duke, S. 1998. Irish bridge sheds light on dark ages. *Science,* 279(5350), 480.

Dumville, D. N. 1973. Biblical apocrypha and the Early Irish: a preliminary investigation. *Proceedings of the Royal*

        Irish Academy Section C, 73, 299–338.

–––– 1997. The origins and early history of insular monasticism. *Bulletin of the Institute of Oriental and Occidental Studies, Kansai University,* 30, 85–107.

Dunbar, J. & I. Fisher 1995. *Iona, A Guide to the Monuments,* Edinburgh: HMSO.

Duncan, A. A. M. 1975. *Scotland, the making of the kingdom* Edinburgh: Oliver and Boyd.

Dunlevy, M. 1968. A bronze ring-pin from Limerick. *North Munster Antiquarian Journal,* 11, 75.

–––– 1988. A classification of early Irish combs. *Proceedings of the Royal Irish Academy Section C,* 88, 341–422.

–––– 1989. *Dress in Ireland,* London: Holmes & Meier Pub.

Dunne, N. 2007. An exciting array of finds from the Carlow Bypass. *Seanda: National Roads Authority Magazine,* 2, 64–6.

Dunne, N., P. Gosling & B. Ronayne 1976. The Stickillin Souterrain(s). *Journal of the Louth Archaeological and Historical Society,* 18(4), 272–8.

Earwood, C. 1990. *Domestic wooden artefacts from prehistoric and early historic periods in Britain and Ireland: their manufacture and use,* (Unpublished Phd.) Exeter: University of Exeter.

–––– 1991–1992. Turned wooden vessels of the early historic period. *Ulster Journal of Archaeology,* 54–55, 154–9.

–––– 1993. *Domestic wooden artifacts in Britain and Ireland from Neolithic to Viking times,* Exeter: Exeter University Press.

–––– 1997. Bog-butter: A two thousand year history. *Journal of Irish Archaeology,* 8.

Edel, B. 2001. *The Celtic West and Europe: Studies in Celtic Literature and the early Irish church,* Dublin: Four Courts Press.

Editor 1959. Rathealy Fort, Co. Kilkenny (note). *Journal of the Royal Society of Antiquaries of Ireland,* 89, 97.

–––– 1989. The Ecclesiastical Site at Moyne, Co. Galway. *Archaeology Ireland,* 3(3), 84.

–––– 1990. A date of Moynagh Lough Crannóg, Co. Meath. *Archaeology Ireland,* 4(1), 4–5.

–––– 1991. Middens, Digs and Dates. *Archaeology Ireland,* 5(1), 5.

–––– 1992. Crannog discovery. *Archaeology Ireland,* 6(2), 7.

–––– 1993. Bulldoozing ringforts in county Cork. *Archaeology Ireland,* 7(4), 6.

–––– 1994. Early Christian/medieval buildings on Croagh Patrick. *Archaeology Ireland,* 8(4), 5.

–––– 1994. Moving statues and Ogham Stones. *Archaeology Ireland,* 8(4), 4.

–––– 1995. A bridge at Clonmacnoise. *Archaeology Ireland,* 9(1), 5.

–––– 1995. Crosses lost and found. *Archaeology Ireland,* 9(1), 6.

–––– 1995. Vikings in West Cork? *Archaeology Ireland,* 9(3), 4.

–––– 1997. Lisheen Archaeological Project. *Archaeology Ireland,* 11(3), 5.

–––– 1997. Patrician church at Armoy excavated. *Archaeology Ireland,* 11(2), 4.

–––– 1997. Surprises at Temple Bar Sites in Dublin. *Archaeology Ireland,* 11(1), 5.

–––– 1997. Underwater excavations at Clonmacnoise. *Archaeology Ireland,* 11(4), 4.

–––– 1998. Athlunkard Viking 'Longphort' identified. *Archaeology Ireland,* 12(2), 7.

–––– 1998. Clonmacnoise Boats. *Archaeology Ireland,* 12(3), 6.

–––– 1998. Remember 1798 or was it 798? *Archaeology Ireland,* 12(2), 6.

–––– 1999. Report from the Underworld. *Archaeology Ireland,* 13(3), 5.

–––– 2000. Dunmore find. *Archaeology Ireland,* 14(1), 5.

–––– 2000. Excavation at Aghavea, Co. Fermanagh. *Archaeology Ireland,* 14(3), 4.

–––– 2000. Excavations in Limerick City. *Archaeology Ireland,* 14(1), 6.

–––– 2000. Ninch discoveries. *Archaeology Ireland,* 14(3), 7.

–––– 2001. Cork Vikings. *Archaeology Ireland,* 16(4), 5.

–––– 2002. Copper-alloy hand-bell from Antrim. *Archaeology Ireland,* 16(4), 6.

–––– 2004. Bypass archaeological works lead to discovery of medieval church. *Archaeology Ireland,* 18(1), 4.

–––– 2004. Yes, your lordship. *Archaeology Ireland,* 18(4), 4.

–––– 2005. Hopefield Road, Corrstown, Co. Dublin. *Archaeology Ireland,* 19(1), 4.

–––– 2006. 'Miracle' find of medieval manuscript in Tipperary Bog. *Archaeology Ireland,* 20(3), 4.

Edwards, D. (ed.) 2004. *Regions and rulers in Ireland, 1100-1650: essays in honour of Kenneth Nicholls* Dublin: Four Courts Press.

Edwards, N. 1982. *A reassessment of the early medieval stone crosses and related sculpture of Offaly, Kilkenny and Tipperary,* (Unpublished Phd.) Durham: University of Durham.

–––– 1982. Some observations on the layout and construction of abstract ornament in early christian sculpture, in *Studies in medieval Sculpture*, ed. F. H. Thomson London: Society of Antiquaries of London, 229.

–––– 1983. An early group of crosses from the Kingdom of Ossory. *Journal of the Royal Society of Antiquaries of Ireland,* 113, 5–46.

–––– 1983. Some observations on the layout and construction of abstract ornament in early christian Irish sculpture, in *Studies in medieval Sculpture*, ed. F. H. Thomson London, 3–17.

–––– 1984. Two sculptural fragments from Clonmacnois. *Journal of the Royal Society of Antiquaries of Ireland,* 114, 57–62.

–––– 1985. The origins of the freestanding stone cross in Ireland: Imitation or innovation? *Bulletin of the Board of Celtic Studies,* 32, 393–410.

–––– 1986. *The South Cross, Clonmacnoise,* Oxford: Tempus Reparatum.

–––– 1990. Some crosses of county Kilkenny, in *Kilkenny: History and Society*, eds. W. Nolan & K. Whelan Dublin: Geography Publications, 33–62.

–––– 1994. Review article: The iconography of the Irish High Cross. Carolingian influence in Ireland in the ninth century. *Early Medieval Europe,* 3(1), 63-71.

–––– 1996. *The archaeology of early medieval Ireland* London: Batsford.

–––– 1996. Identifying the archaeology of the early church in Wales and Cornwall, in *Church Archaeology Research Directions for the Future*, eds. J. Blair & C. Pyrah London: Council for British Archaeology research report 104, 49–62.

–––– (ed.) 1997. *Landscape and settlement in medieval Wales* Oxford: Oxbow Books.

–––– 1998. A group of shafts and related sculpture from Clonmacnoise and its environs, in *Clonmacnoise Studies: Seminar Papers Vol. 2*, ed. H. King Dublin: Wordwell, 101-18.

–––– 1998. The Irish Connection, in *The St. Andrew's Sacrophagus: a Pictish masterpiece and its international connections*, ed. S. Foster Dublin: Historic Scotland, 227-39.

–––– 2002. Celtic saints in early medieval archaeology, in *Local Saints and Local Churches in the early medieval west*, eds. A. Thacker & R. Sharpe Oxford: Oxford University Press, 225–65.

–––– 2005. The archaeology of early medieval Ireland, c.400-1169: Settlement and economy, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. i. Ó Cróinín London: Oxford University Press, 549–607.

–––– 2007. Edward Lhuyd and the origins of early medieval Celtic archaeology. *Antiquaries Journal*, 87.

Edwards, N. & A. Lane (eds.), 1992. *The Early church in Wales and the west: recent work in early Christian archaeology, history and place-names,* Oxford: Oxbow.

Egan, O. 2007. Past lives in the midlands: archaeology unearthed on the N6 Kilbeggan-Athlone road Scheme. *Seanda: National Roads Authority Magazine,* 2, 12–3.

Egan, P. K. 1956–1957. Clonfert museum and its collections. *Journal of the Galway Archaeological and Historical Society,* 27, 33–76.

Ellis, J. 2003. Conservation at Clonfert: discoveries made during work on the Romanesque Portal. *Archaeology Ireland,* 17(4), 8–12.

Ellis, J. & R. Moss 1999. The conservation of the Romanesque portal at Killaloe: exposing the history of one of Clare's finest carved doorways. *Journal of the Royal Society of Antiquaries of Ireland,* 129, 67–89.

Empereur, J-Y. & Picon, M. 1989. 'Les régions de production d'amphores impérials en Méditerranée orientale', in A. Hesnard et al. (eds.) 1989, *Amphores romaines et histoire économique; Dix ans de recherché.* Rome, 223-248.

English, N. W. 1971. Field antiquities of County Longford. *Teathbha,* 1(2), 146–54.

Enright, F. 1983. Father Mathew visits the wells and Killaloe. *The Other Clare,* 7, 55–6.

Eogan, G. 1957. Recent crannog discoveries in Meath. *Ríocht na Mídhe,* 1(3), 50–4.

–––– 1968. Excavations at Knowth, Co. Meath, 1962-1965. *Proceedings of the Royal Irish Academy Section C,* 66 Section C(4), 299–382.

–––– 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 Section C,* 74 Section C, 11–112.

–––– 1977. The Iron Age and early Christian settlement at Knowth, Co. Meath, Ireland, in *Ancient Europe and the Mediterranean, studies in honour of Hugh Hencken*, ed. V. Markotic Warminster: Aris & Phillips Ltd, 69–76.

–––– 1990. Ballynee souterrains, County Meath. *Journal of the Royal Society of Antiquaries of Ireland,* 120, 41–64.

–––– 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 Section C,* 91, 133–76.

–––– 1991. Prehistoric and early historic culture change at Brugh na Bóinne. *Proceedings of the Royal Irish Academy Section C,* 91, 105–32.

–––– 2000. Life and Living at Lagore, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Dublin: Four Courts Press, 64–82.

–––– 2001. Archaeology in Meath: past, present and future. *Ríocht na Mídhe,* 12, 1–16.

–––– 2001. High crosses in Brega. *Ríocht na Mídhe,* 12, 17–24.

–––– 2004. Knowth, 40 years on. *Ríocht na Mídhe,* 15, 1–11.

Eogan, G. & J. Bradley 1977. A souterrain at Balrenny near Slane, Co. Meath. *Journal of the Royal Society of Antiquaries of Ireland,* 107, 96–103.

Eogan, J. 1995. Knockea, Co. Limerick, A unique Early Christian monument. *Trowel,* 6, 18–22.

–––– 1998. Exciting new discoveries at Meath development site. *Archaeology Ireland,* 12(3), 7.

–––– 2006. From the Euphrates to the Suir: an eighth century Islamic coin from Woodstown, Co. Waterford. *Seanda: National Roads Authority Magazine,* 1, 67.

–––– 2007. Revealing the treasures within: Conserving the Viking age weapons from the Woodstown warrior grave. *Seanda: National Roads Authority Magazine,* 2, 9–11.

Etchingham, C. 1991. The Early Irish Church: Some Observations on Pastoral Care and Dues. *Ériu,* 42, 99–118.

–––– 1994. Bishops in the early Irish church. *Studia Hibernica,* 28, 35–62.

–––– 1994. Evidence of Scandinavian settlement in Wicklow, in *Wicklow: history & society*, eds. K. Hannigan & W. Nolan Dublin: Geography Publications, 113–38.

–––– 1996. Early medieval Irish history, in *Progress in medieval Irish studies*, eds. K. Simms & K. McCone

Maynooth: St Patrick's College Maynooth Department of Old and Middle Irish, 123–53.

–––– 1996. *Viking raids on Irish church settlements in the ninth century: a reconsideration of the annals* Maynooth: St Patrick's College Maynooth Department of Old and Middle Irish.

–––– 1999. *Church Organisation in Ireland AD 650-1000,* Naas: Laigin Publications.

–––– 1999. The idea of monastic austerity in early Ireland, in *Luxury and austerity*, eds. J. R. Hill & C. Lennon Dublin: University College Dublin Press, 14–29.

–––– 2000. Episcopal hierarchy in Connacht and Tairdelbach Ua Conchobair. *Journal of the Galway Archaeological and Historical Society,* 52, 13–29.

–––– 2001. North Wales, Ireland and the Isles: the insular Viking zone. *Peritia,* 15, 145–87.

Evans, E. E. 1944. Souterrain at Ballyhornan, Co Down *Ulster Journal of Archaeology,* 7, 102–4.

–––– 1946. Souterrains in Co. Antrim *Ulster Journal of Archaeology,* 9, 79–83

–––– 1947. Bog butter: another explanation *Ulster Journal of Archaeology,* 10, 59–62

–––– 1950. Rath and souterrain at Shaneen Park, Belfast, townland of Ballyaghagan, Co. Antrim. *Ulster Journal of Archaeology,* 13, 6–27.

–––– 1951. R. A. S. Macalister and the archaeology of Ireland *Ulster Journal of Archaeology,* 14, 2–6.

–––– 1952. Two Belfast Raths *Ulster Journal of Archaeology,* 15, 84–6.

–––– 1953. Archaeology in Northern Ireland, 1921-1951 *Ulster Journal of Archaeology,* 16, 3–6.

Evans, E. E. & M. R. Colhoun 1946. Newly discovered souterrains *Ulster Journal of Archaeology,* 9, 79–86

F.G.A. 1959. Excavation of two ringforts near Shannon Airport (note). *North Munster Antiquarian Journal,* 8(2), 89–90.

Fahy, E. M. 1953. A souterrain at Ballyarra, Co. Cork *Journal of the Cork Historical and Archaeological Society,* 58 55-9.

–––– 1969. Early settlement in the Skibbereen area. *Journal of the Cork Historical and Archaeological Society,* 75, 147–56.

Fanning, T. 1969. *Aspects of the Bronze Ringed Pin in early Christian and early mediaeval Ireland,* (Unpublished M.A.) Dublin: University College Dublin.

–––– 1969. The bronze ringed pins in the Limerick City Museum. *North Munster Antiquarian Journal,* 12, 6–11.

–––– 1970. Excavation of a ringfort at Bowling Green, Thurles, Co. Tipperary. *North Munster Antiquarian Journal,* 13, 6–21.

–––– 1970. The Viking grave goods discovered near Larne, Co. Antrim in 1840. *Journal of the Royal Society of Antiquaries of Ireland,* 100, 71–8.

–––– 1971. Two cross-inscribed stones from Reask, Co. Kerry, at Adare Manor. *North Munster Antiquarian Journal,* 14, 25–8.

–––– 1972. Excavations of a ringfort at Narraghmore, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 15(2), 171–7.

–––– 1973. Excavations at Reask, Co. Kerry. Preliminary report. *Journal of the Kerry Archaeological and Historical Society,* 6, 5–8.

–––– 1973–1974. Excavation of a Ringfort at Pollardstown, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 15(3), 251–61.

–––– 1974–1975. Some bronze ringed pins from the Irish midlands. *Journal of the Old Athlone Society,* 1(4), 211–7.

–––– 1974–1975. Some Bronze ringed Pins from the Irish midlands. *Journal of the Old Athlone Society,* 1(4), 211–7.

–––– 1975. Excavations at Reask. Preliminary report, seasons 1973-5. *Journal of the Kerry Archaeological and Historical Society,* 8, 5–10.

–––– 1976. Excavations at Clontuskert Priory, Co. Galway. *Proceedings of the Royal Irish Academy Section C,* 76, 97–169.

–––– 1977. An ogham stone and cross-slab from Ratass Church, Tralee. *Journal of the Kerry Archaeological and Historical Society,* 10, 14–8.

–––– 1977–1978. Excavation of a ringfort at Narraghmore, Co. Kildare - addendum. *Journal of the Kildare Archaeological and Historical Society,* 16(1), 71–2.

–––– 1979–1980. An Early Christian site at Ballinaboy, Co. Roscommon. *Journal of the Galway Archaeological and Historical Society,* 37, 90–3.

–––– 1981. Excavation of an Early Christian cemetery and settlement at Reask, county Kerry. *Proceedings of the Royal Irish Academy Section C,* 81 Section C, 67–172.

–––– 1984. Appendix: some field monuments in the townlands of Clonmelsh and Garryhundon, Co. Carlow. *Peritia,* 3.

–––– 1984. The Christian impact on early Ireland: place name elements of archaeological interest, in *Ireland and Europe: the early Church* eds. P. Ní Chatháin & M. Richter Stuttgart: Klett-Cotta, 25–51.

–––– 1988. Three ringed pins from Viking Dublin and their significance, in *Settlement and Society in Medieval Ireland*, ed. J. Bradley Kilkenny: Boethus, 161–75.

–––– 1992. Ringed Pins, the Hiberno-Norse and the discovery of Vinland. *Archaeology Ireland,* 6(1), 24–6.

–––– 1994. *Viking age ringed pins from Dublin* Dublin: Royal Irish Academy.

Fanning, T. & R. Crumlish 1992. A bronze ringed pin from Ballintemple, Tullaghobegley, Co. Donegal. *Donegal*

Annual, 44, 83-7.

Farrell, R. 1990. The Crannóg Survey Project: The Lakes of the West Midlands. *Archaeology Ireland,* 4(1), 27–9.

Farrelly, J. & C. O'Brien 1996. Surprising discoveries in County Tipperary. *Archaeology Ireland,* 10(3), 28–9.

Feehan, J. 1982. The nature and function of Irish exhibitionist figure sculpture: evidence from the south midlands. *Eile: Journal of the Roscrea Heritage Society,* 1, 45-52.

Feehan, J. & G. O'Donovan 1996. *The Bogs of Ireland: An introduction to the natural, cultural and industrial heritage of Irish peatlands,* Dublin: University College Dublin Press.

Feeley, E. 1990–1991. Early Christian and Anglo-Norman settlement in the townland of Baltrasna, Ashbourne, Co. Meath. *Ríocht na Mídhe,* 8(3), 151–3.

Fellows-Jensen, G. 2001. Nordic names and loanwords in Ireland, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 107–14.

Fenlon, J., N. Figgis & C. Marshall (eds.), 1987. *New perspectives: studies in art history in honour of Anne Crookshank* Dublin: Irish Academic Press.

Fenwick, J. 1996. Cross slab-Hill of Skreen. *Ríocht na Mídhe,* 9(2), 46–7.

–––– (ed.) 2003. *Lost and found: discovering Ireland's past* Bray: Wordwell.

Fenwick, J., L. Geraghty, J. Waddell & K. Barton 2006. The innermost secrets of Rathcroghan Mound. *Archaeology Ireland,* 20(2), 26–7.

Fibiger, L. 2005. Minor ailments, furious fights and deadly diseases: investigating life in Johnstown, County Meath, A.D. 400-1700, in *Recent Archaeological Discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 99–110.

Finberg, H. P. R. (ed.) 1972. *The Agrarian History of England and Wales, Vol 1(2): A.D. 43-1042* Cambridge: Cambridge Unviersity Press.

Fitzgerald, M. 2006. Archaeological discoveries on a new section of the N2 in counties Meath and Dublin, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 29–42.

–––– 2006. Archaeological discoveries on the N2 Finglas-Ashbourne Road Scheme. *Seanda: National Roads Authority Magazine,* 1, 40–3.

FitzPatrick, E. 1989–1991. An Early Christian site at Curraclone, Co. Laois. *Journal of the Kildare Archaeological and Historical Society,* 17, 213–5.

–––– 1997. The Crowning Hand of God. *Archaeology Ireland,* 11(1), 21–3.

–––– 1997. The historic assembly sites of Tulach Uí Dheadhaidh and Carn Mhic Táil. *The Other Clare,* 21, 17–9.

–––– 1998. *The medieval churches of County Offaly* Dublin: Government of Ireland.

–––– 2004. *Royal inauguration in Gaelic Ireland c.1100-1600: a cultural landscape study,* Woodbridge: Boydell.

–––– 2004. Royal inauguration mounds in medieval Ireland: antique landscape and tradition, in *Assembly Places and Practices in Medieval Europe*, eds. A. Pantos & S. Semple Dublin: Four Courts Press, 44–72.

FitzPatrick, E. & R. Gillespie (eds.), 2006. *The parish in medieval and early modern Ireland: community, territory and building* Dublin: Four Courts Press for the Group for the Study of Irish Historic Settlement.

FitzPatrick, E. & C. O'Brien 1998. *The Medieval Churches of County Offaly,* Dublin: Government of Ireland.

FitzPatrick, E., M. O'Brien & P. Walsh 2004. *Archaeological investigations in Galway City, 1987-1998 / edited by Elizabeth FitzPatrick, Madeleine O'Brien and Paul Walsh ; based on excavation, monitoring and survey reports by Markus Casey ... [et al.] ; with specialist contributions by Christine Baker ... [et al.] ; illustrators, Sine.ad Armstrong ... [et al.] ; photography, Charlie Byrne ... [et al.]..* Bray: Bray, Co. Wicklow : Wordwell.

Fitzpatrick, M. 2001. Cahermore stone fort, Co. Clare: survey and excavation. *North Munster Antiquarian Journal,* 41, 45–64.

–––– 2002. The excavation of a souterrain entrance at Loughrea Golf Course, County Galway. *Journal of the Galway Archaeological and Historical Society,* 54, 215–20.

Flanagan, D. 1969. Ecclesiastical nomenclature in Irish texts and placenames: a comparision, in *10th International Congress of Onomastic Sciences* Vienna, 379–88.

Flanagan, L. N. W. 1959. Department of Antiquities, Belfast Museum and Art Gallery Archaeologial acquisitions of Irish origin for the year 1958 *Ulster Journal of Archaeology,* 22, 43–55.

–––– 1960. Deparment of Antiquities, Belfast Museum and Art Gallery. Archaeological acquisitions of Irish origin for the year 1953 *Ulster Journal of Archaeology,* 23, 41–60

–––– 1966. Dark Age sites in Ballymacrea Lower, Co Antrim *Ulster Journal of Archaeology,* 29, 115–6.

Flanagan, L. N. W., R. B. Warner & P. C. Woodman 1968. Ulster Museum: archaeological acquisitions of Irish origin from the year 1966 *Ulster Journal of Archaeology,* 31, 33–52

Flanagan, M. T. 1994. Historia Gruffud vab Kenan and the origins of Balrothery, Co. Dublin. *Cambridge Medieval Celtic Studies,* 28, 71–94.

Flood, D. T. 1973–1974. An ancient cross at Askeaton? (note). *North Munster Antiquarian Journal,* 16, 88–9.

Flower, R. E. W. 1954. Irish High Crosses. *Journal of Warburg and Courtauld Institutes,* 17, 87–97.

Foley, C. 1989. Tyrone. *Archaeology Ireland,* 3(3), 86–90.

Follett, W. 2006. *Céli Dé in Ireland. Monastic Writing and Identity in the Early Middle Ages,* Woodbridge: Boydell Press.

Fomin, M. 2004. On the notions of death, navigation and the otherworld. *Cambridge Medieval Celtic Studies,* 47,

73–80.

Foote, P. & D. M. Wilson 1970. *The Viking Achievement,* London: Sidgewick & Jackson.

Ford, P. K. 1990. The blind, the dumb, and the ugly: aspects of poets and their craft in Early Ireland and Wales. *Cambridge Medieval Celtic Studies,* 19, 27–40.

Forsayeth, R. P. 1931. The Brothers' Cave [Whitechurch, Co. Waterford]. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 179–201.

Forsythe, W., R. McConkey & T. C. McErlean 2002. *Strangford Lough: Maritme archaeology on the County Down Coast,* Bray: Wordwell.

Foster, S. 2004. *Picts, Gaels and Scots,* London: Batsford.

Fowler, E. 1963. Celtic metalwork of the fifth and sixth centuries A.D. *Archaeology Journal,* 120, 98–160.

–––– 1968. Haning Bowls, in *Studies in ancient Europe*, eds. J. Coles & D. D. A. Simpson Leicester: Leicester University Press, 287–310.

Fowler, P. J. 1966. Ridge and furrow cultivation at Cush, Co. Limerick *North Munster Antiquarian Journal,* 10(1), 69-71.

Fox, M. J. 2005. A Welsh presence in early Uíbh Fháilí? *Offaly Heritage,* 3, 5–9.

Fox, M. J. & M. C. Fox 2003. The origins and early history of the Sionnach Foxes: from founding fathers to the late twelfth century. *Offaly Heritage,* 1, 31–7.

Frantzen, A. J. & D. Moffat (eds.), 1994. *The Work of Work: Servitude, Slavery and Labor in Medieval England,* Glasgow: Cruitne Press.

Fredengren, C. 2000. Iron Age crannogs in Lough Gara. *Archaeology Ireland,* 14(2), 26–8.

–––– 2000. Iron Age crannogs in Sligo. *Archaeology Ireland,* 14(1), 7.

–––– 2002. *Crannogs: a study of people's interaction with lakes, with particular reference to Lough Gara in the north-west of Ireland,* Bray: Wordwell.

–––– 2002. Discovery Programme in Lough Kinsale. *Archaeology Ireland,* 16(4), 20–3.

Fredengren, C., M. McClatchie & I. Stuijts 2004. Connections and distance: Investigating social and agricultural issues relating to early medieval crannogs in Ireland. *Environmental Archaeology,* 9, 173–8.

Fry, M. & A. Martin 1994. Preserving by copying. *Archaeology Ireland,* 8(1), 13.

Fry, S. 1999. *Burial in Medieval Ireland 900–1500,* Dublin: Four Courts Press.

Fuglesang, S. H. 1980. *Some aspects of the Ringerike style: a phase of 11th century Scandinavian art,* Odense: Odense University Press.

–––– 1981 & 1982. Stylistic groups in late Viking and early Romanesque art. *Institutum Romanum Norvegiae: Acta ad Archaeologiam et Artrium Historiam Pertinentia, serie altera in 8,* 1 & 2, 79-125 & -73.

Gabbett, M. 1979. Kilmoganny. *Old Kilkenny Review*, 64–74.

Gaffikin, M. 1938. Souterrain at Ardglass, Co. Down *Ulster Journal of Archaeology,* 1, 94–6.

Gahan, A. 1997. A course on Irish prehistory- Excavations at Castle Upton, Templepatrick, Co. Antrim. *Archaeology Ireland,* 11(2), 29–31.

Gailey, A. 1968. Irish iron-shod wooden spades *Ulster Journal of Archaeology,* 31, 77–86.

–––– 1970. Irish corn-drying kilns. *Ulster Folklife Journal,* 15/16, 52–71.

–––– 1970. The typology of the Irish spade, in *The spade in Northern and Atlantic Europe*, eds. A. Gailey & A. Fenton Belfast: Ulster Folk Museum, 257.

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, 108-129.

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.

Gallagher, M. A. & J. Raftery 1952. (separate notes): Crannóg finds at Lough Gara. *Journal of the Royal Society of Antiquaries of Ireland,* 82, 182–3.

Galloway, P. 1992. *The Cathedrals of Ireland,* Belfast: Institute of Irish Studies, the Queen's University of Belfast.

Gamble, D. P. 1946. Excavations at Scollan's Cave *Ulster Journal of Archaeology,* 9, 138.

Gameson, R. (ed.) 1994. *The early medieval bible: its production, decoration, and use,* Cambridge: Cambridge University Press.

Gannon, A. 1966–1971. Promontory fort at Ballymore, Co. Roscommon. *Journal of the Galway Archaeological and Historical Society,* 32, 91–2.

Garton, T. 1981. A Romanesque Doorway at Killaloe. *Journal of the British Archaeological Association,* 134, 31–57.

–––– 2001. Masks and monsters: some recurring themes in Irish Romanesque sculpture, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 121-40.

Gaskell-Brown, C. 1979. Excavations at Greencastle, County Down, 1966-1970 *Ulster Journal of Archaeology,* 42, 51–65

Gaskell-Brown, C. & N. F. Brannon 1978. The rath in Hillsborough Fort, County Down *Ulster Journal of Archaeology,* 41, 78–87

Gaskell-Brown, C. & A. E. T. Harper 1984. Excavations on Cathedral Hill, Armagh, 1968 (enclosure ditch, metal workshop, buildings, many finds) *Ulster Journal of Archaeology,* 47, 109–61.

Geissel, H. 2006. *A road on the long ridge- in search of the ancient highway on the Esker Riada,* Dublin: CRS Publications.

Gelly, M. A. 1995. The Irish High Cross: Methods of Design, in *From the Isles of the North: early medieval art in Ireland and Britain: proceedings of the third International Conference on Insular Art, held in the Ulster Museum, Belfast, 7-11 April, 1994*, ed. C. Bourke Belfast: HMSO, 157–66.

Geraghty, S. 1996. *Viking Dublin: botanical evidence from Fishamble Street,* Dublin: Royal Irish Academy.

Gerriets, M. 1983. Economy and society: clientship according to the Irish laws. *Cambridge Medieval Celtic Studies,* 6, 43–61.

–––– 1985. Money among the Irish: Coin hoards in Viking Age Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 115, 121–39.

–––– 1985. Money in early Christian Ireland according to the Irish laws. *Comparative Studies in society and history,* 27, 323–39.

–––– 1987. Kingship and Exchange in Pre-Viking Ireland. *Cambridge Medieval Celtic Studies,* 13, 39–72.

–––– 1988. The king as judge in early Ireland. *Celtica,* 20, 29–52.

Giacometti, A. 2006. Living in the Landscape. *Archaeology Ireland,* 20(2), 36–9.

Gibbons, E. K. & E. P. Kelly 2003. A Viking Age farmstead in Connemara. *Archaeology Ireland,* 17(1), 28–31.

Gibbons, M. 1990. The archaeology of early settlement in county Kilkenny, in *Kilkenny: History and Society*, eds. W. Nolan & K. Whelan Dublin: Geography Publications, 1–32.

–––– 2005. Athlunkard (Ath-an-Longphort): A Reassessment of the Proposed Viking Fortress in Fairyhill Td County Clare. *The Other Clare,* 29.

Gibbons, M. & M. Gibbons 2004. Dunmore: fortress no more. *Archaeology Ireland,* 18(3), 8–12.

–––– 2004. Dyeing in the Mesolithic. *Archaeology Ireland,* 18(1), 28–31.

–––– 2005. An Hiberno-Norse ring found in Connemara: Hiberno-Norse Ringed Pin from Omey Fechín, Connemara – Its historical and Cultural Setting. *Journal of the Galway Archaeological and Historical Society,* 57.

Gibbons, M. & J. Higgins 1993. Three Western Islands. *Archaeology Ireland,* 7(2), 20–3.

Gibson, D. B. 1997. 1996 Excavations at O'Dea's Castle, Dysert O'Dea, County Clare. Summary report. *The Other Clare,* 21, 47–8.

Gillespie, R. 2007. Prehistory and history on the N5 Charlestown Bypass in counties Mayo and Roscommon, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 11–24.

Gilling, F. H. 1937. Ancient sculptured cross base at Seir-Kieran, Offaly (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 294–5.

–––– 1938. Sculptured Stones at Seir-Kieran and Lorrha (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 285.

Gilmore, H. 1986. The Romanesque doorway at St. Flannan's Cathedral, Killaloe. *The Other Clare,* 10, 48–51.

Gilmore, S. & E. Murphy 2001. Reconstructing the dead man's face- a violent death from medieval Armagh. *Archaeology Ireland,* 15(2), 16–8.

Glassock, R. E. 1970. Excavations 1968-69. *Old Kilkenny Review,* 22, 31-4.

–––– 1971. Excavations at Liathmore-Mochoemog, Co. Tipperary, 1970. *Old Kilkenny Review,* 23, 45–6.

Gleeson, C. 1989. Knockanalban crannog(s), Co. Clare. *The Other Clare,* 13, 32–4.

–––– 1990. A late 8th/early 9th century horizontal mill from Kilnamona, Co. Clare. *The Other Clare,* 14, 52–4.

–––– 1991. The promontory forts of Co. Clare. *The Other Clare,* 15, 57–60.

Gleeson, D. F. 1940–1941. The collegiate church of Iniscathaigh. *North Munster Antiquarian Journal,* 2(1), 14–30.

–––– 1955. Cross slabs on Illuanmore [recte Illaunmore]. *North Munster Antiquarian Journal,* 7(2), 57.

Glover, W. 1985–1986. Antiquities from Connacht in the Ulster Museum. *Journal of the Galway Archaeological and Historical Society,* 40, 81–9.

Gógan, L. S. 1932. *The Ardagh Chalice: A description of the ministral chalice found at Ardagh in County Limerick in the year 1868; with a note on its traditional conformity to the Holy Grail of legend and story* Dublin: National Museum of Ireland.

–––– 1932. Observations on the inscription and decoration on the Dún Laoghaire stones (note). *Journal of the Royal Society of Antiquaries of Ireland,* 62, 212–9.

–––– 1948–1949. Brigantian Kildare. *Journal of the Kildare Archaeological and Historical Society,* 13(2), 75–9.

Gosling, P. 1977. Souterrain, Glaspistol townland, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 19(1), 17–9.

–––– 1979. Ballinfuil (burials found). *Journal of the Louth Archaeological and Historical Society,* 19(3), 249.

–––– 1979. Broadlough souterrain [note]. *Journal of the Louth Archaeological and Historical Society,* 19(3), 249.

–––– 1979. Five Louth souterrains. *Journal of the Louth Archaeological and Historical Society,* 19(3), 206–17.

–––– 1980. Burial vault, Haggardstown, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 19(4), 293–6.

–––– 1990. The Archaeology of Clare Island, Co. Mayo. *Archaeology Ireland,* 4(1), 7–12.

–––– 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.

–––– 1992. County Galway- an introduction to the archaeological heritage of the west. *Archaeology Ireland,* 6(3), 8–10.

———— 1993. *Archaeological inventory of County Galway. Vol.1, West Galway (including Connemara and the Aran Islands).* Dublin: Stationery Office.

Goulden, J. R. W. 1954–1956. Kilnamanagh: the lost church of Aran. *Journal of the Galway Archaeological and Historical Society,* 16(1 & 2), 35–41.

Gowen, M. (ed.) 1988. *Three Irish gas pipelines: new archaeological evidence in Munster,* Dublin: Wordwell.

———— 1992. Excavation of two souterrain complexes at Marshes Upper, Dundalk, Co. Louth. *Proceedings of the Royal Irish Academy Section C,* 92, 55–121.

———— 1992. 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 *Medieval Dublin II : proceedings of the Friends of Medieval Dublin Symposium 2000* ed. S. Duffy Trinity College Dublin: Four Courts Press, 13–52.

———— 2004. *Dublin city walls and defences: conservation plan = Múrtha agus cóir chosanta Chathair Bhaile Átha Cliath : plean caomhantais / Integrated Conservation Group and RPS McHugh / managing editor Margaret Gowen.,* Bray: Bray : Wordwell Ltd.

Gowen, M., M. Phillips & J. Ó Néill (eds.), 2005. *The Lisheen Mine Archaeological Project 1996-8 (contributing editors: Michael Phillips, John Ó Néill),* Bray: Wordwell.

Gowen, M. & G. Scally (eds.), 1996. *Summary report on excavations at 5-7 Exchange Street Upper/33-34 Parliament Street, Dublin / Margaret Gowen with Georgina Scally.,* Dublin: Dublin : Temple Bar Properties, 1996. .

Grabar, A. 1969. *Christian Iconography, A study of its origins,* London.

Graham, A. 1951. Some illustrated notes from Kerry. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 139–45.

Graham, B. J. 1977. The Towns of Medieval Ireland, in *The Development of the Irish town* ed. R. A. Butlin London: Croom Helm, 28–60.

———— 1979. The evolution of urbanization in medieval Ireland. *Journal of Historical Geography,* 5(2), 111–25.

———— 1987. Urban genesis in early medieval Ireland. *Journal of Historical Geography,* 13(1), 3–16.

———— 1987-1990. Twelfth and thirteenth century earthwork fortifications in Ireland. *Irish Sword,* 17, 225-43.

———— 1993. Early medieval Ireland: settlement as an indicator of economic and social transformation c.500-1100AD, in *An Historical Geography of Ireland*, eds. B. J. Graham & L. J. Proudfoot London: Academic Press, 19–57.

Graham, B. J. & L. J. Proudfoot (eds.), 1993. *An historical geography of Ireland,* London: Academic Press.

Graham-Campbell, J. 1972. Two group of 9th century Irish Brooches. *Journal of the Royal Society of Antiquaries of Ireland,* 102, 113–28.

———— 1973–1974. The Lough Ravel, Co Antrim, brooch and others of ninth-century date *Ulster Journal of Archaeology,* 36–37, 52–7.

———— 1975. Bossed Penannular Brooches: A review of Recent Research. *Medieval Archaeology,* 19, 33–47.

———— (ed.) 1976. *The Viking Age silver hoards of Ireland,* London: Viking Society for Northern Research.

———— 1976. Western British, Irish and later Anglo-Saxon. *Archaeological Journal,* 133, 277-89.

———— 1978–1981. The inital impact of the Vikings on Irish Art. *Saga Book: Viking Society for Northern Research,* 20, 42–8.

———— 1980. *Viking artefacts: a select catalogue* London: Published for the Trustees of the British Museum by British Museum Publications.

———— 1983. Irish monastic art, 5th to 8th centuries. *Monastic Studies,* 14, 225–45.

———— 1983. Some Viking-age penannular brooches from Scotland and the origins of the 'thistle brooch', in *From the Stone Age to the 'forty five': studies presented to R.B.K. Stevenson* eds. A. O'Connor & D. V. Clarke Edinburgh: Donald, 310-23.

———— 1986. A lost zoomorphic penannular brooch from Kells, County Meath (note). *Journal of the Royal Society of Antiquaries of Ireland,* 116, 122–3.

———— 1987. From Scandinavia to the Irish Sea: viking art reviewed, in *Ireland and insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy, 144-52.

———— 1987. Western penannular brooches and their Viking age copies in Norway: a new classification, in *Proceedings of the Tenth Viking Congress: Larkollen, Norway, 1985*, ed. J. E. Knirk Oslo: Universitetets Oldsaksamlings Skrifter, 231-46.

———— 1988. A Viking age silver hoard from near Raphoe, Co. Donegal, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. Mac Niocaill & P. F. Wallace Galway: Galway University Press, 102-11.

———— 1989. *The Viking World,* Lincoln: Windward.

———— 1998. The early Viking Age in the Irish Sea area, in *Ireland and Scandinavia in the Early Viking Age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press.

Graham-Campbell, J. & C. S. Briggs 1986. Some neglected Viking-age silver hoards from near Athlone and Co Cork. *Peritia,* 5, 309–16.

Graham-Campbell, J. & D. Kidd 1980. *The Vikings,* London: Published for the Trustees of the British Museum by British Museum Publications Limited.

Graham-Campbell, J. & M. Valor 2007. *The Archaeology of Medieval Europe,* Langeladsgrade: Aarhus University

Press.

Grant, C. 1994. New Leitrim High Cross. *Archaeology Ireland,* 8(4), 16–7.

Greene, D. 1972. Aspects of George Petrie. II.—George Petrie and the collecting of Irish manuscripts. *Proceedings of the Royal Irish Academy Section C,* 72, 158–61.

–––– 1976. The influence of Scandinavian on Irish in *Proceedings of the Seventh Viking Congress, Dublin, 15-21 August 1973* eds. B. Almqvist & D. Greene London: Viking Society for Northern Research, 75–82.

–––– 1978. The evidence of place-names in Ireland, in *The Vikings: Proceedings of the faculty of arts symposium of Uppsala University, June 6-9, 1977,* eds. T. Andersson & K. Inge Stockholm.

Greene, S. A. 2004. Emerging landscapes in Inishkea North. *Archaeology Ireland,* 18(4), 8–11.

–––– 2005. An experimental approach to Irish Latchets. *Trowel,* 10, 19–26.

Grenville, A. & J. Langdon (eds.), 1997. *Medieval Farming and Technology: the Impact of Agricultural Change in Northwest Europe (Technology and Change in History , No 1),* Leiden: Brill Academic Publishers

Grierson, P. 1959. Commerce in the Dark Ages: a critique of the evidence. *Transactions of the Royal Historical Society,* 9, 123–40.

Griffiths, W. E. 1951. Decorated Rotary Querns from Wales and Ireland *Ulster Journal of Archaeology,* 14, 49–61

Grogan, E. 1983–1984. Excavation of an Iron Age burial at Furness. *Journal of the Kildare Archaeological and Historical Society,* 16(4), 298–316.

Grogan, E. & T. Hillery 1993. *A guide to the archaeology of county Wicklow,* Wicklow: Wicklow County Council Tourism Ltd. .

Gullane, P. J. 1986. Saint Marcan's Loch and early ecclesiastical ruins at Rossclave. *Cathair Na Mart,* 6, 79–82.

Gwynn, A. 1947. 'Medieval Bristol and Dublin', *Irish Historical Studies* (5), 275-286.

Gwynn, A. 1949. The origins of St. Mary's Abbey, Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 79, 110–25.

–––– 1992. *The Irish Church in the Eleventh and Twelfth Centuries,* Dublin: Four Courts.

Gwynn, A. & R. N. Hadcock 1970. *Medieval Religious Houses Ireland: With an appendix to early sites,* London Longmans.

Hackett, L. 2008. Excavations in Moone, Co. Kildare: An example of early medieval heritage protection? *Archaeology Ireland,* 22(2), 35.

Hadden, G. W. 1968. The origin and development of Wexford Town. Part I—the prehistoric period; Part II—The Danish period. *Journal of the Wexford Historical Society,* 1, 5–16.

–––– 1969. The origin and development of Wexford Town. Part III—The Norman period. *Journal of the Wexford Historical Society,* 2, 3–12.

Hall, M. E. 1990. Two early Christian slabs from Dysart, Thomastown, County Kilkenny (note). *Journal of the Royal Society of Antiquaries of Ireland,* 120, 130–2.

–––– 1991. Two Early Christian grave slabs from Dysert, Thomastown, Co. Kilkenny. *Old Kilkenny Review,* 853–8.

–––– 1995. Iron working from some medieval Irish sites. *Peritia,* 9, 221–33

Hall, R. 1973. A hoard of Viking silver bracelets from Cushalogurt, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland,* 103, 78–85.

–––– 1973–1974. 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. 1990. Ancient agricultural activity at Slieve Gullion, Co. Armagh: the palynological and documentary evidence. *Proceedings of the Royal Irish Academy Section C,* 90, 123–34.

–––– 2000. The documentary and pollen analytical records of the vegetational history of the Irish landscape AD200-1650. *Peritia,* 14, 85–110.

HallgrÃmsson, B., B. Ã. Doannabha¡n, G. B. Walters, D. M. L. Cooper, D. GuÃ¶bjartsson & K. StefÃ¡nsson 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.

Hallgrímsson, B., B. Ó Donnabháin, B. Gudmundsson, D. Gudbjartsson & K. Stefánsson (nd). A tale of two islands: biological distance and morphological variability in Iceland and Ireland in the early historic period (in preparation).

Halpin, A. 2000. *The port of medieval Dublin: archaeological excavations at the Civic Offices, Winetavern Street, Dublin, 1993 / Andrew Halpin ; with contributions by Aidan O'Sullivan ... [et al.].* Dublin: Dublin : Four Courts Press.

Halpin, E. 2006. A good walk ruined... *Archaeology Ireland,* 20(1), 12–5.

Hamerow, H. & A. MacGregor (eds.), 2001. *Image and power in the archaeology of early medieval Britain: essays in honour of Rosemary Cramp,* Oxford: Oxbow Press.

Hamlin, A. 1971. Church sites in Langfield Parish, Co Tyrone *Ulster Journal of Archaeology,* 34, 79–83.

–––– 1972. A chi-rho-carved stone at Drumaqueran, Co Antrim *Ulster Journal of Archaeology,* 35, 22–8.

–––– 1976. *The Archaeology of Early Christianity in the North of Ireland,* (Unpublished Phd.) Belfast: Queen's University.

–––– 1976. Some further documentary evidence for the round tower at Devenish, County Fermanagh *Ulster Journal of Archaeology,* 39, 76.

———— 1977. A recently discovered enclosure at Inch Abbey, County Down *Ulster Journal of Archaeology,* 40, 85–8.

———— 1980. Two cross heads from County Fermanagh: Killesher and Galloon *Ulster Journal of Archaeology,* 43, 53–8.

———— 1982. Early Irish Stone carving: Content and Context, in *The early church in Western Britain and Ireland: studies presented to C.A. Ralegh Radford* ed. S. M. Pearse Oxford: Oxford University Press, 282–96.

———— 1984. The study of early Irish churches, in *Ireland and Europe: The Early Church*, eds. P. Ní Chatháin & M. Richter Stuttgart: Klett-Cotta, 117–26.

———— 1985. Archaeological survey: Donegal and elsewhere. *Peritia,* 4, 300–6

———— 1985. The archaeology of the Irish church in the eight century. *Peritia,* 4.

———— 1987. Crosses in early Ireland: the evidence from written sources, in *Ireland and Insular Art A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Cork: Royal Irish Academy, 138–40.

———— 1987. Iona: A view from Ireland. *Proceedings of the Society of Antiquaries of Scotland,* 117, 17-22.

———— 1992. The early Irish church: problems of identification, in *The Early Church In Wales And The West: Recent Work In Early Christian Archaeology, History And Placenames*, eds. N. Edwards & A. Lane Oxford: Oxbow, 138–44.

———— 1995. The Blackwater group of Crosses, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast, 187-96.

Hamlin, A. & C. Foley 1983. A women's graveyard at Carrickmore, County Tyrone, and the separate burial of women *Ulster Journal of Archaeology,* 46, 41–6.

Hamlin, A. & R. G. Haworth 1982. A crucifixion plaque reprovenanced. *Journal of the Royal Society of Antiquaries of Ireland,* 112, 112–6.

Hamlin, A. & C. Lynn (eds.), 1988. *Pieces of the past: archaeological excavations by the Department of the Environment for Northern Ireland 1970-1986* Belfast: H.M.S.O.

Hammond, M. H. 2006. Ethnicity and the writing of medieval Scottish history. *Scottish Historical Review,* 85, 1–27.

Hamp, E. P. 1987. The ogam inscriptions and their geminate symbols. *Ériu,* 38, 45–72.

Hanley, K., M. a. Weaver & J. Monk 1995. *An archaeological survey of St Molaggas's Church Aghacross, Mitchelstown, Co. Cork,* Cork: Cork County Council.

Hannigan, K. & W. Nolan (eds.), 1994. *Wicklow: history and society: interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications.

Hanson, R.P.C. 1971. *English translation of the 'Confession' and the 'Letter to Coroticus' of Saint Patrick*, Nottingham.

Harbison, P. 1967. A decorated stone fragment from Terryglass, Co. Tipperary. *North Munster Antiquarian Journal,* 10(2), 108–11.

———— 1970. How old is Gallarus oratory? *Medieval Archaeology,* 14, 34–59.

———— 1972. The building-history of Ratass church. *Journal of the Kerry Archaeological and Historical Society,* 5, 5–13.

———— 1972. Some Romanesque heads from County Clare. *North Munster Antiquarian Journal,* 15, 3–7.

———— 1973. Some medieval sculpture in Kerry. *Journal of the Kerry Archaeological and Historical Society,* 6, 9–25.

———— 1974. Carved stone of the twelfth-century predecessor of St. Canice's Cathedral. *Old Kilkenny Review,* 26–9.

———— 1976. *The archaeology of Ireland* London: Bodley Head.

———— 1976. The double-armed cross on the church gable at Killinaboy, Co. Clare. *North Munster Antiquarian Journal,* 18, 3–13.

———— 1976. John Windele's visit to Skellig Michael in 1851. *Journal of the Kerry Archaeological and Historical Society,* 9, 125–48.

———— 1976. Tipperary Romanesque, in *Tipperary Remembers*, ed. W. J. Hayes Tipperary, 52-60.

———— 1977. On some possible sources of Irish High Cross decoration, in *Festschrift zum 50-jahrigen Bestehen des Vorgeschichtlichen Sminars Marburg*, eds. O. H. Frey & H. Roth Gladenbach, 283–97.

———— 1978. The Antrim Cross in the Hunt Museum. *North Munster Antiquarian Journal,* 20, 17–40.

———— 1978. *Irish art and architecture from prehistory to the present* London: Thames and Hudson.

———— 1979. The inscriptions on the Cross of the Scriptures at Clonmacnois, County Offaly. *Proceedings of the Royal Irish Academy Section C,* 79, 177–88.

———— 1980. A lost crucifixion plaque of Clonmacnoise type found in Co. Mayo, in *Irish midland studies: essays in commemoration of N.W. English*, ed. H. Murtagh Athlone: Old Athlone Society, 24–38.

———— 1981. The date of the Moylough Belt Shrine, in *Irish Antiquity: essays and studies presented to Professor M.J. O'Kelly* ed. D. Ó Corrain Dublin: Four Courts Press, 231–9.

———— 1981. Iconography on the Dysert and Kilfenora crosses: A Romanesque renaissance. *The Other Clare,* 5, 16–9.

———— 1982. Early Irish churches, in *Die Iren und Europa im fruheren Mittelater I*, ed. H. Lowe Stutgart: Klett Cotta, 618–29.

———— 1982. St. Doulagh's Church. *Studies,* 71, 27-42.

———— 1984. The Bronze Crucifixon Plaque said to be from St. John's (Rinnagan), near Athlone. *Journal of Irish Archaeology,* 2, 1–18.

————— 1984. Earlier Carolingian Narrative Iconography- Ivories, Manuscripts, Frescoes and Irish High Crosses. *Jahrbuch RGZM,* 31, 455–71.

————— 1985. Three miniatures in the Book of Kells. *Proceedings of the Royal Irish Academy Section C,* 85, 181–94.

————— 1986–1986. The Derrynaflan hoard ladle: Some parallels illustrated *Journal of Irish Archaeology,* 3.

————— 1987. The Carolingian Contribution to Irish Schulpture, in *Ireland and Insular Art, A.D. 500-1200*, ed. M. Ryan Dublin, 105–10.

————— 1987. Two Romanesque carvings from Rath Blathmaic and Dysert O'Dea, Co. Clare. *North Munster Antiquarian Journal,* 29, 7–11.

————— 1989. Early Irish reliquary-shrines in bronze and stone. *Wurzburger Diozesangeschichtsblatter,* 51, 37–50.

————— 1990–1991. Meath high-cross fragments-lost and found. *Ríocht na Mídhe,* 8(3), 134–44.

————— 1991. Early Christian antiquities at Clonmore, Co. Carlow. *Proceedings of the Royal Irish Academy Section C,* 91, 177–200.

————— 1991. *Pilgrimage in Ireland: the monuments and the people* London: Barrie & Jenkins.

————— 1992. *The high crosses of Ireland: an iconographical and photographic survey* Bonn: Habelt.

————— 1992. The Romanesque Passion Lintel at Raphoe, Co. Donegal, in *Decantations: a tribute to Maurice Craig*, ed. A. Bernelle Dublin, 72-7.

————— 1993. A high cross base from the Rock of Cashel and a historical reconsideration of the 'Ahenny group' of crosses. *Proceedings of the Royal Irish Academy Section C,* 93, 1–20.

————— 1994. Early Irish pilgrim archaeology in the Dingle Peninsula *World Archaeology,* 26, 90–103.

————— 1994. The extent of royal patronage on Irish High Crosses. *Studia Celtica Japonica,* 6, 77-105.

————— 1994. *Irish High Crosses with the figure sculpture explained,* Drogheda.

————— 1995. Architectural sculpture from the twelfth century at Ardmore. *Irish Arts Review Yearbook,* 11, 96-102.

————— 1995. The biblical iconography of Irish Romanesque architectural sculpture, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO, 271-80.

————— 1995. A Crucifixion Plque in Stone? *Archaeology Ireland,* 9(2), 11–2.

————— 1995. A medieval carved wooden altar support (?) from St. Patrick's Well, Clonmel. *Tipperary Historical Journal,* 8, 175–6.

————— 1996. The Limerick Area: Dysert O'Dea. *Archaeological Journal,* 153, 335–8.

————— 1997. *Ancient Irish monuments* Dublin: Gill & Macmillan.

————— 1998. A labyrinth on the twelfth-century High Cross base on the Rock of Cashel, Co. Tipperary. *Journal of the Royal Society of Antiquaries of Ireland,* 128, 107–11.

————— 1998. A shaft-fragment from Slane, Co. Meath and other recent high cross discoveries, in *Dublin and beyond the Pale: studies in honour of Patrick Healy*, ed. C. Manning Bray: Wordwell in association with Rathmichael Historical Society, 171-6.

————— 1998–1999. The holed high cross at Moone. *Journal of the Kildare Archaeological and Historical Society,* 18(4), 493–512.

————— 1999. The Clones sacrophagus. *Archaeology Ireland,* 13(3), 12–6.

————— 1999. *The golden age of Irish art: the medieval achievement, 600-1200* London: Thames and Hudson.

————— 1999. Regal (and other) Patronage in Irish Inscriptions of the Pre-Norman Period *Ulster Journal of Archaeology,* 58, 43–54.

————— 2000. An ancient pilgrimage 'relic-road' in North Clare? *The Other Clare,* 24, 55–9.

————— 2000. The church of Rath Blathmach—a photo-essay. *The Other Clare,* 24, 23–31.

————— 2000. Church reform and Irish monastic culture in the twelfth century. *Journal of the Galway Archaeological and Historical Society,* 52, 2–12.

————— 2000. *Cooper's Ireland: drawings and notes from an eighteenth-century gentleman* Dublin: O'Brien Press in association with the National Library of Ireland.

————— 2000. *The Crucifixion in Irish art: fifty selected examples from the ninth to the twentieth century* Dublin: Blackrock.

————— 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.

————— 2005. *A thousand years of church heritage in east Galway* Dublin: Ashfield Press.

Harbison, P. & L. Laing 1974. *Some Iron Age Mediterranean imports in England* Oxford: Tempus Reparatum.

Harbison, P. & J. Lynam 2002. *St. Kevin's Way, Hollywood to Glendalough, Co. Wicklow* Kilkenny: Heritage Council.

Harbison, P., H. Potterton & J. Sheehy 1993. *Irish art and architecture from prehistory to the present,* London Thames and Hudson.

Harden, D. B. 1956. Glass Vessels in Britain and Ireland, A.D. 400-1000, in *Dark Age Britain: Studies Presented to E.T. Leeds*, ed. D. B. Harden London.

————— 1984. (The Glass) Excavations on Cathedral Hill, Armagh [Gaskell Brown & Harper]. *Ulster Journal of Archaeology,* 47, 109–61.

————— 1984. Study and Research on Ancient Glass: Past and Future. *Journal of Glass Studies,* 26, 9–24.

Hare, M. & A. Hamlin 1986. The study of early Irish church architecture in Ireland: an Anglo-Saxon viewpoint with an appendix to documentary evidence for round towers, in *The Anglo-Saxon Church: papers on history,*

architecture, and archaeology in honour of Dr H.M. Taylor, eds. L. A. S. Butler & R. K. Morris London: Council for British Archaeology, 130–45.

Haren, M. & Y. de Pontfarey (eds.), 1988. *The Medieval Pilgrimage to St. Patrick's Purgatory: Lough Derg and the European Tradition,* Enniskillen: Clogher Historical Society.

Harper, A. E. T. 1972. The excavation of a rath in Mullaghbane Township, Co Tyrone *Ulster Journal of Archaeology,* 35, 37–44

–––– 1972. A souterrain at Cloughorr, Co Antrim *Ulster Journal of Archaeology,* 35, 59–61.

–––– 1973–1974. The excavation of a rath in Crossnacreevy Townland, County Down *Ulster Journal of Archaeology,* 36–37, 32–42.

–––– 1974–1975. The excavation of a rath in Crossnacreevy Townland, County Down *Ulster Journal of Archaeology,* 36–37, 32–41

Harper, S. 2001. So how many Irishmen went to Glyn Achlach? . *Cambridge Medieval Celtic Studies,* 42, 1–26.

Harrington, C. 2002. *Women in a Celtic Church. Ireland 450-1150,* Oxford: Oxford University Press.

Harrington, M. 1937. Find of skulls in Goldenfort, Co. Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 127.

Harris, D. C. 1938. Saint Gobnet, abbess of Ballyvourney. *Journal of the Royal Society of Antiquaries of Ireland,* 68, 272–7.

–––– 1939. St. Gobnet, Abbess of Ballyvourney (note). *Journal of the Royal Society of Antiquaries of Ireland,* 69, 177–8.

Harrison, S. H. 2001. Viking graves and grave-goods in Ireland, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 61–75.

Hartnett, P. J. 1952–1953. Recent archaeological finds from Connacht. *Journal of the Galway Archaeological and Historical Society,* 25(1 & 2), 15–27.

–––– 1954. Rossinver Church and Graveyard, Co. Leitrim (note). *Journal of the Royal Society of Antiquaries of Ireland,* 84, 180.

Hartnett, P. J. & G. Eogan 1964. Feltrim Hill, co. Dublin: A Neolithic and early Christian site. *Journal of the Royal Society of Antiquaries of Ireland,* 94(1-38).

Harvey, A. 1987. Early literacy in Ireland: the evidence from ogam. *Cambridge Medieval Celtic Studies,* 14, 1–15.

–––– 1990. The Ogham Inscriptions and the Roman Alphabet: Two Traditions or One? *Archaeology Ireland,* 4(1), 13–4.

Haseloff, G. 1987. Insular animal styles with special reference to Irish art in the early medieval period, in *Ireland and insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy, 44–55.

Hawkes, J. 1997. Columban Virgins: Iconic images of the Virgin and Child in insular sculpture, in *Studies in the cult of Saint Columba*, ed. C. Bourke Dublin: Four Courts Press, 107-35.

–––– 1997. Old Testament heroes: Iconographs of insular sculpture, in *The worm, the germ and the thorn: Pictish and related studies presented to Isabel Henderson*, ed. D. Henry Forfar: Pinkfoot Press, 149-58.

–––– 2001. An iconography of identity? The Cross-head from Mayo Abbey, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 149-58.

Hawkes, W. 1938. Early cross at Killerk, Co. Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 156–7.

Haworth, R. 1988. The site of St Olave's Church, Dublin, in *Settlement and Society in Medieval Ireland*, ed. J. Bradley Kilkenny: Boethus, 177–91.

Hayden, A. 1989. Report of excavations at Bakehouse Lane, Waterford (Unpublished), Dublin: The Heritage Service, Department of Environment.

–––– 1993. Report on archaeological test-trenching of a potential development site at Werburgh Street/Little Ship Street (Unpublished), Dublin: Dúchas, Department of Environment.

–––– 2000. West Side Story: archaeological excavations at Cornmarket and Bridge Street Upper, Dublin- a summary account, in *Medieval Dublin I : proceedings of the Friends of Medieval Dublin Symposium 1999* ed. S. Duffy Trinity College Dublin: Four Courts Press, 84–116.

–––– 2002. The excavation of pre-Norman defences and houses at Werburgh Street, Dublin, a summary, in *Medieval Dublin III : proceedings of the Friends of Medieval Dublin Symposium 2001* ed. S. Duffy Trinity College Dublin: Four Courts Press, 44–68.

Hayden, T. 1985–1986. Kildare Town, its ancient roads and streets. *Journal of the Kildare Archaeological and Historical Society,* 16(5), 479–83.

Hayes, J.W. 1972. *Late Roman Pottery*, British School at Rome, London.

Hayes, A. 1999. *A study of souterrains and unenclosed settlement on the Iveragh Peninsula, Co. Kerry,* (Unpublished M.A.) Cork: University College Cork.

–––– 2006. Archaeological investigation of a souterrain at Tateetra, Dundalk, County Louth, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 53–61.

Hayes-McCoy, G. A. 1970. The making of an O'Neill: a view of the ceremony at Tullaghoge, Co. Tyrone *Ulster Journal of Archaeology,* 33, 89–94.

Hayward, R. 1950. Loher Cross, Co. Kerry (note). *Journal of the Royal Society of Antiquaries of Ireland,* 80, 97.

Heckett, E. W. 1986. *A group of Hiberno-Norse silk and wool headcoverings from Fishamble St./St. John's Lane, Dublin,* (Unpublished M.A.)Cork: University College Cork.

———— 1991. Textiles in Archaeology. *Archaeology Ireland,* 5(2), 11–3.

Heinrichs, J. & A. O'Sullivan 1972. Clare architecture: past and present. *Dal gCais,* 1, 101–4.

Hemp, W. J. 1937. St. Kevin's Bed, Glendalough (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 290–4.

Hemp, W. J. & C. Gresham 1938. Hut platforms at Glendalough (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 280–2.

Hencken, H. O. N. 1936. Ballinderry Crannog no. 1. *Proceedings of the Royal Irish Academy Section C,* 48 Section C(5), 103–239.

———— 1937. The Danish kingdom of Limerick and Man. Extract from paper on a "Gaming Board of the Viking Age", Acta Archæologica IV (1933), Copenhagen. *North Munster Antiquarian Journal,* 1(2), 85.

———— 1938. *Cahercommaun: a stone fort in County Clare* Dublin: 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.

———— 1941–1942. Ballinderry Crannog no.2. *Proceedings of the Royal Irish Academy Section C,* 47 Section C, 1–76.

———— 1950–1951. Lagore Crannog: An Irish Royal Residence from the Seventh to Tenth Centuries (Contributions by Liam Price and Laura E. Start). *Proceedings of the Royal Irish Academy Section C,* 53 Section C(1), 1–247.

Henderson, G. 1987. *From Durrow to Kells. The Insular Gospel-Books, 650-800* London: Thames and Hudson.

Henderson, I. 1967. *The Picts* London: Thames and Hudson.

———— 1982. Pictish Art and the Book of Kells, in *Ireland in early medieval Europe: Studies in memory of Kathleen Hughes*, eds. D. Whitelock, R. McKitterick & D. N. Dumville Cambridge: Cambridge University Press, 79–105.

———— 1989. Françoise Henry and Helen Roe: fifty-five years' work on Irish art and archaeology. *Cambridge Medieval Celtic Studies,* 17, 69–74.

Henderson, J. 1993. 'Scientific analysis of the glass', *Medieval Archaeology* (37), 46-49.

Henderson, I. & G. Henderson 2004. *The Art of the Picts: Sculpture and Metalwork in Early Medieval Scotland,* London: Thames & Hudson.

Henderson, J. & Ivens, R.J. 1992. 'Dunmisk and glass-making in Early Christian Ireland', *Antiquity* (66), 52-64.

Henderson, I. & E. Okasha 1993. The Early Christian inscribed and carved stones of Tullylease, Co. Cork. *Cambridge Medieval Celtic Studies,* 24, 1–36.

———— 1997. The Early Christian Inscribed and Carved Stones of Tullylease, Co. Cork: Addendum. *Cambridge Medieval Celtic Studies,* 33, 9–18.

Henderson, J. 1988. Electron-microprobe investigation of early Irish glass and glass-making practices, in *Materials issues in art and archaeology: symposium held April 6-8, 1988, Reno, Nevada, USA, 1988* Reno, Navada, 141–6.

———— 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.

Henderson, J. 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 *Glass in Britain and Ireland AD350 - 1100,* ed. P. J. London: British Museum, 143–60.

Henderson, J. & R. Ivens 1992. Dunmisk and glass-making in early Christian Ireland. *Antiquity,* 66(250), 52.

Henry, F. 1936. Hanging bowls. *Journal of the Royal Society of Antiquaries of Ireland,* 66, 209–46.

———— 1937. Early Christian slabs and pillar stones in the West of Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 67, 265–79.

———— 1937. Figure in Lismore Cathedral (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 306–7.

———— 1937. Hanging bowls (addenda). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 130–1.

———— 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.

———— 1947. The antiquities of Caher Island (Co. Mayo). *Journal of the Royal Society of Antiquaries of Ireland,* 77, 23–38.

———— 1948. A bronze escutcheon found in the River Bann (note). *Journal of the Royal Society of Antiquaries of Ireland,* 78, 182–4.

———— 1948. Early Irish monasteries, boat-shaped oratories and beehive huts. *Journal of the Louth Archaeological and Historical Society,* 11(4), 296–304.

———— 1948. Three engraved slabs in the neighbourhood of Waterville (Kerry) and the cross on Skellig Michael (note). *Journal of the Royal Society of Antiquaries of Ireland,* 78, 175–7.

———— 1951. Habitation sites on Inishkea North, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 75–6.

———— 1951. New monuments from Inishkea North, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland,*

81, 65–9.

———— 1952. Megalithic and Early Christian Remains at Lankill, Co. Mayo (note). *Journal of the Royal Society of Antiquaries of Ireland,* 82, 68–71.

———— 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.

———— 1954. *Early Christian Irish art* Dublin: Colm O Lochlainn - At the Sign of the Three Candles, for the Cultural Relations Committee of Ireland.

———— 1956–1957. Early monasteries, beehive huts, and dry-stone houses in the neighbourhood of Caherciveen and Waterville Co. Kerry. *Proceedings of the Royal Irish Academy Section C,* 58, 45–166.

———— 1957. An Irish manuscript in the British Museum (Add. 40.618). *Journal of the Royal Society of Antiquaries of Ireland,* 87, 147–66.

———— 1960–1961. Remarks on the decoration of three Irish psalters, (British Museum, Cotton MS. Vitellius F.XI, St. John's College, Cambridge, MS. C.9 (I.59), Rouen, Bibliothèque Municipale, MS. 24 (A.41)). *Proceedings of the Royal Irish Academy Section C,* 61, 23–40.

———— 1962. The effects of the Viking invasions on Irish art, in *Proceedings of the international congress of Celtic Studies held in Dublin 6-10 July 1959*, ed. B. Ó Cuív Dublin: Dublin Institute for Advanced Studies, 61–72.

———— 1963. A cross at Durrow (Offaly). *Journal of the Royal Society of Antiquaries of Ireland,* 93, 83–4.

———— 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.

———— 1965. On some Early Christian objects in the Ulster Museum. *Journal of the Royal Society of Antiquaries of Ireland,* 95, 51–63.

———— 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.

———— 1980. Around an inscription: The Cross of the Scriptures at Clonmacnois. *Journal of the Royal Society of Antiquaries of Ireland,* 110, 36–46.

———— 1983. *Studies in early Christian and medieval Irish art. Vol.1, Enamels and metalwork,* London: Pindar.

———— 1985. *Studies in early Christian and medieval Irish art. Vol.3, Architecture and sculpture* London: Pindar.

Henry, F. & G. L. Marsh Micheli 1961–1963. A century of Irish illumination (1070–1170). *Proceedings of the Royal Irish Academy Section C,* 62, 101–64.

———— 1984. *Studies in early Christian and medieval Irish art. Vol.2, Manuscript illumination* London: Pindar.

Henry, F. & G. Zarnecki 1957-1958. Romanesque arches decorated with human and animal heads. *Journal of the British Archaeological Association,* 20-21, 1-34.

Heraughty, P. 1982. *Inishmurray, ancient monastic island,* Dublin.

Herbert, M. 1988. *Iona, Kells and Derry: The History and hagiography of the monastic familia of Columba,* Oxford: Oxford University Press.

———— 1999. Sea-divided Gaels? Constructing relationships between Irish and Scots c. 800-1169, in *Britain and Ireland 900-1300: Insular responses to Medieval European change*, ed. B. Smith Cambridge: Cambridge University Press, 87–97.

Herity, M. 1969. Irish Antiquarian Finds and Collections of the Early Nineteenth Century. *Journal of the Royal Society of Antiquaries of Ireland,* 99, 21–37.

Herity, M. 1970. Rathmulcah, Ware and Macfirbisigh *Ulster Journal of Archaeology,* 33, 49–53.

———— 1971. *Glencolumbkille: a guide to 5000 years of history in stone,* Dublin: UCD.

———— 1977. The High Island hermitage. *Irish University Review (UCD),* 52–69.

———— 1980. The Stival Bell (note). *Journal of the Royal Society of Antiquaries of Ireland,* 110, 162.

———— 1983. The buildings and layout of early Irish monasteries before the year 1000. *Monastic Studies,* 14(247-284).

———— 1983. A survey of the royal site of Cruachain in Connacht. 1 Introduction, the monuments and topography. *Journal of the Royal Society of Antiquaries of Ireland,* 113, 121–42.

———— 1987. The ornamented tomb of the saint at Ardoileán, Co. Galway, in *Ireland and Insular Art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985* ed. M. Ryan Dublin: Royal Irish Academy, 141–2.

———— 1987. A survey of the royal site of Cruachain in Connacht. III Ringforts and ecclesiastical sites. *Journal of the Royal Society of Antiquaries of Ireland,* 117, 125–41.

———— 1988. A survey of the royal site of Cruachain in Connacht. IV Ancient field systems at Rathcroghan and Carnfree. *Journal of the Royal Society of Antiquaries of Ireland,* 118, 67–84.

———— 1989. Cathair na Naomh and its cross-slabs. *Cathair Na Mart,* 9, 91–100.

———— 1989. Early Irish hermitages in the light of the lives of Cuthbert, in *St. Cuthbert, his cult and his community to A.D. 1200*, eds. G. Bonner, D. Rollason & C. Stancliffe Woodbridge: Suffolk, 45–64.

———— 1990. Carpet Pages and Chi-Rhos: some depictions in Irish early Christian manuscripts and stone carving. *Celtica,* 21, 208–22.

———— 1990. The hermitage on Ardoileán, County Galway. *Journal of the Royal Society of Antiquaries of Ireland,* 120, 65–101.

———— 1991. Early Christian sculpture at Ahenny and other sites (note). *Journal of the Royal Society of Antiquaries of Ireland,* 121, 171–2.

–––– 1993. Motes and mounds at royal sites in Ireland. *Journal of the Royal Society of Antiquaries of Ireland*, 123, 127–51.

–––– 1995. Early Christian Decorated slabs in Donegal: An Turas and the tomb of the founder Saint, in *Donegal: History and Society*, eds. W. Nolan, L. Ronayne & M. Dunlevy Dublin: Geography Publications, 25–50.

–––– 1995. *Studies in the layout, buildings, and art in stone of early Irish monasteries,* London: Pindar Press.

–––– 1995. 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.

Herity, M., D. Kelly & U. Mattenberger 1997. List of Early Christian cross slabs in seven north-western counties. *Journal of the Royal Society of Antiquaries of Ireland,* 127, 80–124.

Herren, M. W. 1998. Scholarly contacts between the Irish and the southern English in the seventh century. *Peritia,* 12, Scholarly contacts between the Irish and the southern English in the seventh century.

Heslip, R.J. 1984. 'The Coins', in C.G. Brown & A.E.T. Harper (eds.) 'Excavations on Cathedral Hill, Armagh, 1968', *Ulster Journal of Archaeology,* 47, 134.

Heslip, R. 1985. Reflections on Hiberno-Norse coinage *Ulster Journal of Archaeology,* 48, 25–30.

Hewson, L. M. 1938. "Bullaun stones", Rathlin Island, Co. Antrim (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 150–1.

Hewson, R. H. 1955. Notes on the old churches in Adare. *North Munster Antiquarian Journal,* 7(2), 53–6.

Hickey, E. 1952. Rath Lugh (note). *Journal of the Royal Society of Antiquaries of Ireland,* 82, 183–4.

–––– 1955. North Cross at Ahenny: a suggested interpretation (note). *Journal of the Royal Society of Antiquaries of Ireland,* 85, 118–21.

Hickey, E. & E. Rynne 1953. Two souterrains on the lower slopes of Tara. *Journal of the Kildare Archaeological and Historical Society,* 13(4), 220–2.

Hickey, H. M. 1972. A Romanesque arch and font at Wicklow. *Journal of the Royal Society of Antiquaries of Ireland,* 102, 97–104.

–––– 1973–1974. Excavation of an enclosure on Aughinish Island, Co. Limerick. *North Munster Antiquarian Journal,* 16, 14–28.

–––– 1976. *Images of Stone: Figure sculpture of the Lough Erne Basin,* Belfast: Blackstaff Press [for] the Arts Council of Northern Ireland.

Hicks, C. 1980. A Clonmacnois workshop in stone. *Journal of the Royal Society of Antiquaries of Ireland,* 108, 5–35.

–––– 1993. *Animals in early medieval art,* Edinburgh: Edinburgh University Press.

Hicks, R. 1974. Two cross-inscribed stones (note). *Journal of the Royal Society of Antiquaries of Ireland,* 104, 157–8.

Higgins, J. 1987. *The Early Christian Cross Slabs, Pillar Stones and Related Monuments of County Galway, Ireland,* Oxford: Tempus Reparatum.

–––– 1989. Early Christian & medieval sculptures. *Old Kilkenny Review,* 599–610.

–––– 1991. Some early Christian and medieval sculpture from Coolcashin, Co. Kilkenny. *Old Kilkenny Review,* 4(3), 599-610.

–––– 1992. An Early Christian cross-slab from Roscam, Co. Galway. *Journal of the Galway Archaeological and Historical Society,* 44, 209–12.

–––– 1993. A chi-rho decorated pebble from Kilcorban, County Galway (note). *Journal of the Royal Society of Antiquaries of Ireland,* 123, 164–5.

–––– 1993. An Early Christian site on Saint's Island, Lough Mask, Co. Mayo and its cross-slabs. *Cathair Na Mart,* 13, 53.

–––– 1995. A miniature Early Christian stone cross from Kilgeever, Co. Mayo. *Cathair Na Mart,* 15, 70–6.

–––– 1997. Turlough church, Co. Mayo. *Cathair Na Mart,* 17, 66–85.

Higgins, J. & M. Gibbons 1993. Early Christian monuments at Kilgeever, Co. Mayo. *Cathair Na Mart,* 13, 32–52.

Higgitt, J. (ed.) 1986. *Early medieval sculpture in Britain and Ireland* Oxford: Tempus Reparatum.

Hillgarth, J. N. 1961–1963. Visigothic Spain and Early Christian Ireland. *Proceedings of the Royal Irish Academy Section C,* 63, 167–94.

–––– 1984. Ireland and Spain in the seventh century. *Peritia,* 3, 1–16

Hodges, H. W. M. 1958. A Hunting Camp at Cullyhanna Lough, near Newtown Hamilton, County Armagh. *Ulster Journal of Archaeology,* 21, 7–13.

Hodges, R. 1975. Knockdhu promontory fortress: an interpretation of its function in the light of some preliminary fieldwork. *Ulster Journal of Archaeology,* 38, 19–24

Hodges, R. 1989. *Dark Age Economics: The origins of towns and trade: A.D. 600-1000,* Duckworth, London.

Hodges, R. 2004. 'The Shaping of Medieval north-western Europe', *Antiquity* (78), 723-727.

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.

–––– 1994. Excavations at Cormac's Chapel, Cashel, 1992 and 1993: a preliminary statement. *Tipperary Historical Journal,* 7, 167–74.

–––– 1995. The Rock of Dunamase. *Archaeology Ireland,* 9(2), 18–21.

–––– 2002. The topography of Pre-Norman Limerick. *North Munster Antiquarian Journal,* 42, 1–6.

Hogan, J. 1931–1932. The Irish law of kingship, with special reference to Ailech and Cenél Eoghain. *Proceedings of*

the Royal Irish Academy Section C, 40, 186–254.

———— 2001. *Basketmaking in Ireland,* Bray: Wordwell Press.

Holm, P. 1986. The Slave trade of Dublin, ninth to twelfth centuries. *Peritia,* 5, 317–45.

———— 1994. Between apathy and antipathy: the Vikings in Irish and Scandinavian history. *Peritia,* 8, 151–69

Holmes, W. J. 1970. New investigations at Liathmore-Mochoemog (Leigh). *Old Kilkenny Review,* 22, 29–31.

Holmquist, W. 1955. An Irish crozier-head found near Stockholm. *Antiquaries Journal,* 35, 46–51.

Horn, W., J. W. Marshall & G. D. Rourke 2002. *The forgotten hermitage of Skellig Michael* Dublin: Dúchas.

Hourihane, C. 2001. De Camino Ignis: the iconography of the three children in the fiery furnace in ninth century Ireland, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 61-82.

———— 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. 1940–1941. The early Christian Irish: the skeletons at Gallen Priory. *Proceedings of the Royal Irish Academy Section C,* 46, 103–219.

Howlett, D. 1995. The polyphonic colophon to Cormac's Psalter. *Peritia,* 9, 81–91

Hudson, B. T. 1979. The family of Harold Godwinsson and the Irish Sea Province. *Journal of the Royal Society of Antiquaries of Ireland,* 109, 92–100.

———— 1999. The Changing economy of the Irish sea province, in *Britain and Ireland 900-1300: Insular responses to Medieval European change*, ed. B. Smith Cambridge: Cambridge University Press, 39–68.

———— 2006. *Irish Sea Studies, 900-1200,* Dublin: Four Courts Press.

Hughes, E. 1970. Ullard. *Old Kilkenny Review,* 22, 58–61.

Hughes, J. J. 1956–1957. Clonamery Church. *Old Kilkenny Review,* 9, 27–31.

Hughes, K. 1958. The distribution of Irish scriptoria and centres of learning from 730 to 1111, in *Studies in the early British church* ed. N. K. Chadwick Cambridge: Cambridge University Press, 243–72.

———— 1966. *The Church in early Irish society,* London: Methuen Press.

———— 1977. *Early Christian Ireland: introduction to the sources,* Cambridge: Cambridge University Press.

———— 1981. The Celtic Church: is this a valid concept? *Cambridge Medieval Celtic Studies,* 1, 1–20.

———— 1987. *Church and society in Ireland, A.D. 400–1200 (edited by David Dumville),* London: Variorum.

———— 2005. The Church in Irish society, 400-800, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 301–30.

———— 2005. The Irish Church, 800-1050, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 635–55.

Hughes, K. & A. Hamlin 1977. *The modern traveller to the early Irish church,* London: S.P.C.K.

Hunt, J. 1949. Romanesque head from Peter's Cell. *North Munster Antiquarian Journal,* 6(1), 16–7.

———— 1951. Ballingarry Down, Ballingarry townland. *Journal of the Royal Society of Antiquaries of Ireland,* 51, 73.

———— 1951. The Cross of Muiredach, Monasterboice. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 44–7.

Hunter, J. 1981. The Medieval Glass Industry, in *Medieval Industry*, ed. D. W. Crossley London.

Hurl, D. 'Houses of the Holy: domestic architecture in Early Christian Ireland' Archeomaterials 7 (1993), 151-160.

Hurl, D. 'Excavation of an Early Christian cemetery at Solar, County Antrim' Ulster J Archaeol 61 (2004), 37-82.

Hurl, D. 'Excavation in Abbey Street, Armagh' Ulster J Archaeol 62 (2005), 97-115.

Hurley, M. F. 1988. Excavations at an early ecclesiastical enclosure at Kilkieran, County Kilkenny. *Journal of the Royal Society of Antiquaries of Ireland,* 118, 124–34.

———— 1988. Recent Archaeological Excavations in Waterford City. *Archaeology Ireland,* 2(1).

———— 1992. Late Viking Age Settlement in Waterford City, in *Waterford history and society*, eds. W. Nolan & T. P. Power Dublin: Geography Publications, 49–72.

———— 1995. The Vikings in Munster: evidence from Waterford and Cork. *Archaeology Ireland,* 9(3), 23–5.

Hurley, M. F. & R. M. Cleary 1997. *Excavations at the North Gate, Cork, 1994* Cork: Cork Corporation.

Hurley, M. F., O. M. B. Scully & S. W. J. McCutcheon 1997. *Late viking age and medieval Waterford: excavations 1986-1992 /Maurice F. Hurley, Orla M.B. Scully with Sarah W.J. McCutcheon ; based on excavations and stratigraphic reports by Andrew S.R. Gittins ... [et al.] ; editors: Terry Barry, Rose M. Cleary and Maurice F. Hurley,* Waterford: Waterford Corporation.

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 University Press, Galway.

Hynes, J. 1931. St. Caillin. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 39–54.

Inskeep, R. R. & V. B. Proudfoot 1957. Dunbeg: a small hill-fort in County Down *Ulster Journal of Archaeology,* 20, 103–13

Ireland, C. 1997. Penance and Prayer in Water: An Irish Practice in Northumbrian Hagiography. *Cambridge Medieval Celtic Studies,* 34, 51–66.

Irwin, L. 1983. The historiography of the twelfth century reform in Ireland. *North Munster Antiquarian Journal,* 25,

19–29.

–––– 2000. A nineteenth-century description of Kilpeacon Church. *North Munster Antiquarian Journal,* 40, 99–101.

Irwin, M. 1998. An Early Medieval church site at Kilbree Upper, Sheeaune, Westport, Co. Mayo. *Cathair Na Mart,* 18, 44–8.

Isler, H., H. Hasenfratz & T. O'Neill 1996. A sixth-century Irish headache cure and its use in a South German monastery. *Cephalalgia,* 16(8), 536–40.

Ivens, R. J. 1984. Killyliss Rath, County Tyrone (structure, finds, fullered iron sword). *Ulster Journal of Archaeology,* 47, 9–35.

–––– 1984. Movilla Abbey, Newtownards, County Down: excavations 1981 *Ulster Journal of Archaeology,* 47, 71–108.

–––– 1984. A note on Grass-marked pottery. *Journal of Irish Archaeology,* 2.

–––– 1985. Salvage excavation in the townland of Tully, Omagh, Co Tyrone (rath?) *Ulster Journal of Archaeology,* 48, 144–9.

–––– 1987. The Early Christian monastic enclosure at Tullylish, Co Down *Ulster Journal of Archaeology,* 50, 55–121.

–––– 1988. Secrets of a hilltop, in *Pieces of the Past: Archaeological excavations by the Department of the Environment for Northern Ireland, 1970-1986,* eds. A. Hamlin & C. J. Lynn Belfast: Belfast: HMSO.

–––– 1989. Dunmisk fort, Carrickmore, Co. Tyrone: Excavations 1984-1986 *Ulster Journal of Archaeology,* 51, 17–110.

–––– 1991–1992. Medieval pottery studies in Ulster: the future *Ulster Journal of Archaeology,* 54–55, 160–1.

Ivens, R. J. & D. D. A. Simpson 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, 61–8.

Jackman, N. 2007. Kilbegly Mill: Work in Progress. *Seanda: National Roads Authority Magazine,* 2, 34–5.

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,* 104–14.

Jackson, P. 1979–1980. The holy wells of Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 16(2), 133–61.

Jackson, R. W. 1939. Ecclesiastical Remains at Birchgrove, Roscrea (note). *Journal of the Royal Society of Antiquaries of Ireland,* 69, 46–7.

–––– 1976. Irish glass: beginnings to mid-nineteenth century. *North Munster Antiquarian Journal,* 18, 37–48.

James, E. 1982. Ireland and western Gaul in the Merovingian Period, in *Ireland and Early Medieval Europe: Studies in memory of Kathleen Hughes,* eds. D. Whitelock, R. McKitterick & D. N. Dumville Cambridge: Cambridge University Press, 362–86.

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.

Jankulak, K. & J. M. Wooding (eds.), 2007. *Ireland and Wales in the Middle Ages,* Dublin: Four Courts Press.

Jaski, B. 1995. The Vikings and the kingship of Tara. *Peritia,* 9, 310–53

–––– 1998. Early medieval Irish kingship and the Old Testament. *Early Medieval Europe,* 7(3), 329.

–––– 2000. *Early Irish kingship and Succession,* Dublin: Four Courts Press.

Jenkins, J. 2000–2001. Wexford, Weisford, Viksfjord, Wiksford: a different interpretation. *Journal of the Wexford Historical Society,* 18, 140–4.

Jessen, K. & H. Helbaek 1944. *Cereals in Great Britain and Ireland in Prehistoric and Early Historic Times* Copenhagen.

Johansen, O. 1973. Bossed Penannular Brooches. *Acta Archaeologica,* 64, 63–124.

Johnson, D. N. 1973. The Romanesque arch at Wicklow Church. *Journal of the Royal Society of Antiquaries of Ireland,* 103, 224–5.

Johnson, R. 1993. A group of Viking-age bone motifs from Fishamble Street, Dublin, in *Archaeology* (Unpublished M.A.) London: University College London.

–––– 1996. *An archaeological and art-historical investigation of the 'hiatus' in Irish art during the Viking invasions with reference to excavations at Ballinderry Crannog No. 1, Co. Westmeath and Dublin City 1962-81,* (Unpublished Phd.) Dublin: Trinity College Dublin.

–––– 1998. Irish crucifixion plaques-Viking Age or Romanesque? *Journal of the Royal Society of Antiquaries of Ireland,* 128, 95–106.

–––– 1999. Ballinderry Crannóg No. 1: A Reinterpretation. *Proceedings of the Royal Irish Academy Section C,* 99 Section C, 23–71.

–––– 2000. On the dating of some early medieval Irish croziers. *Medieval Archaeology,* 44, 115-58.

–––– 2002. Decorated Wood from Temple Bar West, Dublin, in *Medieval Dublin III : proceedings of the Friends of Medieval Dublin Symposium 2001* ed. S. Duffy Trinity College Dublin: Four Courts Press, 69–80.

Johnston, E. 1995. Transforming women in Irish hagiography. *Peritia,* 9, 197–220.

–––– 2000. Transforming women in Irish hagiography. *Peritia,* 14, 197–220.

–––– 2003. Early Irish history: the state of the art. *Irish Historical Studies,* 33(131), 342–8.

Johnston, P. 2000. Macroscopic plant remains from excavations at Temple Bar West (Unpublished), Dublin: Margaret Gowen and Company.

`

Johnston, R. 2000. On the dating of some early-medieval Irish crosiers. *Medieval Archaeology,* 44, 115–58.

Jones H.L. 1969. *The Geography of Strabo*, Harvard.

Jope, E. M. 1950. A Souterrain at Harryville, Ballymena, Co Antrim *Ulster Journal of Archaeology,* 13, 53.

–––– 1958. An Iron Spearhead of Germanic Type from Co Fermanagh *Ulster Journal of Archaeology,* 21, 16–7

Jope, E. M. & R. J. Ivens 1998. The Rath at Ballymacash, County Antrim. *Proceedings of the Royal Irish Academy Section C,* 98 Section C, 101–23.

Joyce, B. 1999. Early ecclesiastical site at Farburren, parish of Oughaval, Co. Mayo. *Cathair Na Mart,* 19, 86–97.

Kaftannikoff, L. 1946–1948. Discovery of the high cross at Kilfenora. *North Munster Antiquarian Journal,* 5(1).

–––– 1956. The high crosses of Kilfenora. *North Munster Antiquarian Journal,* 7(3), 29–30.

Karkov, C. E. 1995. Adam and Eve on Muiredach's Cross: presence, absence and audience, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO.

Karkov, C. E. & R. T. Farrell (eds.), 1991. *Studies in insular art and archaeology,* Ohio: Oxford.

Karkov, C. E. & J. Ruffing 1990–1991. The crannógs of Lough Ennell: a computer survey. *Ríocht na Mídhe,* 8(3), 105–13.

–––– 1992–1993. The settlement systems of Lough Ennell: the 1992 survey. *Ríocht na Mídhe,* 8(4), 53–61.

–––– 1997. The Southern Uí Néill and the political landscape of Lough Ennell. *Peritia,* 11, 336–58

Karkov, C. E., M. Ryan & R. Farrell (eds.), 1997. *The insular tradition* Albany: State University of New York Press.

Kavanagh, R. M. 1988. The horse in Viking Ireland, in *Settlement and Society in Medieval Ireland*, ed. J. Bradley Kilkenny: Boethus, 89–121.

Kealy, P. & J. Ryan 1973. Souterrain at Garryvoone, Co. Waterford *Old Kilkenny Review,* 25, 65–7.

Kearney, B. 2007. Feasting at Lughnasadh: A reconstruction of domestic space in early medieval Ireland. *Trowel,* 11, 71–9.

Kearney, J. & M. Kincaid 2006. A list of Offaly cemeteries. *Offaly Heritage,* 4, 255–70.

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. 1989–1991. Archaeological excavation of a burial ground, Greenhills Townland. *Journal of the Kildare Archaeological and Historical Society,* 17, 180–201.

–––– 1989–1991. Archaeological investigations on three Kildare motorway schemes. *Journal of the Kildare Archaeological and Historical Society,* 17, 168–71.

–––– 1989–1991. Excavation at the "Longstone", Kilgowan. *Journal of the Kildare Archaeological and Historical Society,* 17, 161–7.

Keenan, E., E. MacWhite & F. J. O'Rourke 1944. An extended burial at Fassaroe, Co. Wicklow. *Journal of the Royal Society of Antiquaries of Ireland*, 146–54.

Kelly, D. 1985. The capstones at Kilkieran, County Kilkenny (note). *Journal of the Royal Society of Antiquaries of Ireland,* 115, 160–2.

–––– 1986. Irish High Crosses: some evidence from the plainer examples *Journal of the Royal Society of Antiquaries of Ireland,* 126, 108–46.

–––– 1988. Cross-carved slabs from Latteragh, County Tipperary. *Journal of the Royal Society of Antiquaries of Ireland,* 118, 92–100.

–––– 1990–1991. Crucifixion Plaques in stone at Clonmacnoise and Kells. *Irish Arts Review Yearbook*, 204–9.

–––– 1991. Crucifixion Plaques in Stone at Clonmacnoise and Kells. *Irish Arts Review Yearbook*.

–––– 1991. The heart of the matter: models for Irish high crosses. *Journal of the Royal Society of Antiquaries of Ireland,* 121, 105–45.

–––– 1992. The high crosses of Ireland, a review article. *Journal of the Royal Society of Antiquaries of Ireland,* 122, 67–78.

–––– 1993. Some remains of high crosses in the West of Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 123, 152–63.

–––– 1994. Cross at Ogulla, County Roscommon (note). *Journal of the Royal Society of Antiquaries of Ireland,* 124, 213–4.

–––– 1995. The Virgin and Child in Irish sculpture, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO.

–––– 1996. A sense of proportion: the metrical and design characteristics of some Columban High Crosses. *Journal of the Royal Society of Antiquaries of Ireland,* 126, 108–46.

–––– 2000. The crosses of Tory Island, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Dublin: Four Courts Press, 53–63.

Kelly, E. P. 1977. A burial at Farganstown and Ballymacon, Co. Meath. *Ríocht na Mídhe,* 6(3), 65–7.

–––– 1977. A souterrain at Clongill, Co. Meath. *Ríocht na Mídhe,* 6(3), 62–4.

–––– 1978. A bog road at Crumlin, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 19(2), 143–4.

–––– 1982–1983. Three Kerry souterrains. *Journal of the Kerry Archaeological and Historical Society,* 15–16, 5–14.

–––– 1983. A Souterrain at Gallarus. *Journal of the Kerry Archaeological and Historical Society,* 15–16, 5–14.

–––– 1983. A souterrain at Knockmount, Co. Westmeath. *Ríocht na Midhe,* 7(2), 114–8.

–––– 1984. Two quernstones from Co. Meath. *Ríocht na Midhe,* 7(3), 105–11.

–––– 1985–1986. Objects found in the vicinity of a holy well at Bellewstown, Co. Meath. *Ríocht na Midhe,* 7 (4), 60–1.

–––– 1986. Ringed pins of County Louth. *Journal of the Louth Archaeological and Historical Society,* 21(2), 179–99.

–––– 1993. *Early Celtic art in Ireland,* Dublin Country house in association with the National Museum of Ireland.

–––– 1993. The Lough Kinsale Book Shrine, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 168-74.

–––– 1995. Vikings on the Barrow: Dunrally Fort, a possible Viking longphort in County Laois. *Archaeology Ireland,* 9(3), 30–2.

–––– 1998. A Viking Longphort near Athlunkard, Co. Clare. *Archaeology Ireland,* 12(4), 13–6.

–––– 2003. The Tully Lough Cross. *Archaeology Ireland,* 17(2), 9–10.

Kelly, E. P., B. Meehan, R. Ó Floinn, R. Read & P. F. Wallace 2006. *The Faddan More Psalter: A medieval manuscript discovered in County Tipperary, Ireland,* Bray: Wordwell.

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.

Kelly, F. 1997. *Early Irish Farming,* Dublin Institute for Advanced Studies, Dublin.

Kelly, J. G. 1985–1986. A petrographic note on two samples from St. Patrick's Cross, Cashel *Journal of Irish Archaeology,* 3.

Kelly, M. J. 1941. Three monasteries of Drogheda. *Journal of the Louth Archaeological and Historical Society,* 10(1), 25–41.

Kendrick, T. D. 1936. A decorated circular object from Co. Antrim (note). *Journal of the Royal Society of Antiquaries of Ireland,* 66, 190–1.

–––– 1939. Gallen Priory Excavations, 1934-5. *Journal of the Royal Society of Antiquaries of Ireland,* 69, 1–20.

Kendrick, T. D. & E. Senior 1937. St. Manchan's Shrine. *Archaeologia,* 86, 105-18.

Kenealy, M. 1986. The Antiquities of St. Patrick's parish. *Old Kilkenny Review,* 283–7.

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 Midhe,* 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 Midhe,* 7(4), 22–7.

–––– 1986–1986. 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 Section C,* 87, 507–25.

–––– 1989. Anglo-Saxon pennies from Moyvore, Co. Westmeath. *Ríocht na Midhe,* 8(2), 60–3.

–––– 1991. Coins and coinage in the Irish midlands during the Viking age, in *Studies in insular art and archaeology,* eds. R. Farrell & C. E. Karkov Ohio: Oxford, 111–6.

–––– 1991. Miscellanea 2: A Kufic coin fragment from Carrowreilly, Co. Sligo. *Journal of the Galway Archaeological and Historical Society,* 32, 170–3.

–––– 1994–1995. Saint Kieran's church and graveyard, Ballymaglasson, County Meath. *Ríocht na Midhe,* 9(1), 61–9.

–––– 2005. Coins and coinage in Pre-Norman Ireland, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland,* ed. D. Ó Cróinín Oxford: Oxford University Press, 842–51.

Kenny, N. 2006. Dingle's Minard Beach. *Archaeology Ireland,* 20(4), 16–20.

Kenward, H. K. & E. P. Allison 1994. A preliminary view of the insect assemblages from the early Christian rath site at Deer Park Farms, Northern Ireland, in *Environment and Economy in Anglo-Saxon England: Proceedings of a conference held at the Museum of London, 9-10 April, 1990,* ed. J. Rackham London: Council for British Archaeology Bowes Morrell House, 111 Walmgate, York.

Kenyon, K. 2001. St. Kevin's Monastery, Glendalough. *British Heritage,* 22(2), 34.

Kerr, T. R. 2007. *Early Christian settlement in North-West Ulster,* Oxford: Tempus Reparatum.

Kerrigan, A. 1987–1988. A ringfort in the I.D.A. Business Park, Dangan, Galway. *Journal of the Galway Archaeological and Historical Society,* 41, 142–4.

Keville, J. 1982. Aughagower. *Cathair Na Mart,* 2(1), 3–22.

–––– 1983. Aughagower. *Cathair Na Mart,* 3, 3–24.

–––– 1984. Aughagower. *Cathair Na Mart,* 4, 21–36.

Kilbride-Jones, H. E. 1935–1937. The evolution of penannular brooches with zoomorphic terminals in Great Britain and Ireland. *Proceedings of the Royal Irish Academy Section C,* 43, 379–455.

–––– 1939. Early Christian cemetery at Kilbride, near Bray, Co. Wicklow (note). *Journal of the Royal Society of*

Antiquaries of Ireland, 69, 173–6.

–––– 1980. *Zoomorphic Penannular Brooches: Reports of the Research Committe of the society of Antiquaries of London No. XXXIX,* London: Thames and Hudson.

–––– 1986. Early ecclesiastical art in Chorca Dhuibhne and its implications abroad. *North Munster Antiquarian Journal,* 28, 7–15.

–––– 1989. On some instances of Celtic art patterns inscribed on grave-slabs discovered at Carrowntemple, Co. Sligo, Ireland. *Bulletin of the Board of Celtic Studies,* 36, 230-8.

–––– 1992. On some origins in the ecclesiastical art of the early church in Celtic Ireland. *Bulletin of the Board of Celtic Studies,* 39, 299–314.

–––– 1994. Metalworking practices in early Ireland. *Archaeology Ireland,* 8(3), 19–21.

–––– 1995. Bagels, peacocks and Donegal. *Archaeology Ireland,* 9(2), 22–3.

–––– 1995. Early Christian symbolism with particular reference to objects of Irish provenance, interpretation and application, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April, 1994,* ed. C. Bourke Belfast: HMSO, 9–16.

Kilfeather, A. 2003. Legend and wetland landscape in Ireland. *Journal of Wetland Archaeology,* 3, 37–50.

Killanin, L. 1952–1953. Notes on some of the antiquities of the Barony of Ballynahinch, Co. Galway. *Journal of the Galway Archaeological and Historical Society,* 25(3 & 4), 92–103.

Killanin, M. M., Baron & M. V. Duignan 1989. The Shell guide to Ireland, in *The Shell guide to Ireland,* ed. P. Harbison Dublin: Gill and Macmillan, 340.

King, H. 1983. The Ardee Cross. *Journal of the Louth Archaeological and Historical Society,* 20(3), 210–4.

–––– 1987-1981. The medieval and seventeenth century carved stone collection in Kildare. *Journal of the Kildare Archaeological and Historical Society,* 17, 59-95.

–––– 1990. A report on archaeological test-trenching at Usher's Quay Dublin (Unpublished), Dublin.

–––– 1992. Excavations at Clonmacnoise. *Archaeology Ireland,* 6(3), 12–4.

–––– 1992. Moving Crosses. *Archaeology Ireland,* 6(4), 22–3.

–––– (ed.) 1994. *Clonmacnoise Studies: Seminar Papers Vol. 1,* Dublin: Wordwell.

–––– 1994. Prophets and evangelists (speaking from stone). *Archaeology Ireland,* 8(2), 9–10.

–––– 1997. Burials and high crosses at Clonmacnoise (Ireland), in *Death and burial in medieval Europe: papers of the medieval Europe Brugge 1997 Conference,* eds. G. de Boe & F. Vergaeghe Bruges, 127-31.

–––– (ed.) 1998. *Clonmacnoise studies: Seminar Papers Vol. 1,* Dublin: Wordwell.

–––– 1998–1999. Note on the restoration of the carved stone collection in Kildare Cathedral. *Journal of the Kildare Archaeological and Historical Society,* 18(4), 637.

–––– 2004. Excavation at the North Cross, Ballymore Eustace, Co. Kildare, in *Irish Art Historical Studies in honour of Peter Harbison,* ed. C. Hourihane Dublin: Four Courts Press, 165-74.

–––– 2005. Nobber's early medieval treasures revealed. *Archaeology Ireland,* 19(3), 21–4.

Kinsella, S. 2000. From Hiberno-Norse to Anglo-Norman, c. 1030-1300, in *Christ Church Cathedral, Dublin: A history,* ed. K. Milne Dublin: Four Courts Press, 25-52.

Kinvig, R. H. 1975. *The Isle of Man: a social, cultural, and political history* Liverpool: Liverpool University Press.

Kirwan, S. 1991. County Limerick. *Archaeology Ireland,* 5(1), 8–11.

Kitzinger, E. 1993. Interlace and icons: form and function in early insular art, in *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,* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 3–15.

Koch, J. T. 2003. Celts, Britons and Gaels: names, peoples and identities. *Transactions of the Honourable Society of Cymmrodorion,* 9, 41–56.

Krusch, B. (ed.) 1902. *Scriptores rerum Merovingicarum IV,* Societas Aperiendis Fontibus Rerum Germanicarum Medii Aevi, Hannover.

–––– 2007. *An Atlas for Celtic Studies: archaeology and names in ancient Europe and early medieval Ireland, Britain, and Brittany,* London: Oxbow Books.

La Niece, S. & C. Stapleton 1993. Niello and enamel on Irish metalwork. *Antiquaries Journal,* 73, 148-51.

Lacey, B. 1988. The development of Derry, c.600-1600, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. i. MacNiocaill & P. F. Wallace Galway: Galway University Press, 378–96.

–––– 1988. Donegal. *Archaeology Ireland,* 2(2), 48–52.

–––– 1995. Prehistoric and early historic settlement in Donegal, in *Donegal: History and Society,* eds. W. Nolan, L. Ronayne & M. Dunlevy Dublin: Geography Publications, 1–24.

–––– 1997. A lost Columban Turas in Derry. *Donegal Annual,* 49, 39–41.

–––– 1998. Columba, founder of the monastery of Derry?-'Mihi manet Incertus'. *Journal of the Royal Society of Antiquaries of Ireland,* 128, 35–47.

–––– 1999. County Derry in the early historic period, in *Derry and Londonderry: History and Society,* ed. G. O'Brien Dublin: Geography Publications, 115–48.

–––– 2001. The Grianán of Aileach - a note on its identification (note). *Journal of the Royal Society of Antiquaries of Ireland,* 131, 145–9.

–––– 2004. The Amrae Coluimb Cille and the Uí Néill. *Journal of the Royal Society of Antiquaries of Ireland,* 134,

169–72.

–––– 2006. *Cenél Conaill and the Donegal Kingdoms, A.D. 500-800,* Dublin: Four Courts Press.

Laing, L. 1975. *The Archaeology of Late Celtic Britain and Ireland c. 400-1200 A.D.,* London: Methuen & Co. Ltd. .

–––– 1976. *Ancient Scotland: a guide to the remains,* North Pomfret: Newton Abbot; North Pomfret, Vt: David and Charles.

–––– 1976. Penannular brooches in Ireland and Scotland *Ulster Journal of Archaeology,* 39, 15–9.

–––– (ed.) 1977. *Studies in Celtic survival* Oxford: Tempus Reparatum.

–––– 1979. *Anglo-Saxon England,* London: Routledge and Kegan Paul,.

–––– 1979. *Celtic Britain,* London: Routledge and Kegan Paul.

–––– 1985. The romanization of Ireland in the fifth century. *Peritia,* 4, 261–78

–––– 1987. *Later Celtic art in Britain and Ireland,* Aylesbury: Shire Archaeology.

–––– 1992. *Art of the Celts,* London: Thames and Hudson.

–––– 1993. *A catalogue of Celtic ornamental metalwork in the British Isles c AD400-1200,* Oxford: Tempus Reparatum.

–––– 2006. *The archaeology of Celtic Britain and Ireland: c. AD 400 - 1200,* Cambridge: Cambridge University Press.

Laing, L. & J. Laing 1990. *Celtic Britain and Ireland, AD 200-800: the myth of the Dark Ages,* Dublin: Academic Press.

–––– 1993. *Ancient art: the challenge to modern thought,* Blackrock: Irish Academic Press.

–––– 1995. *Celtic Britain and Ireland: art and society,* Dublin: Gill & MacMillan.

Laing, L & Longley, D. 2006. *The Mote of Mark: a Dark age hillfort in south-west Scotland*, Oxbow Books, Oxford.

Lalonde, S. & A. Tourunen 2007. Investigating social change through the animal and human remains from Carrowkeel, east Galway. *Archaeology Ireland,* 21(4), 36–8.

Lalor, B. 1999. *The Irish round tower: origins and architecture explored* Cork: Collins Press.

Lambert, P. Y., D. Ó Corrain, L. Breatnach & K. McCone (eds.), 1989. *Sages, saints and storytellers: Celtic Studies in honour of Professor James Carney,* Maynooth: An Sagart.

Lambkin, B. 1999. Blathmac and the Céili Dé: a reappraisal. *Celtica,* 23, 132–54.

Lane, P. d. G. & W. Nolan (eds.), 1999. *Laois: history & society: interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications.

Lang, J. 1988. *Viking age decorated wood: a study of its ornament and style,* Dublin: Royal Irish Academy.

–––– (ed.) 1991. *Corpus of Anglo-Saxon Stone Sculpture, III. York and Eastern Yorkshire,,* Oxford: Published for the British Academy by the Oxford University Press.

–––– 1997. Survival and revival in insular art: some principles, in *Insular tradition*, eds. C. E. Karkov, M. Ryan & R. Farrell New York: State University of New York Press, 63–77.

–––– (ed.) 2002. *Corpus of Anglo-Saxon Stone Sculpture, Volume VI: Northern Yorkshire,* London: Oxford: Published for the British Academy by the Oxford University Press.

Lang, J. T. 1971. The Castledermot hogback. *Journal of the Royal Society of Antiquaries of Ireland,* 101, 154–8.

–––– 1986. Principles of Design in Free-style carving in the Irish Sea Province: c.800 toc.900, in *Early Medieval Sculpture in Britain and Ireland*, ed. J. Higgitt Oxford: Oxford University Press, 153–74.

–––– 1988. Some units of measurement in insular art, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. Mac Niocaill & P. F. Wallace Galway: Galway University Press.

Lanigan, K. M. 1967. Kilmurry. *Old Kilkenny Review,* 19, 69–74.

Lanigan-Wood, H. & E. Verling 1995. Stone sculpture in Donegal, in *Donegal: History and Society*, eds. W. Nolan, L. Ronayne & M. Dunlevy Dublin: Geography Publications, 51–84.

Lanting, J. N. & A. L. Brindley 1996. Irish logboats and their European context. *Journal of Irish Archaeology,* 7.

Larsen, A. 2001. The Exhibition: The Vikings in Ireland, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 127–48.

–––– (ed.) 2001. *The Vikings in Ireland,* Roskilde: The Viking Ship Museum.

Larsen, A. & S. S. Hansen 2001. Viking Ireland and the Scandinavian Communities in the North Atlantic, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Vikings Ship Museum, 115–26.

Lavelle, D., J. Jones & L. Morahan 1994. *An archaeological survey of Ballinrobe and district,* Ballinrobe: Lough Mask and Lough Carra Tourism development association.

Lawless, C. 1992. Lough More, Bofeenaun, Co. Mayo. Crannóg; fulachta fiadh; deer traps and associated archaeological sites. *Cathair Na Mart,* 12, 13–31.

–––– 1993. Carrowmacloughlin ancient settlement, Turlough, Co. Mayo, cashel, ringfort, and hut sites. *Cathair Na Mart,* 13, 53–71.

–––– 1996. Levallinree Townland and Lough, an ancient citadel. Fulachta fiadh; crannógs; dugout canoes; ringforts; hut-sites, St. Patrick's Stone; mill and mill-race and Famine Gardens. *Cathair Na Mart,* 16, 17–44.

–––– 1998. An ancient horizontal mill at Ballygarriff, Turlough, Co. Mayo [with catalogue of horizontal and vertical water-powered corn-mills in Turlough]. *Cathair Na Mart,* 18, 61–76.

–––– 1999. Bunduvowen and Garrison Island, the northern bastion of the Turlough landscape, Co. Mayo. Island cashel; dugout canoes; megalithic structure; ancient village; hut sites; mills; children's burial ground.

Cathair Na Mart, 19, 105–36.

–––– 2001. The landscape and heritage of Turlough, Co. Mayo. *Cathair Na Mart,* 21, 78–102.

–––– 2003. Bullaun stone and children's burial ground on Cruach na Cille, Cunnagher South, Turlough, Co. Mayo. *Cathair Na Mart,* 23, 119–27.

Lawless, C., R. Ó Floinn, M. G. L. Baillie & D. Browne 1989. Levallinree Crannóg, an early 7th-Century lake dwelling in Co. Mayo. *Cathair Na Mart,* 9, 21–5.

Lawlor, H. C. 1930–1931. Some tentative deductions arising from the study of Three ancient monuments in Northern Ireland- the holestone. *Irish Naturalists Journal,* 3, 105–9.

–––– 1932. Objects of archæological interest in the Loch Neagh and River Bann Drainage Scheme. *Journal of the Royal Society of Antiquaries of Ireland,* 62, 214–9.

–––– 1935–1937. Dunluce and its owners prior to the Norman invasion. *Proceedings of the Royal Irish Academy Section C,* 43, 307–11.

–––– 1938. An ancient route - the Slighe Miodhluachra in Ulaidh *Ulster Journal of Archaeology,* 1, 3–7.

Leask, H. G. 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, 130–6.

–––– 1933. Church at Ardpatrick, Co. Louth (note). *Journal of the Louth Archaeological and Historical Society,* 8(1), 98–9.

–––– 1933. Rathmore Church, Co. Meath. *Journal of the Royal Society of Antiquaries of Ireland,* 63, 153–66.

–––– 1935. Carved stones discovered at Kilteel, Co. Kildare. *Journal of the Royal Society of Antiquaries of Ireland,* 65, 1–8.

–––– 1936. *The characteristic features of Irish architecture from early times to the twelfth century,* Limerick: Limerick Leader.

–––– 1937. St. Mochta's House, Louth. *Journal of the Louth Archaeological and Historical Society,* 9(1), 32–5.

–––– 1938. Rahan, Offaly; the larger church. *Journal of the Kildare Archaeological and Historical Society,* 12(3), 111–4.

–––– 1941. Ancient objects in bogs. *Journal of the Louth Archaeological and Historical Society,* 10(1), 80–1.

–––– 1941. The ancient walls of Limerick. *North Munster Antiquarian Journal,* 2(3), 95–108.

–––– 1941. Souterrain at Mullameelan, Ardee. *Journal of the Louth Archaeological and Historical Society,* 10(1), 70–1.

–––– 1943. Killoughternane Church, Co. Carlow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 73, 98–100.

–––– 1945. Mellifont Abbey. *Journal of the Louth Archaeological and Historical Society,* 11(1), 28–33.

–––– 1945. St. Mochta's House [note]. *Journal of the Louth Archaeological and Historical Society,* 11(1), 63.

–––– 1950. *Glendalough, co. Wicklow, National Monuments: Official historical and descriptive guide,* Dublin.

–––– 1951. St. Patrick's Cross, Cashel, Co. Tipperary. An enquiry into its original form. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 14–8.

–––– 1955. *Irish churches and monastic buildings. Vol.1, The first phases and the romanesque (Reproduced 1977),* Dundalk: Dundalgan Press.

Leask, H. G. & R. A. S. Macalister 1945–1948. Liathmore-Mochoemóg (Leigh), County Tipperary. *Proceedings of the Royal Irish Academy Section C,* 51, 1–14.

Leeds, E. T. 1933. *Celtic ornament in the British Isles down to A.D. 700* Oxford: Clarendon Press.

Legg, R. J. & D. Taylor 2006. Modeling environmental influences on the locations of Irish early medieval ringforts. *Geoarchaeology,* 21(3), 201–20.

Lenihan, E. 1992. The holy wells of Inchicronan parish. *The Other Clare,* 16, 27–30.

–––– 1994. The holy wells of Doora-Barefield parish. *The Other Clare,* 18, 43–8.

–––– 1997. The holy wells of Kilshanny Parish. *The Other Clare,* 21, 52–7.

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.

–––– 2006. Excavation of a ringfort at Leggetsrath West, County Kilkenny in *Settlement, industry and ritual : proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 43–52.

Lewis, A.R. 1951. *The Northern Seas: Shipping and Commerce in Northern Europe A.D. 300-1100,* Princeton.

Liestol, A. 1952. The Hanging Bowl, a liturgical and domestic vessel. *Acta Archaeologica,* 24, 163–70.

Limbert, D. 1996. Irish Ringforts: A Review of Their Origins. *The Archaeological Journal,* 153, 243 89.

Linnane, S. 2007. Fort Baronstown? Exploring the social role of an impressive ringfort on the M3. *Seanda: National Roads Authority Magazine,* 2, 57–9.

Lionard, P. 1960–1961. Early Irish grave slabs. *Proceedings of the Royal Irish Academy Section C,* 61, 95–169.

Little, G. A. 1951. The Provenance of the church of St. Michael le Pole. *Dublin Historical Record,* 12(1), 2–13.

–––– 1957. *Dublin before the Vikings, an adventure in discovery,* Dublin: M. H. Gill.

Liversage, G. D. 1967–1968. Excavations at Dalkey Island, Co. Dublin 1956–1959. *Proceedings of the Royal Irish Academy Section C,* 66, 53–233.

Logan, P. 1980. *The holy wells of Ireland* Gerrards Cross: Smythe.

Lohan, K. 1997. The archaeological model of the royal sites: some historical implications. *Trowel,* 8, 24–8.

Lomas-Clarke, S. H. & K. E. Barber 2004. Palaeoecology of human impact during the historic period: palynology and geochemistry of a peat deposit at Abbeyknockmoy, Co. Galway, Ireland. *Holocene,* 14(5), 721–31.

Long, H. 1992. Dún Aonghasa. *Journal of the Galway Archaeological and Historical Society,* 44, 11–28.

Lott, B. M. 1941. Survey of ancient monuments, Additions and corrections *Ulster Journal of Archaeology,* 4, 139–44

Lowry-Corry, L. D. 1932–1934. The stones carved with human effigies on Boa Island and on Lustymore Island in Lower Lough Erne. *Proceedings of the Royal Irish Academy Section C,* 41, 200–4.

–––– 1934. The sculptured crosses of Galloon. *Journal of the Royal Society of Antiquaries of Ireland,* 64, 165–76.

–––– 1935. Holywell Church, near Lough Macnean. *Journal of the Royal Society of Antiquaries of Ireland,* 65, 223–30.

–––– 1935. The Market Cross at Lisnaskea (note). *Journal of the Royal Society of Antiquaries of Ireland,* 65, 153–6.

–––– 1935. The sculptured stones at Killadeas. *Journal of the Royal Society of Antiquaries of Ireland,* 65, 23–33.

–––– 1936. St. Molaise's House at Devenish, Lough Erne, and its sculptured stones. *Journal of the Royal Society of Antiquaries of Ireland,* 66, 270–84.

–––– 1938. Templenaffrin Church, Co. Fermanagh *Ulster Journal of Archaeology,* 1, 25–32

–––– 1959. A newly discovered statue at the church on White Island, Co Fermanagh. *Ulster Journal of Archaeology,* 22, 59–66

Lowry-Corry, L. D. & P. Richardson 1937. Megalithic monuments in the parish of Killinagh, Co. Cavan. With notes on some in the parish of Killesher, Co. Fermanagh. *Journal of the Royal Society of Antiquaries of Ireland,* 67, 155–75.

Loyn, H. R. 1976. *The Vikings in Wales: the Dorothea Coke memorial lecture in northern studies delivered at University College, London, 2 March 1976* London: Viking Society for Northern Research for the College.

Lucas, A. T. 1951. The West Cross at Monasterboice: a note and a suggestion. *Journal of the Louth Archaeological and Historical Society,* 12(3), 123–5.

–––– 1952. A block-wheel car from Co. Tipperary. *Journal of the Royal Society of Antiquaries of Ireland,* 82, 135–44.

–––– 1953. The horizontal mill in Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 83, 1–36.

–––– 1954. Penal crucifixes *Journal of the Louth Archaeological and Historical Society,* 13(2), 39.

–––– 1955. A horizontal mill at Ballykilleen, Co. Offaly. *Journal of the Royal Society of Antiquaries of Ireland,* 85, 100–13.

–––– 1956. Footwear in Ireland. *Journal of the Louth Archaeological and Historical Society,* 13(4), 309–94.

–––– 1958.

–––– 1965. Washing and bathing in ancient Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 95, 65–114.

–––– 1966. Irish-Norse relations: time for a reappraisal? *Journal of the Cork Historical and Archaeological Society,* 71, 62–75.

–––– 1967. The Plundering and burning of churches in Ireland, 7th to 16th century, in *North Munster Studies: Essays in commemoration of Monsignor Michael Moloney,* ed. E. Rynne Limerick: Thomond Archaeological Society, 172–229.

–––– 1968. Irish-Norse Relations. *Journal of the Wexford Historical Society,* 1, 17–9.

–––– 1969. A horizontal mill at Knocknagranshy. Co. Limerick. *North Munster Antiquarian Journal,* 12, 12–22.

–––– 1971–1973. Souterrains: the literary evidence. *Béaloideas,* 39–41, 165–91.

–––– 1972. Irish ploughing practices. *Tools and Tillage,* 2, 52–62.

–––– 1972. Prehistoric block-wheels from Doogarymore, Co. Roscommon, and Timahoe East, Co. Kildare. *Journal of the Royal Society of Antiquaries of Ireland,* 102, 19–48.

–––– 1973. *Treasures of Ireland: Irish pagan & early Christian art* Dublin: Gill and MacMillian.

–––– 1985. Toghers or causeways: some evidence from archæological, historical and place-name sources. *Proceedings of the Royal Irish Academy Section C,* 85, 37–60.

–––– 1986. The social role of relics and reliquaries in ancient Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 116, 5–37.

–––– 1986. A two-chute horizontal mill at Newtown, Co. Tipperary. *North Munster Antiquarian Journal,* 28, 16–27.

–––– 1989. *Cattle in ancient Ireland,* Kilkenny: Boethius Press.

Lucy, S. 1994. Children in early medieval cemeteries. *Archaeological review from Cambridge,* 13(2), 21–35.

Lucy, S. & A. Reynolds 2002. *Burial in Early Medieval England and Wales,* London: The Society for Medieval Archaeology.

Lydon, J. 2001. Dublin in transition: from Ostman town to English borough, in *Medieval Dublin II : proceedings of the Friends of Medieval Dublin Symposium 2000* ed. S. Duffy Trinity College Dublin: Four Courts Press, 128–41.

Lynch, A. 1983. Excavations at the base of St. Patrick's Cross, Cashel. *North Munster Antiquarian Journal,* 25, 9–18.

Lynch, A. & M. Cahill 1976–1977. The excavation of St. Vogues well & dolmen (site of), at Carnsore, Co. Wexford. *Journal of the Wexford Historical Society,* 6, 55–60.

Lynch, A. & C. Manning 1990. Dublin Castle- The Archaeological Project. *Archaeology Ireland,* 4(2), 65–9.

–––– 1990. Dublin Castle- The Archaeological Project. *Archaeology Ireland,* 4(2), 65–8.

Lynch, M. 2003. Another decorated stone at Rath Blathmach church. *The Other Clare,* 18.

Lyne, G. J. 1989. The pattern of Kilmakilloge. *Journal of the Kerry Archaeological and Historical Society*, 22, 5–34.
–––– 1990. Kilmakilloge: its patron saint and antiquities. *Journal of the Kerry Archaeological and Historical Society*, 23, 69–90.
Lyng, T. G. 1946–1947. Ballyraggett and district. *Old Kilkenny Review*, 1, 11–24.
–––– 1954. Kilgory. *North Munster Antiquarian Journal*, 7, 41– 5.
–––– 1956–1957. Ballyragget and district. *Old Kilkenny Review*, 9, 32–41.
Lynn, C. J. 1975. The dating of Raths: an orthodox view. *Ulster Journal of Archaeology*, 38, 45–7.
–––– 1975. Excavation in the Franciscan friary church, Armagh *Ulster Journal of Archaeology*, 38, 61–80.
–––– 1975. The medieval ringfort– an archaeological chimera? *Irish Archaeological Research Forum*, 29, 29–36.
–––– 1978. Early Christian period domestic structures: a change from round to rectangular plans? *Irish Archaeological Research Forum*, 5, 29–45.
–––– 1978. A note on the excavation of an earthwork at Ballygortgarve, County Antrim *Ulster Journal of Archaeology*, 41, 75–7
–––– 1978. A rath in Seacash Townland, County Antrim *Ulster Journal of Archaeology*, 41, 55–74
–––– 1979. A destroyed souterrain on Bonfire Hill, Ballyhornan, County Down. *Ulster Journal of Archaeology*, 42, 88.
–––– 1980. A destroyed rath in Lismurphy townland, county Derry *Ulster Journal of Archaeology*, 43, 75–8.
–––– 1981–1982. The excavation of Rathmullan, a raised rath and motte in County Down'. *Ulster Journal of Archaeology*, 44–45 65–171.
–––– 1982. *The construction, context and use of round houses in early Christian Ireland,* (Unpublished M.A.) Dublin: University College Dublin.
–––– 1983. An Early Christian period site in Ballybrolly, County Armagh (enclosure, two ?linked circular structures). *Ulster Journal of Archaeology*, 46, 47–51.
–––– 1983. An enclosure at Farrest, County Tyrone. *Ulster Journal of Archaeology*, 46, 154–8.
–––– 1983. Some early ringforts and crannogs. *Journal of Irish Archaeology*, 1, 47–58.
–––– 1983. Some early ring-forts and crannógs. *Journal of Irish Archaeology*, 1.
–––– 1983. 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.
–––– 1985. Excavations on a mound at Gransha, County Down, 1972 and 1982: an interim reports. *Ulster Journal of Archaeology*, 81, 81–90.
–––– 1985–1986. Lagore, county Meath and Ballinderrry No. 1, county Westmeath crannogs: Some possible structural reinterpretations. *Journal of Irish Archaeology*, 3.
–––– 1986. *Houses and related outbuildings in Early Christian Ireland,* (Unpublished Phd.) Dublin: University College Dublin.
–––– 1987. Deer Park Farms. *Current Archaeology*, 113.
–––– 1987. Deer Park Farms, Glenarm, Co. Antrim. *Archaeology Ireland*, 1(1), 11–5.
–––– 1988. Excavations at 46-48 Scotch Street, Armagh, 1979-80. *Ulster Journal of Archaeology*, 51, 69–84.
–––– 1988. A note on the excavation of an early Christian period settlement in Deer Park Farms, Glenarm, 1984–1987. *The Glynns*, 16, 3–16.
–––– 1989. Deer Park Farms: a visit to an Early Christian settlement'. *Current Archaeology*, 113, 193–8.
–––– 1991. Early Medieval Houses, in *The Illustrated Archaeology of Ireland*, ed. M. Ryan Dublin: Town House and Country House, 126–31.
–––– 1994. Houses in rural Ireland, A. D. 500-1000 *Ulster Journal of Archaeology*, 57, 81–94.
–––– 1996. Muiredach's Cross: Dextra Dei and divine Bulls. *Archaeology Ireland,* 10(4), 18–9.
–––– 2003. Ireland in the Iron Age- A basket case? *Archaeology Ireland*, 17(2), 20–3.
–––– 2005. Settlement and Disease: a plague on your raths. *Archaeology Ireland,* 19(4), 14–7.
Lyons, P. 1937. Three-ringed fort at Clonacody, Co. Tipperary (note). *Journal of the Royal Society of Antiquaries of Ireland*, 67, 126–7.
–––– 1948. Double-bullaun at Park, parish of Rathgormuck, Co. Waterford (note). *Journal of the Royal Society of Antiquaries of Ireland*, 78, 178.
–––– 1952. The Irish quern (note). *Journal of the Royal Society of Antiquaries of Ireland*, 82, 183.
Lyttleton, J. 1996. A rune inscribed cross fragment from Killaloe. *Trowel*, 7, 38–40.
–––– 1998. Loughpark 'crannog' revisited. *Journal of the Galway Archaeological and Historical Society,* 50, 151–83.
Mac An Abhluaird, R. 1975. *The Ogam alphabet* Dublin: 4 Ardán Thobar Ní, Rinn na Mara, Dublin: The author.
Mac Eoin, G. 1999. Old Irish briugu `hospitaller' and connected words. *Celtica*, 23, 169–73
Mac Eoin, G. I. 1978. The Craggaunowen crannog: Some literary evidence. *North Munster Antiquarian Journal,* 20, 52–6.
Mac Giolla Easpaig, D. 1995. Place-names and early settlement in county Donegal, in *Donegal: History and County*, eds. W. Nolan, L. Ronayne & M. Dunlevy Dublin: Dublin: Templogue, Geography Publications, 149–82.
Mac Íomhair, D. 1949. Historical notes on the townlands of Drakestown and Kilpatrick; supplementary notes on Rathlust, Anaglog and Hunterstown [also miscellaneous records, baptisms, marriages and deaths, and deeds]. *Journal of the Louth Archaeological and Historical Society,* 12(1), 21–81.
–––– 1951. Historical notes on Paughanstown, Roestown, and Hacklim, including supplementary notes on Anaglog, Hunterstown and Drakestown (County Louth Archaeological Journal, XI, 2 & XII, 1). *Journal of the Louth*

Archaeological and Historical Society, 12(3), 129–96.

—— 1964. Note on the Jumping Church. Journal of the Louth Archaeological and Historical Society, 15(4), 356.

Mac Lochlainn, A. 1956. Irish manuscripts at Liverpool. Celtica, 3, 217–38

Mac Mathúna, L. 1999. Irish perceptions of the Cosmos. Celtica, 23, 174–87

Mac Shamhráin, A. 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.

—— 1991. Placenames as Indicators of Settlement. Archaeology Ireland, 5(3), 19–21.

Mac Shamhráin, A. 1984. A destroyed rath of the Townland of Belcamp, Co. Dublin (note). Journal of the Royal Society of Antiquaries of Ireland, 114, 141.

Mac Shamhráin, A. S. 1993. 'The Uí Muiredaig and the abbacy of Glendalough in the eleventh to thirteenth centuries'. Cambridge Medieval Celtic Studies, 25, 55–75.

—— 1996. Church and Polity in Pre-Norman Ireland: The case of Glendalough, Maynooth: Cardinal Press.

—— 2000. Nebulae discutiuntur? The emergence of Clann Cholmáin, sixth-eighth centuries, Dublin: Four Courts Press.

Macalister, R. A. S. 1930. The ogham inscription of Hook Point, Co. Wexford. Journal of the Royal Society of Antiquaries of Ireland, 60, 52–5.

—— 1931–1932. Note on the Runic inscription at Killaloe. Abstract of Minutes, Session 1930-31. Proceedings of the Royal Irish Academy Section C, 40, 2–4.

—— 1932. An ancient road in the Bog of Allen. Journal of the Royal Society of Antiquaries of Ireland, 62, 137–41.

—— 1932. Ogham graffiti. Journal of the Royal Society of Antiquaries of Ireland, 62, 223.

—— 1932. The panel representing the Traditio Evangelii on the Cross of Muiredach at Monasterboice. Journal of the Royal Society of Antiquaries of Ireland, 62, 15–8.

—— 1934. The ancient inscriptions of Kells. Journal of the Royal Society of Antiquaries of Ireland, 64, 16–21.

—— 1935. The ogham inscription from Fox's Castle, Co. Waterford (note). Journal of the Royal Society of Antiquaries of Ireland, 65, 149–50.

—— 1935. A Sculptured Stone Figure from Tanderagee (note). Journal of the Royal Society of Antiquaries of Ireland, 65, 156–8.

—— 1935–1937. The excavation of Kiltera, Co. Waterford. Proceedings of the Royal Irish Academy Section C, 43, 1–16.

—— 1937. The ogham inscriptions at Kilfountain and Ballymorereigh (St. Manchan's) in the Dingle Peninsula. Journal of the Royal Society of Antiquaries of Ireland, 67, 221–8.

—— 1937. The Secret Languages of Ireland, Cambridge: Cambridge University Press.

—— 1937–1938. The Ogham inscription at Maumanorig, Co. Kerry. Proceedings of the Royal Irish Academy Section C, 34, 241–7.

—— 1937–1938. On an excavation conducted on Cro-Inis, Loch Ennell. Proceedings of the Royal Irish Academy Section C, 44, 248–52.

—— 1938. The Lismore corbel (note). Journal of the Royal Society of Antiquaries of Ireland, 68, 298–300.

—— 1942. A new Ogham inscription [Rathduff, Co. Kerry] (note). Journal of the Royal Society of Antiquaries of Ireland, 72, 76.

—— 1943. A lost Glendaloch inscription rediscovered (note). Journal of the Royal Society of Antiquaries of Ireland, 73, 67–9.

—— 1943. Two ringforts submerged by the Poulaphuca reservoir (note). Journal of the Royal Society of Antiquaries of Ireland, 73, 145–9.

—— 1945. Corpus inscriptionum insularum celticarum (preface by Damian McManus), Blackrock: Four Courts Press.

—— 1946. Monasterboice, Co. Louth., Dundalk: W. Tempest.

—— 1947. A monumental cross-slab at Tomgraney, Co. Clare (note). Journal of the Royal Society of Antiquaries of Ireland, 77, 156.

—— 1949. Corpus inscriptionum insularum celticarum Dublin: Stationery Office.

Macalister, R. A. S. & R. L. Praeger 1931–1932. The excavation of an ancient structure on the townland of Togherstown, Co. Westmeath. Proceedings of the Royal Irish Academy Section C, 40, 54–83.

MacDermott, M. 1950. Terminal mounting of a drinking-horn from Lismore, Co. Waterford (note). Journal of the Royal Society of Antiquaries of Ireland, 80, 262.

—— 1954. An openwork crucifixion plaque from Clonmacnoise. Journal of the Royal Society of Antiquaries of Ireland, 84, 36–40.

—— 1955. The Kells Crozier. Archaeologia, 96, 59–113.

—— 1955. The Kells Crozier. Archaeologia, 96, 59–113.

—— 1956–1957. The crosiers of St. Dympna and St. Mel and tenth-century Irish metal-work. Proceedings of the Royal Irish Academy Section C, 58, 167–95.

MacDermott, M. & A. M. May 1952. A sword-handle of the Viking period from the Bann. Journal of the Royal Society of Antiquaries of Ireland, 82, 151–2.

MacDonagh, C. 1996. The ancient Parish of Kilteevogue. Donegal Annual, 48, 39–42.

MacDonagh, M. 2005. Valley bottom and hilltop: 6,000 years of settlement along the route of the N4 Sligo Inner Relief Road, in Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a

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seminar for the Public, Dublin, September 2004, eds. J. O'Sullivan & M. Stanley Dublin: Wordwell, 1–7.

MacDonald, A. 1984. Aspects of the monastery and monastic life in Adomnán's Life of Columba. *Peritia,* 3, 271–302

–––– 1999. Reiclés in the Irish annals to AD 1200. *Peritia,* 13, 259–75

MacEoin, G. 1981. The early Irish vocabulary of mills and milling, in *Studies on early Ireland: Essays in honour of M.V. Duignan*, ed. B. G. Scott Belfast.

MacGarry, D. C. 1980. Three bronze pins from Lusk, County Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 110, 153–5.

MacLean, D. 1995. The status of the sculptor in Old-Irish law and the evidence of the crosses. *Peritia,* 9, 125–55

–––– 1995. Technique and contact: carpentry-constructed insular stone crosses, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO.

MacMahon, M. 1984. The Doughnambraher font-relic of an ancient ecclesiastical site?, . *The Other Clare,* 8, 17–8.

–––– 2000. The cult of Inghin Bhaoith and the church of Killinaboy. *The Other Clare,* 24, 12–7.

MacNeill, E. 1929–1931. Archaisms in the ogham inscriptions. *Proceedings of the Royal Irish Academy Section C,* 39, 33–53.

–––– 1933. The Pretanic background in Britain and Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 63, 1–28.

–––– 1938. An inscription at Killeany, Aran Islands (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 143–4.

MacNiocaill, G. i. 1972. *Ireland before the Vikings* Dublin: Gill and Macmillan.

–––– 1982. Investment in early Irish agriculture, in *Studies on Early Ireland: Proceedings of the Association of Young Irish Archaeologists*, ed. B. G. Scott Belfast, 7–9.

MacNiocaill, G. i. & P. F. Wallace (eds.), 1988. *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* Galway: Galway University Press.

MacQuarrie, A. 1992. Early Christian religious houses in Scotland: foundation and function, in *Pastoral Care before the Parish*, eds. J. Blair & R. Sharpe Leicester: Leicester University Press, 110–33.

MacWhite, E. 1960–1961 Contributions to a study of Ogham memorial stones. *Zeitschrift fur Celtische Philologie,* 28, 294–308.

Maher, D. 1994. Derrynaflan: the medieval grave slabs. *Tipperary Historical Journal,* 7, 162–6.

Mahr, A. 1930. Recent acquisitions of archæological finds made by the National Museum, Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 60, 73–8.

–––– 1932. The Blackrock brooch. *Journal of the Louth Archaeological and Historical Society,* 7(4), 530–1.

–––– 1932. *Christian art in ancient Ireland: selected objects illustrated and described,* Dublin: Stationery Office.

–––– 1937. Irish Early Christian Handicraft. *North Munster Antiquarian Journal,* 1(2), 57–66.

Mallory, J. P. & T. E. McNeill 1991. *The archaeology of Ulster from colonization to plantation,* Belfast: The Institute of Irish Studies, Queen's University of Belfast.

Mallory, J. P. & B. Ó Donnagháin 1998. The Origins of the Population of Ireland: a Survey of Putative Immigrations in Irish Prehistory and History. *Emania,* 17, 47–81.

Mallory, J. P. & P. C. Woodman 1984. Oughtymore: an Early Christian shell midden. *Ulster Journal of Archaeology,* 47, 51–62.

Manning, C. 1977–1978. Excavations at Kilteel 1977, preliminary report. *Journal of the Kildare Archaeological and Historical Society,* 16(1), 73–4.

–––– 1980. Cross-slab at Ardamore. *Journal of the Kerry Archaeological and Historical Society,* 13, 39–44.

–––– 1981–1982. Excavation at Kilteel Church, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 16(3), 173–229.

–––– 1982. Cross-slab at Killamery. *Old Kilkenny Review*, 378–9.

–––– 1983. Two cross-slabs at Knocktopher. *Old Kilkenny Review*, 471–4.

–––– 1983–1984. Excavations at Glendalough. *Journal of the Kildare Archaeological and Historical Society,* 16(4), 342–7.

–––– 1984. The excavation of the Early Christian enclosure of Killederdadrum in Lackenavorna,. Co. Tipperary. *Proceedings of the Royal Irish Academy Section C,* 84, 237–68.

–––– 1985. Archaeological excavations at two church sites on Inishmore, Aran Islands. *Journal of the Royal Society of Antiquaries of Ireland,* 115, 96–120.

–––– 1985–1986. A cist at Haynestown. *Journal of the Kildare Archaeological and Historical Society,* 16(5), 484–91.

–––– 1986. Archaeological excavation of a succession of enclosures at Millockstown, Co. Louth. *Proceedings of the Royal Irish Academy Section C,* 86 (Section C), 135–81.

–––– 1987. Excavation at Moyne graveyard, Shrule, Co. Mayo. *Proceedings of the Royal Irish Academy Section C,* 87, 37–70.

–––– 1987–1988. The stone-built ringfort entrance at Cahirvagliair, Cappeen, Co. Cork. *Journal of Irish Archaeology,* 4 37–54.

–––– 1991. Toureen Peakaun: Three new inscribed slabs. *Tipperary Historical Journal,* 4, 208–14.

–––– 1992. The base of the North Cross at Clonmacnoise. *Archaeology Ireland,* 6(2), 8–9.

–––– 1994. *Clonmacnoise,* Dublin: Stationery Office.

–––– 1994. The earliest plans of Clonmacnoise. *Archaeology Ireland,* 8(1), 18–20.

–––– 1995. Clonmacnoise Cathedral- The Oldest Church In Ireland. *Archaeology Ireland,* 9(4), 30–3.

–––– 1995. *Early Irish monasteries*

–––– 1996–1997. Kilteel revisited. *Journal of the Kildare Archaeological and Historical Society,* 18(3), 296–300.

–––– 1997. Daire Mór identified. *Peritia,* 11, 359–69

–––– 1997. The Date of the Round Tower at Clonmacnoise. *Archaeology Ireland,* 11(2), 12–3.

–––– 1998. A cross-inscribed pillar stone on Tonelagee Mountain, Co. Wicklow. *Wicklow Archaeology and History,* 1, 126–28.

–––– 1998. Cross-slabs from Clonenagh, Co. Laois, in *Dublin and beyond the Pale: studies in honour of Patrick Healy,* ed. C. Manning Dublin: Wordwell in association with Rathmichael Historical Society, 185-92.

–––– 1998. Daire Mór and Longford Pass. *Peritia,* 12, 270.

–––– (ed.) 1998. *Dublin and beyond the Pale: studies in honour of Patrick Healy,* Bray: Wordwell in association with Rathmichael Historical Society.

–––– 1998. The inscription on the north cross at Ballymore Eustace (note), County Kildare. *Journal of the Royal Society of Antiquaries of Ireland,* 128, 112.

–––– 1999. *St Mullin's: an early ecclesiastical site and medieval settlement in County Carlow* Bray: Wordwell.

–––– 2000. Refernces to church buildings in the Annals, in *Seanchas: Studies in early and medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne,* ed. A. P. Smyth Dublin: Four Courts Press, 37–52.

–––– 2001. Excavations at Dublin castle, 1985-7, in *Medieval Dublin II : proceedings of the Friends of Medieval Dublin Symposium 2000* ed. S. Duffy Trinity College Dublin: Four Courts Press, 169–204.

–––– 2001. *The Powder Tower, Dublin Castle,* Bray: Wordwell.

–––– 2002. A Puzzle in Stone: the Cathedral at Glendalough. *Archaeology Ireland,* 16(2), 18–21.

–––– 2007. Could well be a mill. *Archaeology Ireland,* 21(1), 12–5.

Manning, C. & F. Moore 1991. An Ogham Stone find from Clonmacnoise. *Archaeology Ireland,* 5(4), 10–1.

–––– 1997. A second ogham stone at Clara. *Peritia,* 11, 370–2

Mannion, B. 1987. Togher Patrick. *Cathair Na Mart,* 7, 78–84.

–––– 1988. Aughagower and its Patrician sites and connections. *Cathair Na Mart,* 1, 5–18.

Mansi, J.D. 1902. *Sacrocum Conciliorum Novae et Amplisima Collectio, Vol. XX,* H. Welter, Paris.

Marnell, C. 1999. Healing wells of Kiltartan. *Journal of the Galway Archaeological and Historical Society,* 51, 182–8.

Marshall, J. W. 2000. *High island: an irish monastery in the Atlantic* Dublin: Town House & Country House.

–––– 2000. The secular origin of the monastic enclosure wall of High Island, Co. Galway. *Archaeology Ireland,* 14(2), 30–4.

–––– 2003. *Illaunloughan Island: an early medieval monastic site in County Kerry* Bray: Wordwell.

Marshall, J. W. & C. Walsh 1994. Illaunloughan: Life and death on a small early monastic site. *Archaeology Ireland,* 8(4), 25–8.

–––– 2005. *Illaunloughan: An early medieval monastery in County Kerry,* Bray: Wordwell.

Marx, S. 1995. The miserable beasts: animal art in the Gospels of Lindisfarne, Lichfield and St Gallen. *Peritia,* 9, 234–45.

Maryon, H. 1971. *Metalworking and Enamelling,* New York.

Mason, A. 1983. Cross-inscribed slab in Archbold's Castle, Dalkey, County Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 113, 143–4.

Mason, T. H. 1938. The antiquarian remains of Inisheer, Aran, Co. Galway. *Journal of the Royal Society of Antiquaries of Ireland,* 68, 196–200.

–––– 1942. The Devil as depicted on Irish High Crosses. *Journal of the Royal Society of Antiquaries of Ireland,* 72, 131–5.

Masser, K. A. & D. H. L. Bradley 1958. Souterrain in the grounds of Lisrenny House. *Journal of the Louth Archaeological and Historical Society,* 14(2), 93–5.

Masterson, R. 1998. Some lesser known ecclesiastical sites in Fore, Co. Westmeath. *Ríocht na Midhe,* 9(4), 40–8.

–––– 2003. St. Colmán and the Early Medieval monastery of Lynally (c. 600–1100). *Offaly Heritage,* 1, 38–50.

May, A. M. 1943. Portbraddan Cave, County Antrim *Ulster Journal of Archaeology,* 6, 39–60.

May, A. M. & D. C. Copper 1939. Rock-Hewn Souterrain, Ballintemple, Garvagh, Co. Londonderry *Ulster Journal of Archaeology,* 2.

McAlister, D. K. 2003. Survey of Drumcullen (St. Barrind's) Church, Drumcullen, Co. Offaly. *Offaly Heritage,* 1, 22–30.

McAney, K. 1993. Horseshoes in souterrains- Regular archaeological finds! *Archaeology Ireland,* 7(3), 18–9.

McAulay, I. & W. A. Watts 1961. Dublin Radiocarbon Dates 1. *Radiocarbon,* 3, 26–38.

McCabe, B. 2005. Antiquities in old Tipper Graveyard, Co. Kildare. *Journal of the Royal Society of Antiquaries of Ireland,* 135, 147–50.

McCarthy, C. 1991. The excavation of Clonrush Church, near Whitegate, Co. Clare. *North Munster Antiquarian Journal,* 33, 7–15.

McCarthy, D. & D. Ó Cróinín 1987–1988. The 'lost' Irish 84-year Easter table rediscovered. *Peritia,* 6–7, 227–42

McCarthy, D. P. 1998. The chronology of the Irish annals. *Proceedings of the Royal Irish Academy Section C,* 98, 203–55.

–––– 2001. The chronology and sources of the early Irish annals. *Early Medieval Europe,* 10(3), 323.

McClintock, H. F. 1943. Bog finds in the Ardee district. Wooden causeway—stone pavement. *Journal of the Louth Archaeological and Historical Society,* 10(3), 229.

McCone, K. 1984. Notes on the text and authorship of the Early Irish bee-laws. *Cambridge Medieval Celtic Studies,* 8, 65–85.

–––– 1986. Werewolves, cyclopes díberga and fíanna: juvenile delinquency in early Ireland. *Cambridge Medieval Celtic Studies,* 12, 1–22.

–––– 1990. *Pagan Past and Christian Present in early Irish literature,* Naas: Leinster Leader Press.

McCone, K. & K. Simms 1996. *Progress in medieval Irish studies,* Maynooth: Department of Old Irish, Saint Patrick's College.

McConway, C. 2002. Excavations at Laytown reveal coastal settlement in Meath. *Archaeology Ireland,* 16(1), 16–9.

McCormick, F. 1983. Dairying and Beef Production in Early Christian Ireland, the faunal evidence, in *Landscape archaeology in Ireland,* eds. R. Reeves-Smyth & F. Hammond Oxford: Oxford University Press, 253–67.

–––– 1991. The Dog in Prehistoric and Early Christian Ireland. *Archaeology Ireland,* 5(4), 7–9.

–––– 1992. Early Christian metalworking on Iona: excavations under the 'infirmary' in 1990. *Proceedings of the Society of Antiquaries of Scotland,* 122, 207–14.

–––– 1993. Excavations at Iona, 1988 *Ulster Journal of Archaeology,* 56, 78–103.

–––– 1994. New Light on burial practice. *Archaeology Ireland,* 8(3), 27–8.

–––– 1995. Cows, ringforts and the origin of early Christian Ireland. *Emania,* 13, 33–7.

–––– 1995. A Pagan-Christian transitional burial at Kiltullagh. *Emania,* 13, 89–98.

McCormick, F. 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, pp. 355-371.

McCormick, F. & F. J. Crone 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., Gibbons, M., F. G. McCormac & J. Moore 1996. Bronze Age to medieval coastal shell middens near Ballyconneely, co. Galway. *Journal of Irish Archaeology,* 7.

McCormick, F & Macdonald, P. 2004. 'Excavations at Dunnyneill Island', Lecale Review (2), 5-10.

McCormick, F & Murray, E.V. 2007. *Excavations at Knowth 3: Knowth and the zooarchaeology of early Christian Ireland,* Royal Irish Academy, Dublin.

–––– 1995. Cows, ringforts and the origins of early Christian Ireland. *Emania,* 13, 33–8.

McCormick, F., E. Murray & G. Eogan 2007. *Excavations at Knowth. 3, Knowth and the zooarchaeology of Early Christian Ireland* Dublin: Royal Irish Academy.

McCormick, M. 2001. *Origins of the European Economy,* Cambridge University Press, Cambridge

McCurtain, M. & D. Ó Corrain (eds.), 1978. *Women in Irish society,* Dublin: Arlen House.

McCutcheon, C. 1994. 'Medieval Pottery', in L. Simpson (ed.) *Excavations at Isolde's Tower, Dublin,* Dublin, 50-77.

McCutcheon, C. 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.

McCutcheon, C. 1995b. 'Medieval Pottery', in L. Simpson (ed.) *Excavations at Essex Street West, Dublin,* Dublin, 40-53.

McCutcheon, C. 1995c. 'The Pottery', in M.F. Hurley (ed.) 'Excavations in Cork City: Kyrl's Quay/North Main Street', *Journal of the Cork Historical and Archaeological Society* (101), 42-54.

McCutcheon, C. 1996. 'The Pottery', in E.Shee Twohig (ed.) 'Excavations at St. Saviour;s Dominican Priory, Limerick', *North Munster Antiquarian Journal* (37), 65-72.

McCutcheon, C. 1997. 'Pottery', in M.F. Hurley (ed.) *Excavations at the North Gate, Cork 1994,* Cork, 75-101.

McCutcheon, C. 2006. Brought to Book- the potter and the pot. *Archaeology Ireland,* 20(1), 22–5.

–––– 2006. *Medieval Pottery from Wood Quay, Dublin: The 1974-6 Waterfront Excavations,* Dublin: Royal Irish Academy.

McDonald, K. 1996. An Early Christian carving from near Feakle, Co. Clare (note). *North Munster Antiquarian Journal,* 37, 129–31.

McDonald, M. 1971. The Breaney Ringfort. *Teathbha,* 1(2), 131–3.

McDonald, T. 1992. *Achill: 5,000 B.C. to 1900 A.D. Archaeology, History and folklore:* I.A.S. Publications.

–––– 2006. ...continuity and change on Achill Island. *Archaeology Ireland,* 20(1), 17–21.

McDonald, T. & J. Higgins 1999. *Kilbride-Clara, A Study of its Archaeology, Architecture, History & Folklore,* Kilbride: Kilbride Abbey Preservation Group.

McDonnell, H. 1994. Margaret Stokes and the Irish Round Tower: a reappraisal *Ulster Journal of Archaeology,* 57, 70–80.

McDowell, J. A. 1987. Excavation in an ecclesiastical enclosure at Doras, county Tyrone *Ulster Journal of Archaeology,* 50, 137–54.

McErlean, T. C. 1983. The Irish townland system of landscape organisation, in *Landscape Archaeology in Ireland,* eds. T. Reeves-Smyth & F. Hammond Oxford: Tempus Reparatum, 315–39.

–––– 2001. Tidal power in the seventh and eighth centuries A.D. . *Archaeology Ireland,* 15(2), 10–4.

McErlean, T. C. & N. Crothers 2001. The early medieval Mills at Nendrum: An interim statement, in *Strangford Lough: An archaeological Survey of the Maritime Cultural Landscape,* eds. T. C. McErlean, R. McConkey & K. Forsyth Belfast: Blackstaff Press, 200–11.

–––– (eds.), 2007. *Harnessing the Tides: The early medieval tide mill at Nendrum Monastery, Strangford Lough,* Belfast: The Stationery Office.

McErlean, T. C., C. Earwood, D. Moore & E. Murphy 2007. The Sequence of Early Christian Period Horizontal Tide Mills at Nendrum Monastery: An Interim Statement. *Historical Archaeology,* 41(3), 63–75.

McErlean, T. C., R. McConkey & W. Forsythe 2002. *Strangford Lough: an archaeological survey of the maritime cultural landscape*

McEwan, J. M. 2003. *Archaeology and Ideology in Nineteenth century Ireland: Nationalism or Neutrality,* Oxford: John and Erica Hedges.

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.

McGrail, S. 1978. *Logboats of England and Wales with comparative material from European and other countries,* Oxford.

–––– (ed.) 1982. *Woodworking techniques before AD 1500: papers presented to a symposium at Greenwich in September, 1980, together with edited discussion,* Greenwich: Greenwich Museum.

–––– 1987. *Ancient boats in N.W. Europe,* London.

–––– 2007. *Ancient Boats and Ships,* London.

McGreevy, C. 1977. Some early Irish battle sites identified. *Riocht na Midhe,* 6(3), 60–1.

McGuinness, D. & M. Redmond 1995. Two bullaun stones in Kilbeg Townland, County Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 125, 129–31.

McGuinness, J. 2000. *Saint Patrick's Purgatory Lough Derg* Dublin: Columba Press.

McGurk, P. 1956. The Irish pocket gospel-books. *Sacris Erudiri,* 8, 249–70.

–––– 1987. The Gospel book in Celtic lands before A.D. 850: contents and arrangements, in *Ireland and Christendom: the Bible and the missions,* eds. P. Ní Chatháin & M. Richter Stuttgart: Klett Cotta, 165–9.

McKenna, J. E. 1930. Souterrain in Aghnahoo, Parish of Termonamongan, Co. Tyrone (note). *Journal of the Royal Society of Antiquaries of Ireland,* 60, 194–6.

–––– 1931. *Devnish: Its history, antiquities and traditions,* Enniskillen.

McKenna, J. E. & L. D. Lowry-Corry 1930. White Island, Lough Erne: Its ancient church and unique sculptures. *Journal of the Royal Society of Antiquaries of Ireland,* 60, 23–37.

McKeown, L. M. 1933. A. The shrine of St. Patrick's hand. B. The shrine of St. Fillan's Hand (note). *Journal of the Royal Society of Antiquaries of Ireland,* 63, 244.

McLarnen, F., M. A. Monk & R. Sexton 2004. 'Burning the biscuit': evidence from the Lisleagh excavations reveals new secrets twenty years on! *Archaeology Ireland,* 18(3), 18–20.

McLoughlin, E. P. 1950. Report on the anatomical investigation of the skeletal remains unearthed at Castleknock in the excavation of an Early Christian cemetery at Castleknock during the Summer of 1938, Dublin: Stationery Office.

McMahon, J. & E. Rynne 1990. A destroyed rath at Kilscannell, near Ardagh, Co. Limerick. *North Munster Antiquarian Journal,* 32, 98.

McMahon, M. 1991. Archaeological excavations at Bridge Street Lower. *Proceedings of the Royal Irish Academy Section C,* 91, 41–71.

–––– 2002. Early medieval settlement and burial outside the enclosed town: evidence from archaeological excavations at Bride Street, Dublin. *Proceedings of the Royal Irish Academy Section C,* 102(4), 65–135.

McMahon, N. 2007. Clondalkin Round Tower: The problems of suburban archaeology. *Trowel,* 11, 80–6.

McManus, D. 1991. *A guide to ogam* Maynooth: An Sagart, St. Patricks College.

McNab, S. L. 1987. The Romanesque figure sculpture at Maghera, County Derry and Raphoe, Co. Donegal, in *New Perspectives, Studies in Art-history in honour of Anne Crookshank,* eds. J. Fenlon, N. Figgis & C. Marshall Dublin: Irish Academic Press.

–––– 1987. The Romanesque sculptures of Ardmore Cathedral, Co. Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 117, 50–68.

–––– 1987–1988. Styles used in twelfth-century Irish figure sculpture. *Peritia,* 6–7, 265–97

–––– 1990. A note on the reconstructed High Cross at Roscrea, Co. Tipperary. *North Munster Antiquarian Journal,* 32, 96–7.

–––– 1990-1991. Early Irish sculpture. *Irish Arts Review Yearbook,* 1990-1991, 164-71.

–––– 2001. Celtic antecedents to the treatment of the human figure in early Irish art, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context,* ed. C. Hourihane Princeton: Princeton University Press, 161–82.

McNamara, M. 1973. Psalter text and Psalter study in the Early Irish Church (A.D. 600–1200). *Proceedings of the Royal Irish Academy Section C,* 73, 201–96.

–––– 1987–1988. The Echternach and Mac Durnan gospels: some common readings and their significance. *Peritia,* 6–7, 217–22.

McNamara, S. 2005. Woodstown 6: the finds, in *Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004,* eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 125–30.

McNamara, T. V. 1984. The bullaun stones of Holy Island. *The Other Clare,* 8, 31–2.

McNeill, T. E. 1975. Medeival Raths? An Anglo-Norman comment. *Irish Archaeological Research Forum,* 2, 37–9.

–––– 1991–1992. Excavations at Dunsilly, County Antrim *Ulster Journal of Archaeology,* 54–55, 78–112.

McQuillan, L. 2002. Straight and to the point. *Archaeology Ireland,* 16(1), 11.

McShane, J. 1980. Viking ingots found at Mungret. *Irish Numismatics,* 13, 164–5.

McSparron, C. 2001. The excavation of an unenclosed house of the early Christian period at Drumadonnell, County Down. *Ulster Journal of Archaeology,* 60, 47–56.

Meagher, N. 1983–1984. Fragment of a High Cross from Moone [note]. *Journal of the Kildare Archaeological and Historical Society,* 16(4), 371–2.

Meehan, B. 1994. *The Book of Kells: an illustrated introduction to the manuscript in Trinity College,* London: Thames & Hudson.

Meek, C. & K. Simms (eds.), 1996. *'The Fragility of her sex'?: medieval Irishwomen in their European context* Dublin: Four Courts Press.

Meek, D. E. 1986. The banners of the fian in Gaelic ballad tradition. *Cambridge Medieval Celtic Studies,* 11, 29–69.

–––– 1997. Norsemen and Noble Stewards": The MacSween Poem in the Book of the Dean of Lismore. *Cambridge Medieval Celtic Studies,* 34, 1–50.

Meenan, R. 2002. Archaeological excavations at 16-17 Cook Street, Dublin, in *Medieval Dublin III: proceedings of the Friends of Medieval Dublin Symposium 2001* ed. S. Duffy Trinity College Dublin: Four Courts Press, 128–39.

–––– 2004. The excavation of pre-Norman burials and ditch near St. Michan's church, Dublin, in *Medieval Dublin V: proceedings of the Friends of Medieval Dublin Symposium 2003* ed. S. Duffy Dublin: Four Courts Press, 91–110.

Meighan, I.G. 2007. 'Sourcing the Nendrum Millstone Material', in T. McErlean & N. Crothers (eds.) *Harnessing the Tides: the Early Medieval Tide Mills at Nendrum Monastery*, Norwich, pp. 204-5.

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), 235-263.

Megaw, J. V. S. & R. Megaw 1986. *Early Celtic art in Britain and Ireland,* Aylesbury.

–––– 2001. *Celtic art: from its beginnings to the Book of Kells (2nd edition),* London: Thames and Hudson.

Megaw, R. & V. Megaw 1999. Celtic connections past and present: Celtic ethnicity ancient and modern, in *Celtic Connections. Proceedings of the 10th International Congress of Celtic Studies*, eds. R. Black, W. Gillies & R. Ó Maolalaigh East Linton: Tuckwell, 19–81.

Meyer, K. 1892. *Aislinge Meic Conglinne, The Vision of McConglinne, a Middle-Irish wonder Tale*, London.

Meyer, K. 1909. *Tecosca Cormaic*, Todd Lecture Series 15, Dublin.

Meyvaert, P. 1989. The Book of Kells and Iona. *Art Bulletin,* 71, 6–19.

Micheál, A. t.-A. 1946–1947. St. Fiacre's Well. *Old Kilkenny Review,* 1, 63–7.

Michelli, P. E. 1986. Four Scottish crosiers and their relation to the Irish tradition. *Proceedings of the Society of Antiquaries of Scotland,* 116, 375–92.

–––– 1993. Migrating ideas of migrating craftsmen, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 182-7.

–––– 1996. The Inscriptions on pre-Norman Irish reliquaries. *Proceedings of the Royal Irish Academy Section C,* 96, 1–48.

Miller, J. J. & J. H. Dickson 1998. Unusual food plants from Oakbank Crannog, Loch Tay, Scottish Highlands: cloudberry, opium poppy. *Antiquity,* 72(278), 805.

Mitchell, G. F. 1944–1945. The relative ages of archaeological objects recently found in bogs in Ireland. *Proceedings of the Royal Irish Academy Section C,* 50.

–––– 1953–1954. A Pollen-Diagram from Lough Gur, County Limerick (Studies in Irish quaternary deposits: No. 9. *Proceedings of the Royal Irish Academy Section C,* 56, 481–8.

–––– 1957. Post-boreal pollen diagrams from Irish raised bogs. *Proceedings of the Royal Irish Academy Section B,* 57B, 185–250.

–––– 1958. Radiocarbon-dates and pollen-zones in Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 88, 49–56.

–––– 1965. Littleton Bog, Tipperary: an Irish agricultural record. *Journal of the Royal Society of Antiquaries of Ireland,* 95, 121–32.

–––– 1976. *The Irish Landscape,* London: Collins Press.

–––– 1984. The cap of St Lachtin's arm. *Journal of the Royal Society of Antiquaries of Ireland,* 114, 139–40.

Mitchell, G. F., C. A. Dickson & J. H. Dickson 1987. *Archaeology and environment in early Dublin,* Dublin: Royal Irish Academy.

Moeran, A. E. 1948–1949. The Gobaun Saor. *Journal of the Galway Archaeological and Historical Society,* 23(1 & 2), 52–6.

Mogey, J. M. 1942. Skeleton from Stranocum Fort *Ulster Journal of Archaeology,* 5, 97.

–––– 1946. Notes on some field monuments in the Braid *Ulster Journal of Archaeology,* 9, 130–7.

–––– 1946. Wooden canoes *Ulster Journal of Archaeology,* 9, 69–76

Moisl, H. 1983. The Bernican Royal dynasty and the Irish in the seventh century. *Peritia,* 2, 103–26.

Molleson, T. I. 1985–1986. New radiocarbon dates for the occupation of Kilgreany cave, county Waterford. *Journal of Irish Archaeology,* 3.

Molloy, K. & M. O'Connell 2004. Holocene vegetation and land-use dynamics in the karstic environment of Inis OÃrr, Aran Islands, western Ireland: pollen analytical evidence evaluated in light of the archaeological record. *Quaternary International,* 113(1), 41.

Moloney, A. 1988. A review of bog trackways in Ireland. *Trowel,* 1, 7–12.

Moloney, A., D. Jennings, M. Keane & C. McDermott 1993. *Irish Archaeological Wetland Unit. Transactions: Volume 1. Survey of the raised bogs of county Longford,* Dublin: Department of Archaeology, University College Dublin.

Moloney, M. 1944–1945. Mungret. *North Munster Antiquarian Journal,* 4(1), 1–15.

–––– 1964. Beccan's Hermitage in Aherlow; the riddle of the slabs. *North Munster Antiquarian Journal,* 9(3), 99–107.

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.

–––– 1934. Souterrain at Fox's Castle, parish of Stradbally, Co. Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 64, 265–8.

–––– 1939. Souterrain at Millerstown, parish of Stradbally, Co. Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 69, 162–6.

Monk, M. A. 1981. Post-Roman Drying Kilns and the Problem of Function: Preliminary Statement, in *Irish Antiquity: Essays and Studies Presented to Professor M.J. O'Kelly*, ed. D. Ó Corrain Blackrock: Four Courts Press, 216–30.

–––– 1985–1986. Evidence from macroscopic plant remains for crop-husbandry in prehistoric and early historic Ireland: A review. *Journal of Irish Archaeology,* 3.

–––– 1987. Experimental Archaeology. *Archaeology Ireland,* 1(2), 65–6.

–––– 1988. Excavations at Lisleagh Ringfort, north Cork. *Archaeology Ireland,* 2(2), 57–60.

–––– 1995. A tale of two ringforts: Lisleagh I and II *Journal of the Cork Historical and Archaeological Society,* 100, 105–16.

Monk, M. A. & E. Kelleher 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.

Monk, M. A. & J. Sheehan (eds.), 1998. *Early medieval Munster: archaeology, history, and society* Cork Cork University Press.

Monks, W. 1946–1947. The Cave of Dunmore. *Old Kilkenny Review,* 1, 55–60.

Montgomery, A. V. 1955. The Bishop's grave at Clonfad. *Ríocht na Midhe,* 1(1).

Moog, B. 1994. *The Horizontal watermill: history and technique of the first primer mover,* The Hague: International Molinological Society.

Mooney, K. & F. Carson 1974. Souterrain at Townley Hall. *Journal of the Louth Archaeological and Historical Society,* 18(2), 110–1.

Moore, B. F. E. 1975. Kilmore and Arodstown churches and graveyards. *Ríocht na Midhe,* 6(1), 38–49.

–––– 1981. Clonmacduff (alias Courtown, alias Black Church) Headstones. *Ríocht na Midhe,* 7(1), 111–26.

Moore, B. F. E. & M. Kenny 1976. Tombstones in Clonabreany graveyard. *Ríocht na Midhe,* 6(2), 16–36.

–––– 1977. Headstones in Kilbride graveyard (Barony of Dunboyne). *Ríocht na Midhe,* 6(3), 23–37.

Moore, C. 2007. Right on track at Edercloon. *Seanda: National Roads Authority Magazine,* 2, 20–1.

Moore, C. & J. O'Dowd 2007. Mind-boggling wetland discoveries. *Archaeology Ireland,* 21(1), 34–5.

Moore, E. 1988. Longford and dúnad in Early Medieval Ireland. *Trowel,* 1, 31–2.

Moore, F. 1993. The discovery of a souterrain in the townland of Murvagh Lower (1) Co. Donegal. *Donegal Annual,* 45, 128–30.

–––– 1996. Ireland's Oldest bridge- at Clonmacnoise. *Archaeology Ireland,* 10(4), 24–7.

–––– 2001. Ogham discovery in Mayo. *Archaeology Ireland,* 15(1), 33.

–––– 2007. *Ardfert Cathedral: Summary of Excavation Results,* Dublin: Stationery Office.

Moore, L. T., B. McEvoy, E. Cape, K. Simms & D. G. Bradley 2006. A Y-Chromosome Signature of Hegemony in Gaelic Ireland. *American Journal of Human Genetics,* 78(2), 334–8.

Moore, M. 1992. Journey through a time-tunnel. *Archaeology Ireland,* 6(1), 16–9.

Moore, M. J. 1979. Two stone lamps from County Louth. *Journal of the Louth Archaeological and Historical Society,* 19(3), 238–9.

–––– 1984. Irish cresset-stones. *Journal of the Royal Society of Antiquaries of Ireland,* 114, 98–116.

–––– 1984. A small corner of Waterford's Past: a preliminary report on the excavations at Lady Lane, Dublin: Dúchas.

Moore, V. H. P. 1938. Souterrains at Ballybeeny. *Ulster Journal of Archaeology,* 1, 214–5

Moran, P. 1942. Inscribed cross-slabs in the parish of Ballycroy, Co. Mayo (note). *Journal of the Royal Society of Antiquaries of Ireland,* 72, 149–51.

–––– 1944–1945. Note on an inscribed slab, at Newport, Co. Mayo. *Journal of the Galway Archaeological and*

Historical Society, 21(1 & 2), 51–5.

Moran, W. 1955. Cro-Inis. *Ríocht na Midhe,* 1(1), 36–40.

–––– 1956. Viking burials in Meath? *Ríocht na Midhe,* 1(2), 49–51.

Morris, C. A. 1980. A group of early medieval spades. *Medieval Archaeology,* 24, 205–10.

–––– 1981. Early medieval seperate-bladed shovels from Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 111, 50–69.

Morris, H. J. 1930. Where was Aonach Tailtean? *Journal of the Royal Society of Antiquaries of Ireland,* 60, 113–29.

–––– 1931. Some Ulster ecclesiastical bells. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 61–4.

–––– 1932. The Belladooan skeleton. *Journal of the Royal Society of Antiquaries of Ireland,* 62, 191–200.

–––– 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.

–––– 1935. The Muiredach Cross at Monasterboice (note). *Journal of the Royal Society of Antiquaries of Ireland,* 65, 159.

–––– 1937. An Irish manuscript from Inniskeen. *Journal of the Louth Archaeological and Historical Society,* 9(1), 30–1.

–––– 1938. The Slighe Cualann. *Journal of the Royal Society of Antiquaries of Ireland,* 68, 113–23.

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.

Mostert, M. 1995. Celtic, Anglo-Saxon or Insular? Some considerations on Irish manuscript production and their implications for insular Latin culture c. A.D. 500-800, in *Cultural Identity and cultural integration: Ireland and Europe in the middle ages*, ed. E. Doris Dublin: Four Courts Press, 92–115.

Mount, C. 1992. Killanully, Co. Cork, in *Digging up Cork, Archaeological Excavations in Cork 1992*, ed. S. Cherry Cork: Cork: Cork Museum.

–––– 1994. From Knoxspark to Tír na nóg. *Archaeology Ireland,* 8(3), 22–3.

–––– 2002. The promontory fort, inhumation cemetery and sub-rectangular enclosure at Knoxspark, Co. Sligo, in *A celebration of Sligo– First essays for the Sligo Field Club.*, ed. M. A. Timoney Sligo: Sligo Field Club, 103–16.

Mount, C. & V. Keeley 1990. An early medieval strap-tag from Balally, County Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 120, 120–5.

Movius, H. L. 1935. Kilgreany Cave, County Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 65, 254–96.

Mulcahy, M. 1986. Stonework in Ardmore. *Ardmore Journal,* 3, 11-7.

Mullins, C. 1999. Archaeological excavation of a mound at Cooldrinagh, Co. Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 129, 90–104.

–––– (ed.) 2007. *Pagan or Christian? Excavation of a hilltop cemetery at Cross, Co. Galway,* Bray: Wordwell.

Mulveen, J. 1996. The origin and development of ocupational graveslabs. *North Munster Antiquarian Journal,* 37, 99–106.

–––– 1999. Tóchar Phádraic: Mayo's penitential and sculptured highway. *Journal of the Galway Archaeological and Historical Society,* 51, 167–81.

Munn, M.L.Z. 1985. 'A Late Roman kiln site in the Hermionid, Greece', *American Journal of Archaeology* (89), 342-343.

Murphy, B. 1971. *Irish high crosses: arrangement and form,* (Unpublished M.A.) Dublin: University College Dublin.

Murphy, D. 1992. The distribution of Early Christian monastic sites and its implications for contemporary secular settlement in County Louth. *Journal of the Louth Archaeological and Historical Society,* 22(4), 364–86.

–––– 1993. Monasterboice: Secrets from the air. *Archaeology Ireland,* 7(3), 15–7.

–––– 1998. Archaeological excavation of a souterrain at Farrendreg, Dundalk, County Louth. *Journal of the Louth Archaeological and Historical Society,* 24(2), 261–80.

Murphy, D. & S. Rathbone 2006. Excavations of an early medieval vertical watermill at Killoteran, County Waterford, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 19–28.

Murphy, E. M. & T. E. McNeill 1993. Human remains excavated at Doonbought Fort, Co. Antrim, 1969 *Ulster Journal of Archaeology,* 56, 120–38.

Murphy, E. M. & N. J. Whitehouse (eds.), 2007. *Environmental archaeology in Ireland,* Oxford: Oxbow Press.

Murphy, I. 1973–1974. Preserving the round tower on Inis Cathaigh (note). *North Munster Antiquarian Journal,* 16, 89–90.

–––– 1996. 'Sheedy's Fort', Kilkee. *North Munster Antiquarian Journal,* 37, 33–6.

Murphy, T. F. & C. O'Cuileanain 1961. A ringfort at Old Court, Co. Cork. *Journal of the Cork Historical and Archaeological Society,* 66, 79–92.

Murray, A. 1978. Money and robbers, 900-1000. *Journal of Medieval History,* 4, 55–93.

Murray, C., M. Stanley, C. McDermott & C. Moore 2002. Sticks and Stones: Wetland Unit Survey 2002. *Archaeology Ireland,* 16(4), 16–9.

Murray, G. 2003. Lost and found: the eleventh figure on St Manchan's Shrine'. *Journal of the Royal Society of Antiquaries of Ireland,* 133, 177–81.

–––– 2004. The 'hidden power' of the Irish crozier. *Archaeology Ireland,* 18(1), 24–7.

Murray, H. 1983. *Viking and early medieval buildings in Dublin,* Oxford: Oxford: Tempus Reparatum.

Murray, R. D. 1932. A souterrain near Reynella, Co. Westmeath. *Journal of the Royal Society of Antiquaries of Ireland,* 62, 224–5.

Murtagh, B. 1993. The Kilkenny Castle archaeological project, 1990–1993: Interim Report. *Old Kilkenny Review,* 4(5), 1101–17.

–––– 1994. Archaeological investigations at Dysart, Co. Kilkenny 1989-1994: an interim report. *Old Kilkenny Review,* 78–94.

Murtagh, H. (ed.) 1980. *Irish Midland studies: essays in commemoration of N.W. English* Athlone: Old Athlone Society.

Mytum, H. 1986. High Status Vessels in early historic Ireland: A reference in the Bethu Brigte. *Oxford Journal of Archaeology,* 5(3), 375–8

–––– 1992. *The Origins of early Christian Ireland* London: Routledge.

Neary, P. J. H. 2003. Archaeological excavation of early medieval burials at Cooleeshalmore, Threecastles, Co. Kilkenny. *Old Kilkenny Review,* 97–104.

Nees, L. 1983. The colophon drawing in the Book of Mulling: a supposed Irish monastery plan and the tradition of terminal illustration in early medieval manuscripts. *Cambridge Medieval Celtic Studies,* 5, 67–91.

–––– 1995. Art and Architecture, in *The New Cambridge Medieval History, vol. 2, c.700-c.900,* ed. R. McKitterick Cambridge: Cambridge University Press, 809–44, 1029–39.

–––– (ed.) 1998. *Approaches to early medieval art,* Massachusetts: Cambridge Press.

Neill, K. 1991. One fair County... *Archaeology Ireland,* 5(2), 7–10.

Neill, M. 1991. A lost Last. *Archaeology Ireland,* 5(2), 14–5.

Nelson, M. 2005. *The Barbarian's Beverage: A History of Beer in Ancient Europe,* Routledge, London.

Nevin, M. 1995. The finding of the Cashel Crosier (note). *Journal of the Royal Society of Antiquaries of Ireland,* 125, 131–4.

Newell, A. 2005. An Insular dance- the dance of the Fer Cengail? *Archaeology Ireland,* 19(2), 36–9.

Newman, C. 1989. Fowler's type F3 early medieval penannular brooches. *Medieval Archaeology,* 33, 7-20.

–––– 1989–1990. Notes on some Irish hanging-bowl escutheons. *Journal of Irish Archaeology,* 5.

–––– 1990. Further notes on Fowler's type F3 penannular brooches. *Medieval Archaeology,* 34, 147-8.

–––– 1995. The Iron Age to early Christian transition: the evidence from dress fastners, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994,* ed. C. Bourke Belfast: HMSO, 17-25.

–––– 1997. Ballinderry Crannog No. 2, co. Offaly: The Later Bronze Age. *Journal of Irish Archaeology,* 8.

–––– 2005. Re-composing the Archaeological landscape of Tara, in *The Kingship and landscape of Tara,* ed. E. Bhreathnach Dublin: Four Courts Press for the Discovery Programme, 361–409.

–––– 2007. Procession and Symbolism at Tara: Analysis of Tech Midchúarta (The Banqueting Hall) in the context of the Sacral Campus. *Oxford Journal of Archaeology,* 26(4), 415–38.

Newspaper-Report 1936–1939. Excavations at Cush [Co. Limerick], 1934 (from the Irish Times, 19/11/1934). *North Munster Antiquarian Journal,* 1(1), 36.

–––– 1936–1939. [Excavations at] Cush and Galbally, 1935 (from the Irish Times, October 1935). *North Munster Antiquarian Journal,* 1(1), 36–7.

–––– 1936–1939. Excavations in the Burren [Co. Clare], 1934 (from the Irish Times, 12/11/1934). *North Munster Antiquarian Journal,* 1(1), 37–8.

Ní Chatháin, P. 1980. The liturgical background of the Derrynavlan altar service. *Journal of the Royal Society of Antiquaries of Ireland,* 110, 127–48.

Ní Chatháin, P. i. a. & M. Richter 1996. *Irland und Europa im fruheren Mittelalter: Bildung und Literatur = Ireland and Europe in the early Middle Ages: learning and literature,* Stuttgart: Klett-Cotta.

–––– 2002. Ireland and Europe in the Early Middle Ages: texts and transmission/ Irland und Europa im frühen Mittelalter: Texte und Überlieferung, in *Proceedings of the fifth international colloquium on Ireland and Europe in the early Middle Ages held under the joint auspices of Konstanz University and University College Dublin.*

, eds. P. i. a. Ní Chatháin & M. Richter University of Konstanz, 16-20th March 1998.: Four Courts, 400.

Ní Dhonnchadha, M. 1995. The lex innocentium: Adomnán's law for women, clerics and youths, 697 AD, in *Chattel, Servant or Citizen,* eds. M. O'Dowd & S. Wichert Belfast: Queen's University of Belfast, Institute of Irish Studies, 53–76.

Ní Ghabhláin, S. 1988. Carved stone head from Glencolumbcille, County Clare. *Journal of the Royal Society of Antiquaries of Ireland,* 118, 135–8.

–––– 1996. The Origin of Medieval Parishes in Gaelic Ireland: The Evidence from Kilfenora. *Journal of the Royal Society of Antiquaries of Ireland,* 126, 37–61.

Ní Ghadráigh, J. 2003. A twelfth-century doorway at the church of St. Multose, Kinsale? *Journal of the Royal Society of Antiquaries of Ireland,* 133, 68–77.

Ní Ghrádaigh, J. 2005. Temple Finghin, and two unusual voussoirs from Clonmacnoise. *Archaeology Ireland,* 19(3), 26–31.

–––– 2006. Scattery Island's forgotten Romanesque. *Archaeology Ireland,* 20(4), 26–30.

Ní Mhaonaigh, M. 2001. The Vikings in medieval Irish literature, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 99–106.

Ní Mhurchadha, E. 1940–1941. From Royal Kincora to Croom of the Merriment: a review of some of the literature of Thomond. *North Munster Antiquarian Journal,* 2(1), 31–42.

Ní Shúilliobháin, N. 1970. Orant at Staholmock, Co. Meath (note). *Journal of the Royal Society of Antiquaries of Ireland,* 100, 222.

Nic Aongusa, B. 1990–1991. The monastic hierarchy in twelfth century Ireland: the case of Kells. *Ríocht na Mídhe,* 8(3), 3–20.

Nicholl, T. 2005. The use of domestic space in early medieval round houses: an experimental archaeological approach. *Trowel,* 10, 27–32.

Nicholls, J. & D. Shiel 2006. Shades of Grey. *Seanda: National Roads Authority Magazine,* 1, 12–5.

Nieke, M. R. 1993. Penannular and related brooches: secular ornament or symbol in action?, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 128-34.

Nolan, J. 2006. Excavation of a children's burial ground at Tonybaun, Ballina, County Mayo, in *Settlement, industry and ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 89–101.

Nolan, M. J. 1933. Bell of Bangor Abbey (note). *Journal of the Royal Society of Antiquaries of Ireland,* 63, 243–4.

Nolan, P. 2002. The Cathach. *The Other Clare,* 26, 36–7.

Nolan, W. 1977. *Sources for local studies*: Dublin: The Author.

–––– 1982. *Tracing the past: sources for local studies in the Republic of Ireland,* Dublin: Geography Publications.

Nolan, W. & A. J. Hughes (eds.), 2001. *Armagh history & society: interdisciplinary essays on the history of an Irish county* Dublin: Geography Publications.

Nolan, W. & T. G. McGrath (eds.), 1985. *Tipperary: history and society: interdisciplinary essays on the history of an Irish county* Dublin: Geography Publications.

Nolan, W. & T. P. O'Neill (eds.), 1998. *Offaly: history & society: interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications.

Nolan, W., T. P. Power & D. Cowman (eds.), 1992. *Waterford: history and society: interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications.

Nolan, W., L. Ronayne & M. Dunlevy (eds.), 1995. *Donegal: history and society : interdisciplinary essays on the history of an Irish county* Dublin: Geography Publications.

Nolan, W. & A. Simms 1998. *Irish towns: a guide to sources (compiled by Ríonach Ní Néill assisted by Yvonne Whelan),* Dublin: Geography Publications.

Nolan, W. & K. Whelan (eds.), 1990. *Kilkenny: history and society: interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications.

Noort, R. V. d. & A. O'Sullivan 2006. *Rethinking wetland archaeology,* London: Duckworth.

Norman, E. R. & J. K. S. St. Joseph 1969. *The early development of Irish society: The Evidence of Aerial Photography,* Cambridge: Cambridge University Press.

Ó Broin, G. 1983–1984. The holy wells of Wexford. *Journal of the Wexford Historical Society,* 9, 27–35.

Ó Carragáin, E. 1988. The meeting of Saint Paul and Saint Anthony: Visual and literary uses of a eucharistic motif, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. i. MacNiocaill & P. F. Wallace Galway: Galway University Press, 1–58.

Ó Carragáin, T. 2003. The Architectural Setting of the Cult of Relics in Early Medieval Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 133, 130–76.

–––– 2003. A Landscape Converted: Archaeology and early Church organisation on Iveragh and Dingle, Ireland', in *The Cross Goes North. Processes of Conversion in Northern Europe, AD300-1300* ed. M. Carver York: Woodbridge.

Ó Carragáin, T., J. O'Sullivan & T. Ó Caoimh 2005. A flying visit to Bishop's Island, Co. Clare. *Archaeology Ireland,* 19(1), 34–7.

Ó Catháin, S. 1992. Hearth-prayers and other traditions of Brigit: Celtic goddess and holy woman. *Journal of the Royal Society of Antiquaries of Ireland,* 122, 12–34.

–––– 1999. The festival of Brigit the Holy Woman. *Celtica,* 23, 231–60

Ó Ciardhuain, S. 1988. Medieval churches in South East Wexford. *Trowel,* 1, 13–5.

Ó Concheanainn, T. & N. Ní Sheághdha (eds.), 1987. *Catalogue of Irish manuscripts in the National Library of Ireland,* Dublin: Dublin Institute for Advanced Studies.

Ó Conchúir, D. 1993. Thoughts on the Early Christian Church. *Journal of the Kerry Archaeological and Historical Society,* 26, 93–106.

Ó Conchúir, D. n. 2000. *The pilgrim's round of Ardmore, Co. Waterford: a walk (1 hour) exploring some of the Christian antiquities of Ardmore Declain,* Dublin.

Ó Corrain, D. 1972. *Ireland before the Normans,* Dublin: Gill & Macmillan.

–––– 1978. Nationality and Kingship in pre-Norman Ireland, in *Nationality and the Pursuit of National Independence*, ed. T. Moody Belfast: Appletree Press for Irish Committee of Historical Sciences.

–––– 1981. The early Irish churches: some aspects of organization, in *Irish antiquity: essays and studies presented*

to Professor M.J. O'Kelly ed. D. Ó Corrain 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 *Landscape Archaeology in Ireland*, eds. F. Hammond & T. Reeves-Smyth Oxford: Tempus Reparatum, 247–51.

–––– 1985. Marriage in early Ireland, in *Marriage in Ireland*, ed. A. Cosgrove Dublin: University College Press.

–––– 1995. Ireland, Scotland and Wales, c.700 to the early eleventh century, in *The New Cambridge Medieval History, vol. 2, c.700-c.900*, ed. R. McKitterick Cambridge: Cambridge University Press, 43–63.

–––– 1997. Old-Norse place names I–II. *Peritia,* 11, 52, 187.

–––– 1998. The Vikings in Scotland and Ireland in the ninth century. *Peritia,* 12, 209–37.

–––– 1999. Vikings IV: is Sceillec Old Norse? *Peritia,* 13, 310–1

–––– 2000. Muirchertach Mac Lochlainn and the circuit of Ireland, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Dublin: Four Courts Press, 328–250.

–––– 2001. The Vikings in Ireland, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 17–28.

–––– 2005. Ireland c.800: Aspects of Society, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 549–608.

Ó Corráin, D., L. Breatnach & A. Breen 1984. The laws of the Irish. *Peritia,* 3, 382–438

Ó Cróinín, D. 1984. Rath Melsigi, Willibrord and the earliest Echternach manuscripts. *Peritia,* 3, 17–42

–––– 1986. New Light on Palladius. *Peritia,* 5, 276–83

–––– 1987. Merovingian politics and insular calligraphy: the historical background to the Book of Durrow and related manuscripts, in *Ireland and Insular art, A.D. 500-1200 : proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy, 40–3.

–––– 1989. Cummianus Longus and the iconography of Christ and the apostle in early Irish literature, in *Sages, saints and storytellers*, eds. D. Ó Corrain, L. Breatnach & K. McCone Maynooth: An Sagart, 268–79.

–––– 2005. Ireland, 400-800, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 995.

Ó Cróinín, D. i. 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, 94-9.

Ó Cuív, B. 1958. The impact of the Scandinavian invasions on the Celtic-speaking peoples, c.800-1100 A.D. : introductory papers read at plenary sessions of the International Congress of Celtic Studies held in Dublin, 6-10 July 1959, in *Proceedings of the International Congress of Celtic Studies held in Dublin*, ed. B. Ó Cuív Dublin, 132.

–––– (ed.) 1961. *Seven centuries of Irish learning, 1000-1700* Dublin: Published for Radio Éireann by the Stationery Office.

–––– 1985. Fragments of Irish Medieval treatises on horses. *Celtica,* 17, 113–22

–––– 1988. Personal names as an indicator of relations between native Irish and settlers in the Viking period, in *Settlement and Society in Medieval Ireland*, ed. J. Bradley Kilkenny: Boethus, 79–88.

Ó Danachair, C. 1954–1956. Representations of ploughs on grave-slabs at Claregalway friary. *Journal of the Galway Archaeological and Historical Society,* 26(1 & 2), 14–8.

–––– 1955. The holy wells of Co. Limerick. *Journal of the Royal Society of Antiquaries of Ireland,* 85, 193–217.

–––– 1958. The holy wells of north County Kerry. *Journal of the Royal Society of Antiquaries of Ireland,* 88, 153–63.

–––– 1960. The holy wells of Corkaguiney, Co. Kerry. *Journal of the Royal Society of Antiquaries of Ireland,* 90, 67–78.

–––– 1963. The Spade in Ireland. *Béaloideas,* 31, 98–114.

–––– 1970. The use of the spade in Ireland, in *The spade in Northern and Atlantic Europe*, eds. A. Gailey & A. Fenton Belfast: Queens's University, 49–56.

Ó Donnabháin, B. 1980. The stone fort at Cahercommaun. *The Other Clare,* 4, 6–7.

–––– 1994. Report on human remains from Ship Street Little, Dublin (Unpublished), Dublin: Dúchas (The Heritage Serive), Department of the Environment.

–––– 2001. aDNA and aRchaeology. *Archaeology Ireland,* 15(2), 34–5.

–––– 2001. A cut above: cranial surgery in medieval Dublin, in *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000* ed. S. Duffy Trinity College Dublin: Four Courts Press, 216–32.

Ó Donnabháin, B. & B. Hallgrímsson 2001. Dublin: the biological identity of the Hiberno-Norse town, in *Medieval Dublin II: proceedings of the Friends of Medieval Dublin Symposium 2000* ed. S. Duffy Trinity College Dublin: Four Courts Press, 65–87.

Ó Donnchadha, B. 2007. The Oldest church in Ireland's 'Oldest Town'. *Archaeology Ireland,* 21(1), 8–10.

Ó Drisceoil, C. 1999. A souterrain at Haynestown, County Louth. *Journal of the Louth Archaeological and Historical Society,* 24(3), 431–4.

–––– 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 Duigneáin, P. 1971. Toberpatrick. *Teathbha,* 1(2), 115–7.

Ó Finn, M. 1969. History of Longford: ancient and modern. *Teathbha,* 1(1), 10–.

Ó Floinn, R. 1978. A souterrain at Termonfeckin. *Journal of the Louth Archaeological and Historical Society,* 19(2), 128–30.

–––– 1980. Medieval crucifix figure from Skellig Michael. *Journal of the Kerry Archaeological and Historical Society,* 13, 45–9.

–––– 1983. The Shrine of the Book of Dimma. *Eile: Journal of the Roscrea Heritage Society,* 1, 25-39.

–––– 1983. Viking and Romanesque influences 1000 A.D.-1169 A.D. , in *Treasures of Ireland: Irish art 3000 B.C.-1500 A.D.*, ed. M. Ryan Dublin: Royal Irish Academy, 58-69.

–––– 1986. A bronze shield grip of Viking age date from the River Bann *Ulster Journal of Archaeology*, 106–8.

–––– 1987. Irish Romanesque crucifixion figures in metal, in *Figures from the Past: studies on figurative art in Christian Ireland : in honour of Helen M. Roe* ed. E. Rynne Dun Laoghaire: Glendale Press for the Royal Society of Antiquaries of Ireland, 168–88.

–––– 1987. Schools of metalworking in eleventh and twelfth century Ireland, in *Ireland and Insular Art, A.D 500–1200: proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy.

–––– 1989. The Soiscél Molaise. *Clogher Record,* 13(2), 51-63.

–––– 1989–1990. A fragmentary house-shaped shrine from Clonard, Co. Meath. *Journal of Irish Archaeology,* 5, 49–55.

–––– 1989–1991. A Romanesque crucifix figure from Athgarrett. *Journal of the Kildare Archaeological and Historical Society,* 17, 211–2.

–––– 1990. The "Tipperary Brooch": a reprovenance. *Tipperary Historical Journal,* 3, 187–92.

–––– 1990. Two ancient bronze bells from Rath Blathmach, Co. Clare. *North Munster Antiquarian Journal,* 32, 19–31.

–––– 1991. Ecclesiastical objects of the Early Medieval period from Co. Clare. *The Other Clare,* 15, 12–4.

–––– 1992. A lintel grave cemetery at Killlygarvan, Co. Donegal. *Donegal Annual,* 44, 42–50.

–––– 1993. Museum gets cold from Christie's. *Archaeology Ireland,* 7(3), 10.

–––– 1994. *Irish Shrines and Reliquaries of the Middle Ages,* Dublin: National Museum of Ireland in association with Country House.

–––– 1994. The Kavanagh Charter Horn, in *Irish Antiquity: essays and studies presented to Professor M.J. O'Kelly* ed. D. Ó Corrain Blackrock Four Courts Press, 269–78.

–––– 1995. Clonmacnoise: art and patronage in the early medieval period, in *From the Isles of the North: early medieval art in Ireland and Britain : proceedings of the third International Conference on Insular Art, held in the Ulster Museum, Belfast, 7-11 April, 1994* ed. C. Bourke Belfast: HMSO.

–––– 1995. Of Silver, Slaves and Saints- The 'Viking Age Ireland' Exhibition at the National museum. *Archaeology Ireland,* 9(3), 26–9.

–––– 1995. Sandhills, Silver and Shrines: Fine metalwork of the medieval period in Donegal, in *Donegal: History and County*, eds. W. Nolan, L. Ronayne & M. Dunlevy Dublin: Dublin: Templogue, Geography Publications, 85–149.

–––– 1997. Innovation and conservatism in Irish metalwork of the Romanesque period, in *Insular Tradition*, eds. C. E. Karkov, M. Ryan & R. Farrell Albany: State University of New York Press, 259-81.

–––– 1997. Insignia Columbae I, in *Studies in the Cult of Saint Columba*, ed. C. Bourke Dublin: Four Courts Press, 136-61.

–––– 1998. The archaeology of the early Viking age in Ireland, in *Ireland and Scandinavia in the early Viking age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press, 131–65.

–––– 1998. Clonmacnoise: art and patronage in the early medieval period, in *Clonmacnoise Studies: Seminar Papers Vol. 1*, ed. H. King Dublin: Wordwell, 87–100.

–––– 1998. Two Viking burials from County Wicklow. *Wicklow Archaeology and History,* 1, 29–35.

–––– 2001. Irish and Scandinavian art in the early medieval period, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 87–97.

Ó Floinn, R. & T. Fanning 1985. The evangelist slab at Athlone and some additional cross-inscribed stones from Athlone and Lemanaghan. *Journal of the Old Athlone Society,* 2(6), 116-23.

Ó Gallachóir, P. 1997. Columban Donegal. *Donegal Annual,* 49, 55–67.

Ó hAllmhurain, G. 1978. Senan of Inis Cathaigh. *Dal gCais,* 4, 49–53.

Ó Hanluain, E. 1932. The "drunides" stone of Killeen Cormac, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 11(3), 103–13.

–––– 1938. The archæology of the Slieve Bloom Mountains. *Journal of the Kildare Archaeological and Historical Society,* 12(3), 107–10.

–––– 1939. The Maynooth ogham stone, a new reading, and a new decipherment of the British oghams. *Journal of the Kildare Archaeological and Historical Society,* 12(4), 170–87.

–––– 1940–1941. The Killeen Cormaic ogham stone. *Journal of the Kildare Archaeological and Historical Society,* 12(5), 201–13.

O hÉailidhe, P. 1982. Three unrecorded early grave-slabs in County Dublin. *Journal of the Royal Society of*

Antiquaries of Ireland, 112, 139–41.

–––– 1984. Decorated stones at Kilgobbin, County Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 114, 142–4.

Ó hÉailidhe, P. 1957. The Rathdown slabs. *Journal of the Royal Society of Antiquaries of Ireland,* 87, 75–88.

–––– 1958. Fassaroe and associated crosses. *Journal of the Royal Society of Antiquaries of Ireland,* 88, 101–10.

–––– 1959. Some unpublished antiquities of the Early Christian period in Dublin area (note). *Journal of the Royal Society of Antiquaries of Ireland,* 89, 205–7.

–––– 1960. Bullauns at Killarney, Co. Kerry (note). *Journal of the Royal Society of Antiquaries of Ireland,* 90, 83–4.

–––– 1967. The crosses and slabs at St. Berrihert's Kyle in the Glen of Aherlow, in *North Munster Studies: essays in commemoration of Monsignor Michael Moloney* ed. E. Rynne Limerick: Thomond Archaeological Society, 102–26.

–––– 1973. Early Christian grave slabs in the Dublin region. *Journal of the Royal Society of Antiquaries of Ireland,* 103, 51–64.

–––– 1982. Three unrecorded early grave-slabs in County Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 112, 139-41.

–––– 1984. Decorated Stones at Kilgobbin, County Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 114, 142-4.

Ó hÉailidhe, P. & E. Prendergast 1977. Two unrecorded graveslabs in County Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 107, 139–42.

Ó hEochaidhe, M. 1962. A preliminary report on the archaeological investigations carried out at the cross block, Dublin castle (unpublished manuscript dated November 1961-February 1962), Dublin.

Ó hIceadha, G. 1941. Excavation of church site at Old Kilcullen Townland, Co. Kildare (note). *Journal of the Royal Society of Antiquaries of Ireland,* 71, 148–51.

Ó Lochlainn, C. 1940. Roadways in ancient Ireland, in *Essays and studies presented to Professor Eoin MacNeill on the occasion of his seventieth birthday May 15th, 1938* ed. J. Ryan Dublin: Faoi Chomhartha na dTrí gCoinneal, 465–74.

Ó Lochlainn, C. 1961. *Cruach Phádraic: Ireland's holy mountain* Dublin: At the Three Candles

O'Mahoney, T. & Richey, A.G. 1873. *Ancients Laws of Ireland V3: Or Customary Law and The Book of Aicill,* Longmans, Green, Reader and Dyer, London.

Ó Maoleachlainn, P. L. 1973. Clonmacnois and the XIIth century synods. *Teathbha,* 1(3), 195–201.

O'Meara, J. 1951. *The first version of the Topography of Ireland,* Dundalgan Press, Dundalk.Ó Mórdha, S. P. 1956. Irish manuscripts in St. Macarten's Seminary, Monaghan. *Celtica,* 3, 279–87

Ó Muirgheasa, E. 1936. The Holy Wells of Donegal. *Béaloideas,* 1(2), 143–62.

Ó Muraíle, N. 2003. Uí Fhailghe, Uíbh Fhailí, etc.: the name of Offaly. *Offaly Heritage,* 1, 9–11.

Ó Murchadha, D. 1969. Stone sculpture in Pre-Norman Ireland. *Cappuchin Annual,* 1969, 172-200.

–––– 1980. Rubbings taken of the inscriptions on the Cross of the Scriptures, Clonmacnois. *Journal of the Royal Society of Antiquaries of Ireland,* 110, 47–51.

Ó Murchadha, D. & G. Ó Murchú 1988. Fragmentary inscriptions from the West Cross at Durrow, the South Cross at Clonmacnois, and the Cross of Kinnitty. *Journal of the Royal Society of Antiquaries of Ireland,* 118, 53–66.

Ó Murchadha, S. 1992. Diseart Tola and its environs. *The Other Clare,* 16, 53–7.

–––– 1993. Diseart Tola and its environs-Part II. *The Other Clare,* 17, 36–42.

–––– 1994. Diseart Tola and its environs-Part III. *The Other Clare,* 18, 20–2.

–––– 1995. Diseart Tóla and its environs-Part IV. *The Other Clare,* 19, 18–21.

Ó Murnaghan, A. 1945. A note on the Cross in Irish archæology. *Journal of the Louth Archaeological and Historical Society,* 11(1), 61–2.

Ó Néill, J. 1999. A Norse settlement in rural county Dublin. *Archaeology Ireland,* 13(4), 8–10.

–––– 2001. Report of excavations at Longford Street Little (Unpublished), Dublin: Heritage Service, Department of Environment.

–––– 2003. Landscape, marginality and the practice of wetland archaeology in Ireland. *Journal of Wetland Archaeology,* 3, 51–9.

–––– 2004. Excavations at Longford Street Little, Dublin: an archaeological approach to Dubh Linn, in *Medieval Dublin V: proceedings of the Friends of Medieval Dublin Symposium 2003* ed. S. Duffy Trinity College Dublin: Four Courts Press, 73–90.

–––– 2004–2005. Lapidibus in igne calefactis coquebatur: The historical burnt mound 'tradition'. *Journal of Irish Archaeology,* 12 & 13, 79–85.

–––– 2006. Excavaton of pre-Norman structures on the site of an enclosed Early Christian cemetery at Cherrywood, County Dublin, in *Medieval Dublin VII: proceedings of the Friends of Medieval Dublin Symposium 2002* ed. S. Duffy Dublin: Four Courts Press, 66–88.

Ó Rahilly, C. 1998. A classification of bronze stick-pins from the Dublin excavations, in *Dublin and beyond the Pale: studies in honour of Patrick Healy,* ed. C. Manning Bray: Wordwell in association with Rathmichael Historical Society, 23-33.

Ó Riain, P. 1972. Boundary associations in early Irish society. *Studia Celtica,* 7, 12–29.

–––– 1991. Dating the Stowe Missal. *Archaeology Ireland,* 5(1), 14–5.

–––– 1991. The shrine of the Stowe Missal, redated. *Proceedings of the Royal Irish Academy Section C,* 91, 285–

95.

Ó Riain, P. & G. Murray 2005. The Cross of Cong- some recent discoveries. *Archaeology Ireland,* 19(1), 18–21.

Ó Riain-Raedel, D. 2000. German influence on Munster Church and kings in the twelfth century, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Dublin: Four Courts Press, 323–30.

Ó Ríordáin, B. 1955. Crannog-type structures in Whitewood Lake, County Meath. *Journal of the Louth Archaeological and Historical Society,* 13(3), 289.

–––– 1955. Some recent finds from Leinster. *Journal of the Kildare Archaeological and Historical Society,* 13(6), 299–303.

–––– 1955. Three recently discovered souterrains in County Louth. *Journal of the Louth Archaeological and Historical Society,* 13(3), 288.

–––– 1956. Three souterrains in County Louth [Channonrock, Demesne (Dundalk) and Newtownbalregan, and appendix: list of Co. Louth souterrains]. *Journal of the Louth Archaeological and Historical Society,* 13(4), 441–50.

–––– 1966. Crannog at Knockroe, near Kilfenora, Co. Clare. *North Munster Antiquarian Journal,* 10(1), 71.

–––– 1969. Notes on a souterrain at Kellystown, Co. Wexford. *Journal of the Wexford Historical Society,* 2, 49–50.

–––– 1971. Excavations at High Street and Winetavern Street, Dublin. *Medieval Archaeology,* 73–85.

–––– 1976. The High Street excavations, in *Proceedings of the Seventh Viking Congress, Dublin, 15-21 August 1973*, eds. B. Almqvist & D. Greene London: Viking society for Northern Research.

–––– 1980. The Derrynaflan hoard. *Antiquity,* 54, 216–7.

–––– 1981. The Derrynaflan Hoard. *Old Kilkenny Review,* 206–7.

Ó Ríordáin, B. & E. Rynne 1961. National Museum of Ireland: archaeological acquisitions in the year 1959: Cist-burial at Caltragh, Co. Galway. *Journal of the Royal Society of Antiquaries of Ireland,* 91, 45–51.

Ó Ríordáin, D. 1998. Clonmacnoise- when experts meet... *Archaeology Ireland,* 12(3), 22.

Ó Ríordáin, S. P. 1939–1940. Excavations at Cush, Co. Limerick. *Proceedings of the Royal Irish Academy Section C,* 45, 83–181.

–––– 1941–1942. The excavation of a large earthen ring-fort at Garranes, Co. Cork. *Proceedings of the Royal Irish Academy Section C,* 47, 77–150.

–––– 1944. The genesis of the Celtic Cross, in *Féilscríbinn Tórna: Essays presented to Professor Tadhg Ua Donnchadha*, ed. S. Pender Cork: Cor University Press.

–––– 1947. Miscellaneous discoveries in the Dublin neighbourhood. *Journal of the Royal Society of Antiquaries of Ireland,* 77, 84–8.

–––– 1948–1950. Lough Gur excavations: Carrig Aille and the 'Spectacles'. *Proceedings of the Royal Irish Academy Section C,* 52, 39–111.

–––– 1949. 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, 262–3.

–––– 1951. Ring-fort, Letterkeen townland, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 71.

Ó Ríordáin, S. P. & J. B. Foy 1941. The excavation of Leacanabuile Stone Fort, near Cahirciveen, Co. Kerry. *Journal of the Cork Historical and Archaeological Society,* 46, 85–91.

Ó Ríordáin, S. P. & P. J. Hartnett 1943–1944. The excavation of Ballycatteen Fort, Co. Cork. *Proceedings of the Royal Irish Academy Section C,* 49.

Ó Ríordáin, S. P. & J. Hunt 1942. Mediaeval dwellings at Caherguillamore, Co. Limerick. *Journal of the Royal Society of Antiquaries of Ireland,* 72, 37–63.

Ó Ríordáin, S. P. & A. T. Lucas 1946–1947. Excavation of a small crannog at Rathjordan, Co. Limerick. *North Munster Antiquities,* 5, 68–77.

–––– 1946–1948. Excavation of a small crannog at Rathjordan, Co. Limerick. *North Munster Antiquarian Journal,* 2–3, 68–77.

Ó Ríordáin, S. P. & M. MacDermott 1951–1952. The excavation of a ring-fort at Letterkeen, Co. Mayo. *Proceedings of the Royal Irish Academy Section C,* 54, 89–119.

Ó Ríordáin, S. P. & E. Rynne 1961. A settlement in the sandhills at Dooey, Co. Donegal. *Journal of the Royal Society of Antiquaries of Ireland,* 91, 58–64.

O'Brien, C. 2006. *Stories from a sacred landscape: Croghan Hill to Clonmacnoise,* Tullamore: Offaly County Council.

O'Brien, S. 1955. The ancient parish of Kilmacahill. *Old Kilkenny Review,* 8, 16–8.

O'Farrell, F. 1984. 'The Cross in the Field', Kilfenora—part of a 'Founder's Tomb'? *North Munster Antiquarian Journal,* 26, 14–35.

O'Hare, P. 1996. Holy wells and other sites of pilgrimage within a portion of East Kerry. *Journal of the Kerry Archaeological and Historical Society,* 29, 55–98.

O'Kelly, O. 1961. Oghamcraobh ar liagan. *Old Kilkenny Review,* 13, 29.

O'Regan, D. J. 1987. A note on a destroyed ringfort near Drom, Templemore, Co. Tipperary (note). *North Munster Antiquarian Journal,* 29, 94.

O'Sullivan, A. 1993–1994. An Early Historic period fishweir on the Fergus estuary, Co. Clare. *North Munster Antiquarian Journal,* 35, 52–61.

O'Sullivan, A. M. 1984–1985. Garrylough Mill and the general development of water mills in Co. Wexford. *Journal of the Wexford Historical Society,* 10, 86–94.

O'Brien, C. 1994. New finds from county Offaly. *Archaeology Ireland,* 8(1), 16–7.

O'Brien, C., K. Selby, Z. Ruiz, A. Brown, M. Dinnin, C. Caseldine, P. Langdon & I. Stuijts 2005. A sediment-based multiproxy palaeoecological approach to the environmental archaeology of lake dwellings (crannogs), central Ireland. *Holocene,* 15(5), 707–19.

O'Brien, E. 1988. Churches of South-east County Dublin, Seventh to twelfth century, in *Keimelia*, eds. P. F. Wallace & G. Mac Niocaill Galway, 325–48.

–––– 1992. Pagan and Christian burial in Ireland during the first millennium A.D.: continuity and change, in *The Early Church in Wales and the West: recent work in Early Christian archaeology, history and place-names*, eds. N. Edwards & A. Lane Oxford: Oxbow Press, 130–7.

–––– 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), 13–5.

–––– 1998. The location and context of Viking-age burials at Kilmainham and Islandbridge, Dublin, in *Ireland and Scandinavia in the early Viking age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press, 203–21.

–––– 2003. Burial practices in Ireland: first to seventh centuries A.D., in *Sea change: Orkney and Northern Europe in the later Iron Age, A.D. 300-800*, eds. J. Downes & A. Ritchie Angus: Pinkfoot Press, 63–72.

O'Brien, G. (ed.) 1999. *Derry and Londonderry: history & society : interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications, 1999.

O'Brien, J. & P. Harbison 1996. *Ancient Ireland: from prehistory to the middle ages* New York: Oxford University Press.

O'Brien, R. 2007. If the shoe fits: a new find from Annaholty Bog, Co. Tipperary. *Seanda: National Roads Authority Magazine,* 2, 47.

O'Brien, R. & I. Russell 2005. The Hiberno-scandinavian site of Woodstown 6, County Waterford, in *Recent Archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 111–24.

O'Carroll, C. 1988. Iniscathaigh Scattery Island, myth, miracle and legend. *The Other Clare,* 12, 18–20.

O'Carroll, E. 1999. A trek through the bogs. *Archaeology Ireland,* 13(3), 32–3.

–––– 2000. Ireland's earliest crozier? *Archaeology Ireland,* 14(2), 24–5.

O'Carroll, J. 1974. St. Rioch's churchyard (note). *Old Kilkenny Review*, 57.

O'Carroll, M. 2000. Our Lady in early medieval Ireland, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Four Courts Press, 178–81.

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.

–––– 2006. The many lives of Castlefarm. *Seanda: National Roads Authority Magazine,* 1, 19–24.

–––– 2007. The Elusive Iron Age: a rare and exciting site type is uncovered at Lismullin, Co. Meath. *Seanda: National Roads Authority Magazine,* 2, 52–4.

–––– 2007. Iron Age enclosure at Lismullin, Co. Meath. *Archaeology Ireland,* 21(2), 10–3.

O'Connell, D. B. 1937. Cross-slab at Inch, parish of Killaha, Co. Kerry (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 303–4.

–––– 1938. Fort with souterrain at Glanballyma, Co. Kerry (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 145.

–––– 1939. An inscribed stone fragment from Co. Kerry (note). *Journal of the Royal Society of Antiquaries of Ireland,* 69, 45–6.

O'Connell, G. & P. Ó Flanagáin 1986. The parish of Oughaval (Westport)-a brief historical sketch. *Cathair Na Mart,* 6, 128–44.

O'Connell, M. 1994. *Connemara: Vegetation and land use since the last Ice Age,* Dublin: Office of Public Works.

O'Connell, P. 1957. A Castlekieran cross-slab (note). *Journal of the Royal Society of Antiquaries of Ireland,* 87, 167–8.

–––– 1959. Kells - early and mediaeval, Part I Dun-Chuile Sibrinne. *Ríocht na Mídhe,* 2(1), 18–36.

–––– 1960. Kells, early and mediaeval, Part II. *Ríocht na Mídhe,* 2(2), 8–22.

O'Connor, L. 1966. Faughart investigation, 1966. *Journal of the Louth Archaeological and Historical Society,* 16(2), 125–9.

–––– 1991. Irish Iron Age and Early Christian whetstones. *Journal of the Royal Society of Antiquaries of Ireland,* 121, 45–76.

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'Connor, S. 2000. Study of the Kilmaclasser area, church and graveyard. *Cathair Na Mart,* 20, 129–39.

O'Conor, K. 1996. Dunamse Castle. *Journal of Irish Archaeology,* 7.

Oddy, W. A. (ed.) 1979. *Aspects of early metallurgy,* London: British Museum.

Oddy, W. A. & I. M. McIntyre 1973. St. Mel's Crozier-technical examination and report on conservation and restoration in 1971-2. *Journal of the Royal Society of Antiquaries of Ireland,* 103, 35–46.

O'Dea, J. 1996. Archaeological excavation at Dysert O'Dea 1995. *The Other Clare,* 20, 33.

O'Donnell, E. 1997. The holy wells of St. Colmcille. *Donegal Annual,* 49, 7–11.

O'Donnell, M. G. 1984. *An analysis of E ware in Ireland* (Unpublished M.A.) Cork: University College Cork.

O'Donovan, E. 2005. There is an antiquarian in us all. *Archaeology Ireland,* 19(3), 16–7.

O'Donovan, J. & E. O'Curry 1997. *The antiquities of Co. Clare (edited by Maureen Comber),* Ennis.

O'Donovan, P. F. & E. FitzPatrick 1995. *Archaeological inventory of County Cavan*: Stationery Office.

O'Dowd, M. & S. Wichert (eds.), 1995. *Chattel, servant or citizen: women's status in church, state and society* Belfast: Queen's University of Belfast, Institute of Irish Studies.

O'Driscoll, D. & R. A. S. Macalister 1942. The White Island Sculptures (note). *Journal of the Royal Society of Antiquaries of Ireland*, 116–9.

O'Farrell, F. 1984. Carved stone at Rathmullan, County Donegal (note). *Journal of the Royal Society of Antiquaries of Ireland,* 114, 149–50.

–––– 1997. Celtic Headaces. *Archaeology Ireland,* 11(1), 8–9.

–––– 2004. The monks of Dysert O'Dea. *Archaeology Ireland,* 18(3), 26–7.

Oftedal, M. 1976. Scandinavian place-names in Ireland, in *Proceedings of the Seventh Viking Congress, Dublin, 15-21 August 1973* eds. B. Almqvist & D. Greene London: Viking Society for Northern Research, 125–33.

O'Hara, B. 1991. *The Archaeological Heritage of Killasser, Co. Mayo,* Galway: Research and Development Unit, Regional Technical Office.

O'Hara, R. 2007. Roestown 2, Co. Meath: an excavation on the M3 Clonee to North of Kells motorway scheme, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 141–51.

O'Hegarty, M. 1959. Clara Old Church and Freneystown Castle. *Old Kilkenny Review,* 11, 55–60.

–––– 1974. Kilfane. *Old Kilkenny Review*, 7–20.

Ohlgren, T. H. (ed.) 1986. *Insular and Anglo-Saxon Illuminated Manuscripts: An Iconographic Catalogue ca. A. D. 625 to 1100* New York: Garland.

Okasha, E. & K. Forsyth 2001. *Early Christian inscriptions of Munster: a corpus of the inscribed stones,* Cork: Cork University Press.

O'Keeffe, P. 2001. *Ireland's principal roads, Vol. 1: A.D. 123-1608,* Dublin: National Roads Authority.

–––– 2007. Through the valleys and the hills: travels on the N7. *Seanda: National Roads Authority Magazine,* 2, 44–6.

O'Keeffe, T. 1985–1986. The Church and Castle of Confey, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 16(5), 408–17.

–––– 1988. Carlow. *Archaeology Ireland,* 2(4), 131–4.

–––– 1992. Early Christian hermitage discovered on Omey Island. *Archaeology Ireland,* 6(3), 5.

–––– 1992. Romanesque architecture and sculpture at Ardmore, in *Waterford History and Society*, eds. W. Nolan & T. P. Power Dublin: Geography Publications.

–––– 1994. Lismore and Cashel: reflections of the beginnings of Romanesque architecture in Munster *Journal of the Royal Society of Antiquaries of Ireland,* 124, 118–.

–––– 1994. Omey and the sand of time. *Archaeology Ireland,* 8(2), 14–7.

–––– 1995. The Romanesque Portal, in *An Archaeological Survey of St. Molagga's Church, Aghacross, Mitchelstown, Co. Cork*, eds. K. Hanley, M. Weaver & J. Monk Cork: Cork County Council, 24–6.

–––– 1995. The Romanesque portal at Clonfert Cathedral and its iconography, in *From the Isles of the North. Proceedings of the 3rd International Conference on Insular Art, Ulster Museum, Belfast 7-11 Apr., 1994*, ed. C. Bourke Belfast: HMSO.

–––– 1995. Rural settlement and cultural identity in Gaelic Ireland, 1000-1500 *Ruralia 1,* 1.

–––– 1997. Diarmait Mac Murchada and Romanesque Leinster: four twelfth-century churches in context. *Journal of the Royal Society of Antiquaries of Ireland,* 127, 52–79.

–––– 1998. Architectural traditions of the early medieval church in Munster in *Early Medieval Munster: Archaeology, History and Society*, eds. M. A. Monk & J. Sheehan Cork: Cork University Press.

–––– 1998. The fortifications of western Ireland, AD 1100-1300, and their interpretation. *Journal of the Galway Archaeological and Historical Society,* 50.

–––– 2000. *Medieval Ireland: an archaeology,* Stroud: Tempus.

–––– 2000. Romanesque as metaphor: architecture and reform in early twelfth-century Ireland, in *Seanchas: Studies in Early and Medieval Irish Archaeology, history and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Four Courts Press, 313–22.

–––– 2003. *Romanesque Ireland: architecture and ideology in the twelfth century,* Dublin: Four Courts Press.

–––– 2004. *Ireland's Round Towers,* Stroud: Tempus.

–––– 2004. *Medieval Fore: an archaeological wonder in the Westmeath landscape,* Bray: Wordwell.

–––– 2007. *Archaeology and the pan-European romanesque,* London: Duckworth.

O'Kelly, M. J. 1942. A survey of the antiquities of the Barony of Small County, County Limerick. Part I. *North Munster Antiquarian Journal,* 3(2), 75–97.

–––– 1942–1943. A survey of the antiquities of the Barony of Small County, County Limerick. Part III. *North*

Munster Antiquarian Journal, 3(4), 224–45.

–––– 1943. A survey of the antiquities of the Barony of Small County, County Limerick. Part II. *North Munster Antiquarian Journal,* 3(3), 169–84.

–––– 1944–1945. A survey of the antiquities of the Barony of Small County, County Limerick. Part IV. *North Munster Antiquarian Journal,* 4(1), 16–53.

–––– 1947-1948. Excavation of a long-cist at Coolnacrannagh, Macroom, Co. Cork *Journal of the Cork Historical and Archaeological Society,* 52-53, 36-40.

–––– 1951. Forts, Carrigillihy townland, near Union Hall, Co. Cork. *Journal of the Royal Society of Antiquaries of Ireland,* 81, 71–2.

–––– 1951-1952. An Early Bronze Age Ring-fort at Carrigillihy, Co. Cork *Journal of the Cork Historical and Archaeological Society,* 56-57, 69-86.

–––– 1952–1953. Three Promontory Forts in Co. Cork. *Proceedings of the Royal Irish Academy Section C,* 55, 25–59.

–––– 1954. Excavations and experiments in Ancient Irish cooking-places. *Journal of the Royal Society of Antiquaries of Ireland,* 84, 105–55.

–––– 1955–1956. An island settlement at Beginish, Co. Kerry. *Proceedings of the Royal Irish Academy Section C,* 57, 159–94.

–––– 1957–1959. Church Island near Valencia, Co. Kerry. *Proceedings of the Royal Irish Academy Section C,* 59, 57–136.

–––– 1961. A stone bowl of Viking type from Beginish Island, Co. Kerry. *Journal of the Royal Society of Antiquaries of Ireland,* 91, 64–8.

–––– 1961. A wooden bridge on the Cashen River, Co. Kerry. *Journal of the Royal Society of Antiquaries of Ireland,* 91, 135–52.

–––– 1962. Béal Ború. *Journal of the Cork Historical and Archaeological Society,* 67, 1–27.

–––– 1962–1964. Two ring-forts at Garryduff, Co. Cork. *Proceedings of the Royal Irish Academy Section C,* 63, 17–125.

–––– 1965. The belt-shrine from Moylough, Sligo. *Journal of the Royal Society of Antiquaries of Ireland,* 95, 149–88.

–––– 1970. Problems of Irish ringforts, in *The Irish Sea Province in archaeology and history*, ed. D. Moore Cardiff: Aberystwyth 50–4.

–––– 1975. *Archaeological Survey and Excavtion of St. Vogue's Church, Enclosure and other Monuments at Carnsore, Co. Wexford,* Electricity Supply Board: Dublin.

–––– 1975. Monastic sites in the west of Ireland. *Scottish Archaeological Forum,* 5, 1–16.

O'Kelly, M. J. & E. Shee Twohig 1968. Three souterrains in Co. Cork *Journal of the Cork Historical and Archaeological Society,* 73, 40-7.

O'Leary, A. 1999. The Identities of the Poet(s) Mac Coisi: A Reinvestigation. *Cambridge Medieval Celtic Studies,* 38, 53–72.

O'Leary, M. 2000. Kilmaleery church and holy well. *The Other Clare,* 24, 50–1.

O'Leary, P. 1988. Honour-bound: the social context of early Irish heroic geis. *Celtica,* 20, 85–107.

–––– 1991. Jeers and judgments: laughter in early Irish literature. *Cambridge Medieval Celtic Studies,* 22, 15–29.

O'Loughlin, T. 1996. The view from Iona: Adomnán's mental maps. *Peritia,* 10, 98–122

–––– 1997. Marriage and sexuality in the Hibernensis. *Peritia,* 11, 188–206

–––– 2000. The Plan of New Jerusalem in the Book of Armagh. *Cambridge Medieval Celtic Studies,* 39, 23–38.

O'Mahony, F. (ed.) 1994. *The Book of Kells: Proceedings of a conference at Trinity College Dublin 6-9 September 1992,* Aldershot: Scolar Press.

O'Meadhra, U. 1979. *Early Christian, Viking and Romanesque art : motif-pieces from Ireland : an illustrated and descriptive catalogue of the so-called artists' 'trial-pieces' from c.5th-12th cents. AD, found in Ireland, c.1830-1973,* Stockholm: Almqvist & Wiksell.

–––– 1987. *Early Christian, Viking and Romanesque art : motif-pieces from Ireland / by Uaininn O'Meadhra. 2, discussion on aspects of find-context and function,* Stockholm: Almqvist & Wiksell.

–––– 1987. Irish, Insular, Saxon and Scandinavian elements in the motif-pieces from Ireland, in *Ireland and insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985,* ed. M. Ryan Dublin: Royal Irish Academy, 159-65.

–––– 1991. A medieval Dubliner's talismatic portrait? An incised profile cut-out head from Christchurch Place, Dublin. *Cambridge Medieval Celtic Studies,* 21, 39-54.

–––– 1997. Motif-pieces and other decorated bone and antler work, in *Late viking age and medieval Waterford: excavations 1986-1992 /Maurice F. Hurley, Orla M.B. Scully with Sarah W.J. McCutcheon ; based on excavations and stratigraphic reports by Andrew S.R. Gittins ... [et al.] ; editors: Terry Barry, Rose M. Cleary and Maurice F. Hurley,* eds. M. F. Hurley, O. M. B. Scully & S. W. J. McCutcheon Waterford: Waterford Corporation.

O'Murnaghan, A. 1950. Interlinear design in the Book of Kells: a supplementary note. *Journal of the Royal Society of Antiquaries of Ireland,* 80, 97.

O'Neill, A. 1989. 'St. Anthony and St. Paul in the Desert'; a note on a common motif on the crosses of Muiredach and Moone. *Trowel,* 2, 17–9.

O'Neill, P. F. 1935. Cross inscribed stones at Caherlehillan Co. Kerry (note). *Journal of the Royal Society of Antiquaries of Ireland,* 65, 333.

O'Neill, T. 1984. *The Irish hand: scribes and their manuscripts from the earliest times to the seventeenth century with an exemplar of Irish scripts,* Portlaoise: Dolmen Press.

–––– 1989. Book-making in early Christian Ireland. *Archaeology Ireland,* 3(3), 96–100.

–––– 2006. Parknahown 5: An Extensive Cemetery at the River Goul. *Seanda: National Roads Authority Magazine,* 1, 32.

–––– 2007. The hidden past of Parknahown, Co. Laois, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 133–9.

–––– 2008. Unearthing the past: discoveries at Parknahown, Co. Laois. *Ossory, Laois and Leinster,* 3, 1–24.

O'Neill, T. P. 1973–1974. Crannog at Knockanally, Co. Kildare [note]. *Journal of the Kildare Archaeological and Historical Society,* 15(3), 250.

O'Rahilly, C. 1988. Recent Research in Limerick City. *Archaeology Ireland,* 2(4), 140–4.

O'Regan, D. 1992. A tower house and ringfort at Pallas Upper, Borrisoleigh. *Tipperary Historical Journal,* 5, 206–9.

O'Reilly, J. 1987–1988. Early medieval text and image: the wounded and exalted Christ,. *Peritia,* 6–7, 72–118

–––– 1995. The Hiberno-Latin tradition of the evangelists and the Gospels of Mael Brigte. *Peritia,* 9, 290–309

O'Reilly, M. 1956. Ardbraccan. *Ríocht na Mídhe,* 1(2), 15–9.

O'Reilly, S. 1997. *Irish churches and monasteries: an historical and architectural guide,* Cork: Collins Press.

Organ, R. 1969. Examination of the Ardagh Chalice- a case history, in *Application of Science in examination of works of art*, ed. W. J. Young Boston: Museum of Fine Arts, 238–71.

O'Rourke, D. 1988. *Leather footware from Viking Dublin,* (Unpublished M.A.) Dublin: University College Dublin.

–––– 1988. Notes on an early Shoe type. *Trowel,* 1, 1–3.

–––– 1991. First steps in medieval footwear. *Archaeology Ireland,* 5(1), 22–3.

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, 115–8.

O'Shea, M. 1995. St. Canice's Muckalee: an Early Christian site. *Old Kilkenny Review*, 41–3.

O'Sullivan, A. 1966. The colophon of the Cotton psalter (Vitellius f xi) (note). *Journal of the Royal Society of Antiquaries of Ireland,* 86, 179–80.

–––– 1978. Romanesque doorway, Dysart O'Dea. *Dal gCais,* 4, 45.

–––– 1988. A note on the Hollywood Stone, Lockstow Upper, Co. Wicklow. *Trowel,* 1, 29–30.

–––– 1990. Wood in Archaeology. *Archaeology Ireland,* 4(2), 69–73.

–––– 1994. Harvesting the waters. *Archaeology Ireland,* 8(1), 10–2.

–––– 1997. Last foragers or first farmers? . *Archaeology Ireland,* 11(40), 14–6.

–––– 1998. *The archaeology of lake settlement in Ireland* Dublin: Royal Irish Academy.

–––– 1998. Crannogs in contested landscapes. *Archaeology Ireland,* 12(2), 15.

–––– 1998. Warriors, legends and heroes: the archaeology of hurling. *Archaeology Ireland,* 12(3), 32–4.

–––– 1998. Woodmanship and the supply of underwood and timber to Anglo-Norman Dublin, in *Dublin and beyond the Pale: Studies in honour of Paddy Healy*, ed. C. Manning Bray: Wordwell in association with the Rathmichael Historical Society, 61–9.

–––– 2000. *Crannogs: lake-dwellings of early Ireland,* Dublin: Country House.

–––– 2001. *Foragers, farmers and fishers in a coastal landscape: an intertidal archaeological survey of the Shannon estuary,* Dublin: Royal Irish Academy.

–––– 2003. The Harvard Archaeological Mission and the politics of the Irish Free State. *Archaeology Ireland,* 17(1), 20–3.

–––– 2003. 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.

O'Sullivan, A. & D. Boland 1998. Medieval Irish engineers bridge the River Shannon. *Discovering Archaeology,* 1, 32–7.

–––– 2000. *The Clonmacnoise bridge : an early medieval river crossing in County Offaly,* Bray: Wordwell.

O'Sullivan, A. & L. Downey 2006. Holy Wells. *Archaeology Ireland,* 20(1), 35–7.

O'Sullivan, A., T. C. McErlean, R. McConkey & P. McCooey 1997. Medieval fishtraps in Strangford Lough, Co. Down. *Archaeology Ireland,* 11(1), 36–8.

O'Sullivan, A., R. Sands & E. P. Kelly 2007. *Coolure Demesne crannog, Lough Derravaragh: an introduction to its archaeology and landscapes* Bray: Wordwell.

O'Sullivan, A. & J. Sheehan 1996. *The Iveragh Peninsula: an archaeological survey of south Kerry = Suirbhé seandálaíochta íbh Ráthaigh,* Cork: Cork University Press.

O'Sullivan, C. M. 2004. *Hospitality in medieval Ireland, 900-1500* Dublin: Four Courts Press.

O'Sullivan, J. 1998. Nationalists, archaeologists and the myth of the Golden Age, in *Early medieval Munster: archaeology, history and society*, eds. M. A. Monk & J. Sheehan Cork: Cork University Press, 178–89.

–––– 2002. *Inishmurray: an island off County Sligo,* Bray: Wordwell.

–––– 2006. When did the Irish become Christians? *Seanda: National Roads Authority Magazine,* 1, 3.

———— 2007. Search and discovery on an east Galway road scheme. *Seanda: National Roads Authority Magazine,* 2, 22–5.

O'Sullivan, J., M. Hannan & J. Tierney 1998. Excavation of Lisnagun ringfort, Darrava, Co. Cork, 1987–89. *Journal of the Cork Historical and Archaeological Society,* 103, 31–66.

O'Sullivan, J. & J. Killgore 2003. *Human remains in Irish archaeology,* Kilkenny: The Heritage Council.

O'Sullivan, J. & T. Ó Carragáin 2008. *Inishmurray: Monks and Pilgrims in an Atlantic Landscape Archaeological Survey and Excavations,* Cork: Collins Press.

O'Sullivan, J. & M. Stanley (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.

———— 2007. The quiet landscape: archaeological discoveries on a road scheme in east Galway, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 81–100.

O'Sullivan, M. 1988. A history of the development of St Brendan's Cathedral, Ardfert. *Journal of the Kerry Archaeological and Historical Society,* 21, 148–65.

O'Sullivan, M. & L. Downey 2004. Coastal Promontory Forts. *Archaeology Ireland,* 18(2), 18–20.

———— 2004. Souterrains. *Archaeology Ireland,* 18(4), 34–6.

———— 2005. Corn-Drying Kilns. *Archaeology Ireland,* 19(3), 32–5.

———— 2005. Crannogs. *Archaeology Ireland,* 19(4), 34–6.

———— 2005. Shell Middens. *Archaeology Ireland,* 19(1), 37–9.

———— 2006. Quern Stones. *Archaeology Ireland,* 20(2), 22–5.

———— 2006. Watermills. *Archaeology Ireland,* 20(3), 36–8.

———— 2007. Ridges and furrows. *Archaeology Ireland,* 21(2), 34–7.

———— 2007. Ringfort. *Archaeology Ireland,* 21(3), 32–5.

O'Sullivan, S. 1998. Aldhelm's De virginitate—patristic pastiche or innovative exposition? *Peritia,* 12, 271–95.

O'Sullivan, T. 1990. *The exploitation of birds in Viking Dublin,* (Unpublished M.A.) Galway: National University of Ireland: Galway.

O'Sullivan, W. 1949. The earliest Irish coinage. *Journal of the Royal Society of Antiquaries of Ireland,* 79, 190–235.

———— 1961. *The earliest Irish coinage* Dublin: The Stationery Office.

———— 1976. The Irish manuscripts in case H in Trinity College Dublin catalogued by Matthew Young in 1781. *Celtica,* 11, 229–50

———— 1994. The Lindisfarne scriptorium: for and against. *Peritia,* 8, 80–94.

———— 2005. Manuscripts and Palaeography, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín London: Oxford University Press, 511–48.

O'Toole, E. 1932. The primitive churches of Rathvilly Parish, Co. Carlow. *Journal of the Kildare Archaeological and Historical Society,* 11(3), 59–102.

———— 1934. Stone with cup and circle markings, Tinnacarrig, Parish of Ullard, Co. Carlow. *Journal of the Royal Society of Antiquaries of Ireland,* 64, 263.

———— 1934. Two early penannular brooches from Bough, Rathvilly. Co. Carlow. *Journal of the Royal Society of Antiquaries of Ireland,* 64, 263–4.

O'Toole, E. & R. A. S. Macalister 1938. Ogham stone at Tuckamine, near Rathvilly, Co. Carlow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 304–5.

O'Toole, P. 1943. Wooden structures recently found in bogs (note). *Journal of the Royal Society of Antiquaries of Ireland,* 73, 25.

Otway-Ruthven, A. J. 1964. Parochial development in the rural deanery of Skreen. *Journal of the Royal Society of Antiquaries of Ireland,* 94, 111–22.

Ovitt, G. J. 1994. The Cultural context of Western Technology: Early Christian attitudes towards Manual Labor, in *The Work of Work: Servitude, Slavery and Labor in Medieval England*, eds. A. J. Frantzen & D. Moffat Glasgow: Cruithne Press, 71–94.

Palmer, J. 2007. Defining paganism in the Carolingian world. *Early Medieval Europe,* 15(4), 402–25.

Pantos, A. & S. Semple (eds.), 2004. *Assembly Places and Practices in Medieval Europe,* Dublin: Four Courts Press.

Parker Pearson, M. 1999. *The Archaeology of Death and burial,* Thrupp: Sutton Publishing.

Parsons, D. N. & P. Sims-Williams (eds.), 2000. *Ptolemy: Towards a Linguistic Atlas of the Earliest Celtic Place-Names of Europe,* Aberystwyth.

Partridge, M. 1973. *Farm Tools Through the Ages* Reading: Osprey Publishing.

Paterson, T. G. F. 1939. Donagh Church, Co. Monaghan. *Ulster Journal of Archaeology,* 2, 26–8.

———— 1940. Ecclesiastical remains in Co Cavan *Ulster Journal of Archaeology,* 3, 154–6.

———— 1945. Brigid's crosses in County Armagh. *Journal of the Louth Archaeological and Historical Society,* 11(1), 15–20.

———— 1946. Recent finds in Counties Armagh, Tyrone and Down *Ulster Journal of Archaeology,* 9, 45–52

———— 1962. An unpublished Viking hoard (note). *Journal of the Royal Society of Antiquaries of Ireland,* 92, 78–9.

Paterson, T. G. F. & O. Davies 1940. The churches of Armagh *Ulster Journal of Archaeology,* 3, 82–104

–––– 1940. Knocknacloy church *Ulster Journal of Archaeology,* 3, 161–2

Patterson, N. T. 1990. Patrilineal kinship in early Irish society: the evidence from the Irish law texts. *Bulletin of the Board of Celtic Studies,* 37, 133–65.

–––– 1991. *Cattle-lords and clansmen: kinship and rank in early Ireland*: New York ; London : Garland

–––– 1994. *Cattle-lords and clansmen: the social structure of early Ireland (2nd Edition),* New York University of Notre Dame Press.

Patterson, R. 1955. Hand distaffs from Lough Faughan, Lagore and Ballinderry *Ulster Journal of Archaeology,* 18, 81–2

Pearce, S. 2004. *South-western Britain in the early Middle Ages,* London: Continuum Publishing Group.

Pearse, S. M. (ed.) 1982. *The Early Church in Western Britain and Ireland : studies presented to C.A. Ralegh Radford* Oxford: Oxford University Press.

Pearson, K. L. 1997. Nutrition and the Early Medieval Diet. *Speculum,* 71 (1), 1–32.

Pestell, T. & K. Ulmschneider (eds.), 2003. *Markets in early medieval Europe: Trading and Productive Sites, 650-850,* Cheshire: Windgather Press.

Petrie, G. 1972. Aspects of George Petrie, V.—An essay on military architecture in Ireland previous to the English invasion. Notes and explanatory appendix by D.J.S. O'Malley. *Proceedings of the Royal Irish Academy Section C,* 72, 219–69.

Phair, P. B. 1962. Betham and the older Irish Manuscripts (note). *Journal of the Royal Society of Antiquaries of Ireland,* 92, 75–8.

Phelan, M. M. 1973. Kilree. *Old Kilkenny Review,* 25, 16–28.

–––– 1987. Knocktopher. *Old Kilkenny Review,* 368–75.

Picard, J.-M. (ed.) 1991. *Ireland and Northern France, AD 600–850,* Blackrock: Four Courts Press.

–––– 1998. Adomnán's Vita Columbae and the cult of Colum Cille in Continental Europe. *Proceedings of the Royal Irish Academy Section C,* 98, 1–23.

–––– 2000. Princeps and principatus in the early church: a reassessment, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Dublin: Four Courts Press, 146–60.

Pirenne, H. 1925. *Medieval Cities: Their Origins and the Revival of Trade*, Princeton University Press, Princeton (translated F. D. Halsey).

Plummer, C. 1910. *Vitae sanctorum Hiberniae partim hactenus ineditae*, Clarendon Press, Oxford.

Pochin Mould, D. D. C. 1963. An unrecorded stone cross in West Cork (note). *Journal of the Royal Society of Antiquaries of Ireland,* 93, 192–3.

–––– 2001. The sailing ships of ancient Ireland. *Archaeology Ireland,* 15(15-18).

Poole, B. 1930. Crannóg near Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 60, 193–4.

Porter, A. K. 1931. *The Crosses and culture of ancient Ireland,* New York.

–––– 1931. *The crosses and culture of Ireland* New York: Benjamin Blom.

–––– 1931. A relief of Labhraidh Loingseach at Armagh. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 142–50.

Postan, M. M. (ed.) 1966. *The Cambridge Economic History of Europe, vol. 1: the Agrarian Life of the Middle Ages,* Cambridge: Cambridge University Press.

–––– 1973. *Essays in Medieval Agriculture and General Problems of the Medieval Economy* Cambridge: Cambridge Unviersity Press.

Potterton, M. 2005. *Medieval Trim: History and Archaeology,* Dublin: Four Courts Press.

Powell, T. E. 1995. The three orders of society in early medieval Ireland. *Irish Historical Studies,* 29, 475–89.

Power, C. 1985–1986. Diet and Disease evidence from the human dental remains in two medieval Irish populations. *Journal of Irish Archaeology,* 3.

–––– 1990. Dental Anthropology. *Archaeology Ireland,* 4(4), 26–8.

–––– 1994. A demographic study of human skeletal populations from historic Munster *Ulster Journal of Archaeology,* 57, 95–118.

Power, D. 1989. Cork. *Archaeology Ireland,* 3(1), 46–50.

Power, P. 1931. Some recent antiquarian finds in Munster. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 55–60.

–––– 1932. The abbey of Molana, Co. Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 62, 142–52.

–––– 1932. A stone mould from Co. Waterford (note). *Journal of the Royal Society of Antiquaries of Ireland,* 62, 114–5.

–––– 1938. Some Old churches of Decies. *Journal of the Royal Society of Antiquaries of Ireland,* 68, 55–68.

–––– 1939–1940. A decorated quern-stone, and its symbolism. *Proceedings of the Royal Irish Academy Section C,* 45, 25–50.

–––– 1941. Ballygarran Cill, near Waterford (note). *Journal of the Royal Society of Antiquaries of Ireland,* 71, 63–4.

–––– 1943. The town wall of Waterford. *Journal of the Royal Society of Antiquaries of Ireland,* 73, 118–36.

–––– 1992. Derrynaflan: A note on the placename. *Tipperary Historical Journal,* 5, 241–2.

Prendergast, E. 1946–1947. Togher at Kellysgrove Co. Galway. *Journal of the Galway Archaeological and Historical*

`

Society, 22(1 & 2), 15–8.

–––– 1957. Burial at Rossmakay, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 14(1), 38–9.

–––– 1958. A souterrain recently discovered in Kilkenny *Old Kilkenny Review,* 10, 38–41.

–––– 1964. A new High Cross at Leggettsrath. *Old Kilkenny Review,* 16, 5–16.

–––– 1968. Report on investigation of souterrain at Dowdallshill, Dundalk. *Journal of the Louth Archaeological and Historical Society,* 16(4), 251–2.

–––– 1970. Burials at Stephenstown. *Journal of the Louth Archaeological and Historical Society,* 17(2), 78.

–––– 1991. A Viking sword from Harley Park. *Old Kilkenny Review,* 815–9.

Prendergast, E. M. 1959. Ringfort with souterrain, at Gorteen, Co. Westmeath. *Ríocht na Mídhe,* 2(1), 45–8.

–––– 1970. Burials at Derryclare. *Ríocht na Mídhe,* 4(4), 4–5.

–––– 1971. A souterrain at Scurlockstown. *Ríocht na Mídhe,* 5(1), 60–1.

Preest, D. (ed.) 2002. *Gesta Pontificum Anglorum,* Boydell Press, Woodbridge.

Price, J. (ed.) 2000. *Glass in Britain and Ireland AD 350-1100,* London: London: British Museum.

Price, L. 1935. Cist Burial at Kennycourt, Co. Kildare (note). *Journal of the Royal Society of Antiquaries of Ireland,* 65, 327–9.

–––– 1938. Early Irish silver brooch from County Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 145–6.

–––– 1939. Antiquities of Burgage and district. *Journal of the Kildare Archaeological and Historical Society,* 12(4), 137–43.

–––– 1939. Discovery of skeletons at Haynestown S. *Journal of the Kildare Archaeological and Historical Society,* 12(4), 197–9.

–––– 1940. Glendalough: St. Kevin's Road, in *Féil-sgríbinn Eóin Mhic Néill: Essays and Studies presented to Professor Eoin MacNeill,* ed. J. Ryan Dublin: Faoi Chomhartha na dTrí gCoinneal, 244–71.

–––– 1941. Glencolumbkille, County Donegal, and its Early Christian cross-slabs. *Journal of the Royal Society of Antiquaries of Ireland,* 71, 71–88.

–––– 1945. An old graveyard at Ballagh, Co. Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 75, 257.

–––– 1945. St. Broghan's Road, Clonsast. *Journal of the Royal Society of Antiquaries of Ireland,* 75, 56–9.

–––– 1958. On the distribution of place-names beginning with Dun-, Lis-, and Rath (note). *Journal of the Royal Society of Antiquaries of Ireland,* 88, 83–4.

–––– 1959. Rock-basins, or 'bullauns', at Glendalough and elsewhere. *Journal of the Royal Society of Antiquaries of Ireland,* 89, 161–88.

–––– 1959. Sculptured cross-base at Oldcourt, near Bray, Co. Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 89, 97.

Price, L. & E. M. Stephens 1948. "Bullaun" stones near Derrylossary church, Co. Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 78, 179–81.

Proudfoot, B. & D. R. M. Weatherup 1958. Finds from Coney Island, Lough Beg *Ulster Journal of Archaeology,* 21, 2–6.

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.

–––– 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

–––– 1977. Economy and settlement in rural Ireland, in *Studies in Celtic Survival,* ed. L. Laing Oxford: Tempus Reparatum.

Proudfoot, V. B. & B. C. S. Wilson 1961–1962. Further Excavations at Larrybane Promontory Fort, Co Antrim *Ulster Journal of Archaeology,* 24–25, 91–115.

Pryce, H. 1992. Pastoral care in early medieval Wales, in *Pastoral Care before the Parish,* eds. J. Blair & R. Sharpe Leicester: Leicester University Press, 41–62.

Pryor, F. 1976. A descriptive catalogue of some ancient Irish metalwork in the collections of the Royal Ontario Museum, Toronto. *Journal of the Royal Society of Antiquaries of Ireland,* 106, 73–91.

Pulliam, H. 2006. *Word and image in the Book of Kells* Dublin: Four Courts Press.

Purcell, E. 1995. *A reconsideration of the Ballinderry game board,* (Unpublished MPhill.) Dublin: University College Dublin.

Quinn, B. 2005. *The Atlantean Irish : Ireland's oriental and maritime heritage* Dublin: Lilliput Press.

Quirke, B. 1995. Notes on the region of Barnasnaw, its population, and routes through it in historic and pre-historic times. *Journal of the Kerry Archaeological and Historical Society,* 28, 138–47.

Radford, C.A.R. 1956. 'Imported pottery found at Tintagel, Cornwall', in D.B. Harden (ed.) *Dark Age Britain,* Methuen & Co. London, 59-70.

Radford, C. A. R. 1970. Devenish *Ulster Journal of Archaeology,* 33, 55–62.

–––– 1977. The earliest Irish churches (The Oliver Davies lecture for 1977). *Ulster Journal of Archaeology,* 40, 1–11.

Rae, E. C. 1979. The medieval fabric of the Cathedral church of St Patrick in Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 28–73.

Raftery, B. 1967. A cross-inscribed stone from Co. Tipperary. *North Munster Antiquarian Journal,* 10(2), 219–21.

–––– 1969. A late ogham inscription from Co. Tipperary. *Journal of the Royal Society of Antiquaries of Ireland,* 99, 161–4.

–––– 1987. Ancient Trackways in Corlea Bog, Co. Longford. *Archaeology Ireland,* 1(2), 60–4.

–––– 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.

–––– 1940–1941. Long stone cists of the Early Iron Age. *Proceedings of the Royal Irish Academy Section C,* 46, 299–315.

–––– 1941. A bronze zoomorphic brooch and other objects from Toomullin, Co. Clare. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 56–60.

–––– 1941. Some new County Louth finds. *Journal of the Louth Archaeological and Historical Society,* 10(1), 55–7.

–––– 1942. Finds from three Ulster counties *Ulster Journal of Archaeology,* 5, 120–31

–––– 1942–1943. Knocknalappa Crannóg, Co. Clare. *North Munster Antiquarian Journal,* 3(1), 53–72.

–––– 1943. The excavation of a reilig at Ballyknockan, Co. Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 73, 151–2.

–––– 1944. A long stone cist in Co. Wicklow (note, with report on skeleton by R.G. Inkster). *Journal of the Royal Society of Antiquaries of Ireland,* 74, 166–9.

–––– 1944. A stone figure from Co. Mayo (note). *Journal of the Royal Society of Antiquaries of Ireland,* 74, 87–90.

–––– 1944. The Turoe Stone and the Rath of Feerwore. *Journal of the Royal Society of Antiquaries of Ireland,* 74, 23–53.

–––– 1945. A decorated bronze zoomorphic brooch (note). *North Munster Antiquarian Journal,* 4(4), 164–5.

–––– 1951. A new dug-out canoe. *Journal of the Louth Archaeological and Historical Society,* 12(3), 126–7.

–––– 1958. Catalogue. *Journal of the Royal Society of Antiquaries of Ireland,* 88, 115–38.

–––– 1959–1960. A travelling-man's gear of Christian times. *Proceedings of the Royal Irish Academy Section C,* 60, 1–8.

–––– 1960. National Museum of Ireland: archaeological acquisitions in the year 1958: Catalogue. *Journal of the Royal Society of Antiquaries of Ireland,* 90, 14–40.

–––– 1960–1961. A Viking burial in County Galway. *Journal of the Galway Archaeological and Historical Society,* 29, 3–6.

–––– 1961. National Museum of Ireland: archaeological acquisitions in the year 1959: Catalogue. *Journal of the Royal Society of Antiquaries of Ireland,* 91, 68–107.

–––– 1963. National Museum of Ireland: archaeological acquisitions in the year 1961. *Journal of the Royal Society of Antiquaries of Ireland,* 93, 115–33.

–––– 1963. A thistle brooch from Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 15(3), 277–80.

–––– 1964. National Museum of Ireland: archaeological acquisitions in the year 1962: Catalogue. *Journal of the Royal Society of Antiquaries of Ireland,* 94, 85–104.

–––– 1965. Ex Oriente... . *Journal of the Royal Society of Antiquaries of Ireland,* 95, 193–204.

–––– 1966. The cuillard and other unpublished hanging bowls. *Journal of the Royal Society of Antiquaries of Ireland,* 96, 29–38.

–––– 1969. A hoard of Viking silver bracelets from Co. Donegal. *Journal of the Royal Society of Antiquaries of Ireland,* 99, 133–6.

–––– 1969. National Museum Of Ireland: archaeological acquisitions in the year 1966. *Journal of the Royal Society of Antiquaries of Ireland,* 99, 93–115.

–––– 1970. Bronze mount from Feltrim Hill, Co. Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 100, 175–9.

–––– 1970. A cross-slab from County Louth. *Journal of the Louth Archaeological and Historical Society,* 17(2), 113.

–––– 1970. Early Christian cross from Monasterboice. *Journal of the Louth Archaeological and Historical Society,* 17(2), 112.

–––– 1970. National Museum of Ireland: Archaeological acquisitions in the year 1967. *Journal of the Royal Society of Antiquaries of Ireland,* 100, 145–66.

–––– 1972. Aspects of George Petrie. I: George Petrie 1789–1866, a re-assessment. *Proceedings of the Royal Irish Academy Section C,* 72, 153–7.

–––– 1973. National Museum of Ireland: archaeological acquisitions in the year 1970. *Journal of the Royal Society of Antiquaries of Ireland,* 103, 177–213.

–––– 1980. *Artists and Craftmen: Irish Art Treasures,* Dublin.

Raftery, J. & A. Moore 1944. Two prehistoric burials in Co. Mayo (note). *Journal of the Royal Society of Antiquaries*

of Ireland, 74, 171–6.

Raftery, J., B. Ó Ríordáin & E. Rynne 1966. National Museum of Ireland: archaeological acquisitions in the year 1963. *Journal of the Royal Society of Antiquaries of Ireland,* 96, 7–27.

–––– 1967. National Museum of Ireland: archaeological acquisitions in the year 1964. *Journal of the Royal Society of Antiquaries of Ireland,* 97, 1–28.

Raftery, J., E. M. Prendergast & J. Waddell 1968. National Museum of Ireland: archaeological acquisitions in the year 1965. *Journal of the Royal Society of Antiquaries of Ireland,* 98, 93–159.

Raftery, J. & M. F. Ryan 1971. National Museum of Ireland: archaeological acquisitions in the year 1968. *Journal of the Royal Society of Antiquaries of Ireland,* 101, 184–244.

Raftery, J. & H. G. Tempest 1942. A burial at Dromiskin, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 10(2), 133–7.

Ramsay, G. 1995. Rubbing stones, Raths and Polished Stone Axes. *Archaeology Ireland,* 9(1), 9–10.

Ramsey, G., C. Bourke & D. Crone 1991–1992. Antiquities from the Sillees river *Ulster Journal of Archaeology,* 54–55, 150–3.

Randolph-Quinney, P. 2007. An ususual burial at Ballygarraun West. *Seanda: National Roads Authority Magazine,* 2, 30–1.

Rankin, J. F. 1997. *Down Cathedral, The Church of Saint Patrick of Down,* Belfast: Ulster Historical Foundation.

Ranson, J. 1945. Some unrecorded Wexford antiquities. *Journal of the Royal Society of Antiquaries of Ireland,* 75, 53–5.

Rathbone, S. 2007. Seeing the light at Garretstown, Co. Meath. *Seanda: National Roads Authority Magazine,* 2, 55–6.

Rawson, P. 1973. Early history of sexual art, in *Primitive exotic art,* ed. P. Rawson London, 1–76.

–––– (ed.) 1973. *Primitive Erotic Art,* London.

Read, C., T. Finan & K. Barton 2005. Initial findings at kilteasheen, Knockvicar, Co. Roscommon. *Archaeology Ireland,* 19(3), 18–20.

Redknap, M. 2000. *Vikings in Wales: an archaeological quest,* Cardiff: National Museums & Galleries of Wales.

Redknap, M., N. Edwards, S. Young, A. Lane & J. Knight (eds.), 2001. *Pattern and Purpose in Insular Art,* Oxford: Oxbow.

Redmond, M. 1995. A survey of the promontory forts of the Kerry Peninsulas. *Journal of the Kerry Archaeological and Historical Society,* 28, 5–63.

–––– 1997. A promontory fort at Rathfarnham, County Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 127, 125–6.

Redmond, M. & D. McGuinness 1993. An unrecorded tau cross at Dalkey, County Dublin (note). *Journal of the Royal Society of Antiquaries of Ireland,* 123, 167–9.

Rees-Jones, S. G. 1971. A souterrain at Sheepland Mor, near Chapeltown, Co Down *Ulster Journal of Archaeology,* 34, 77–8.

Reid, M. 2000. Report on archaeological testing at Stephen Street Upper/Longford Street Great (Unpublished), Dublin: Dúchas.

Reilly, E. 1994. *A study of the insect remains from the Viking-medieval excavations at Peter Street, Waterford,* (Unpublished MSc.) Sheffield: University of Sheffield.

–––– 1997. The insect remains from 3 pits, Thomas Street Excavations (Unpublished), Dublin: Margaret Gowen and Company.

–––– 1997. The insect remains from Back Lane, Dublin, 1996/97 Excavation- license No. 99E0300 (Unpublished), Dublin: Margaret Gowen and Company.

–––– 2003. The contribution of insect remains to an understanding of the environment of Viking-age and medieval Dublin, in *Medieval Dublin IV : proceedings of the Friends of Medieval Dublin Symposium 2002* ed. S. Duffy Trinity College Dublin: Four Courts Press, 40–62.

Rice, G. 1990–1991. An addition to the corpus of bronze open work plaques emanating from a Clonmacnoise workshop in the twelfth century. *Ríocht na Midhe,* 8(3), 114–7.

Richards, M. 1960. The Irish settlements in South-West Wales-a topographical approach. *Journal of the Royal Society of Antiquaries of Ireland,* 90, 133–62.

Richardson, H. 1980. Derrynavlan and other early Church treasures. *Journal of the Royal Society of Antiquaries of Ireland,* 110, 92–115.

–––– 1984. The concept of the High Cross, in *Ireland and Europe, the Early Church*, eds. P. Ní Chatháin & M. Richter Stuttgart.

–––– 1984. Number and symbol in Early Christian Irish art. *Journal of the Royal Society of Antiquaries of Ireland,* 114, 28–47.

–––– 1987. Observations on Christian art in early Ireland, Georgia and Armenia, in *Ireland and Insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy, 129–37.

–––– 1989. Celtic Art, in *An introduction to Celtic Christianity*, ed. J. P. Mackey Edinburgh: T. & T. Clark, 359–85.

–––– 1992. Christian iconography in early Irish and Armenian art, in *Atti del Quinto Simposio Internazionale di Arte Armena 1988*, ed. B. L. Zekiyan Venice, 575–93.

–––– 1993. Remarks on the liturgical fan, flabellum or rhipidion, in *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 eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 27–34.

–––– 1995. The jewelled cross and its canopy, in From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994, ed. C. Bourke Belfast: HMSO, 177-86.

–––– 2002. Biblical Imagery and the heavenly Jerusalem in the Book of Armagh and the Book of Kells, in Proceedings of the fifth international colloquium on Ireland and Europe in the early Middle Ages held under the joint auspices of Konstanz University and University College Dublin. , eds. P. Ní Chatháin & M. Richter University of Konstanz: Dublin: Four Courts Press, 205–14.

–––– 2005. Visual Arts and Society, in A new history of Ireland. Vol. 1 Prehistoric and early Irelandd, ed. D. Ó Cróinín London: Oxford University Press, 680–713.

Richardson, H. & J. Scarry 1990. An introduction to Irish High Crosses, Cork: Mercier.

Richardson, P. 1938. Cashels of Moneygashel, Co. Cavan Ulster Journal of Archaeology, 1, 19–22

Richter, M. 1985. The European dimension of Irish history in the eleventh and twelfth centuries. Peritia, 4, 328–45

–––– 1996. The personnel of learning in early medieval Ireland, in Irland und Europa im früheren Mittelalter : Bildung und Literatur = Ireland and Europe in the early Middle Ages. Learning and Literature, eds. P. Ní Chatháin & M. Richter Stuttgart: Klett Cotta, 275–308.

Rigoir, J. 1968. 'Les sigillíes paléochretiénnes grises et oranges', Gallia (26), 177-244.

–––– 1999. Ireland and her neigbours in the seventh century, Dublin: Four Courts Press.

Ritchie, A. (ed.) 1994. Govan and its early medieval sculpture Stroud: Alan Sutton.

Ritchie, A.G. 1879. Ancients Laws of Ireland V4, Longmans, Green, Reader and Dyer, London.

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.

Roche, H. 1985. A souterrain at Rahood, Nobber, County Meath (note). Journal of the Royal Society of Antiquaries of Ireland, 115, 164–6.

–––– 1999. Late Iron Age activity at Tara, Co. Meath. Ríocht na Midhe, 10(1), 18–30.

Roche, J. 1993. The influence of Ireland on Roman Britain…Cursus Unicus? Archaeology Ireland, 7(1), 7–9.

Rodgers, M. 1995. Glendalough: a pilgrim way Glendalough: The Author.

Roe, H. M. 1945. An interpretation of certain symbolic sculptures of Early Christian Ireland. Journal of the Royal Society of Antiquaries of Ireland, 75, 1–23.

–––– 1949. The "David Cycle" in early Irish art. Journal of the Royal Society of Antiquaries of Ireland, 49, 39–59.

–––– 1960. A stone cross at Clogher, Co. Tyrone. Journal of the Royal Society of Antiquaries of Ireland, 90, 191–206.

–––– 1962. The high crosses of western Ossory, Kilkenny: Kilkenny Archaeological Society.

–––– 1965. The Irish high cross: morphology and iconography. Journal of the Royal Society of Antiquaries of Ireland, 95, 213–26.

–––– 1966. Some aspects of medieval culture in Ireland-the presidential address. Journal of the Royal Society of Antiquaries of Ireland, 96, 105–9.

–––– 1967. A carved stone at Castledermot, Co. Kildare (note). Journal of the Royal Society of Antiquaries of Ireland, 97, 179–80.

–––– 1967. The Roscrea Pillar, in North Munster studies: essays in commemoration of Monsignor Michael Moloney ed. E. Rynne Limerick: Thomond Archaeological Society, 127-32.

–––– 1970. The Orans in Irish Christian art. Journal of the Royal Society of Antiquaries of Ireland, 100, 212–21.

Ronan, M. V. 1932. The Dún of Dún Laoghaire. Journal of the Royal Society of Antiquaries of Ireland, 62, 187–90.

–––– 1941. Cross-in-circle stones of St. Patrick's Cathedral. Journal of the Royal Society of Antiquaries of Ireland, 71, 1–8.

–––– 1953. Burgage, County Wicklow. Journal of the Kildare Archaeological and Historical Society, 13(4), 184–92.

Rooke, C. B. 1938. Bullán stone at Glendalough, Co. Wicklow (note), . Journal of the Royal Society of Antiquaries of Ireland, 68, 151–2.

Rosedahl, E. & D. M. Wilson (eds.), 1985. From Viking to Cruasader: Scandinavia and Europe, 800-1200, Stockholm: Birka.

Ross, A. 1973. Celtic and Northern Art, in Primitive Erotic Art, ed. P. Rawson London, 77–106.

Ross, J. 1971. Abbeyshrule—Mainistir Sruthair. Teathbha, 1(2), 113–4.

Ross, M. C. 1933. An Irish cloissoné enamel. Journal of the Down and Connor Historical Society, 5, 43-6.

Ross, N. 1992. A previously unrecorded church site. Journal of the Louth Archaeological and Historical Society, 22(4), 427–9.

–––– 2000. A souterrain at Bellurgan, County Louth. Journal of the Louth Archaeological and Historical Society, 24(4), 563–5.

Round, J.H. 1909. Feudal England, London.

Rourke, G. D. 2000. Skellig Michael A World Apart. World of Hibernia, 6(1), 82.

Roycroft, N. 2003. Industries and Uprising. Archaeology Ireland, 17(4), 5.

–––– 2005. Around the bay on the Great North Road: The archaeology of the M1 Dundalk Western Bypass, in Recent archaeological discoveries on National Road Schemes 2004: Proceedings of a seminar for the

public, Dublin, September 2004, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 65–82.

—— 2006. Iron Age Patterns: Silent Sites. *Seanda: National Roads Authority Magazine,* 1, 9.

Ryan, F. 1993. A history of coopering. *Archaeology Ireland,* 7(2), 27–30.

Ryan, G. 1977. Archaeological monuments of South Clare. *The Other Clare,* 1, 3–8.

—— 1985. Pre-Reformation church and monastic sites in the Barony of Bunratty Lower, 500 A.D.-1550 A.D. *The Other Clare*, 44–50.

Ryan, J. 1938. The Battle of Clontarf. *Journal of the Royal Society of Antiquaries of Ireland,* 68, 1–50.

—— (ed.) 1940. *Féil-sgríbhinn Eóin Mhic Néill; Essays and studies presented to Professor Eoin MacNeill on the occasion of his seventieth birthday May 15th, 1938,* Dublin: Faoi Chomhartha na dTrí gCoinneal.

—— 1943. The Dalcassians. *North Munster Antiquarian Journal,* 3(4), 189–202.

—— 1949. Pre-Norman Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 79, 64–83.

—— 1950. Irish learning in the seventh century, being a review of some aspects of F. Masai, Essai sur les origines de la miniature dite irlandaise (Brussels, 1947), . *Journal of the Royal Society of Antiquaries of Ireland,* 80, 164–71.

—— 1972. *Irish monasticism : origins and early development,* Dublin: Irish University Press.

—— 1972. Rotary querns. *Old Kilkenny Review,* 24, 68.

—— 1986. Kilmanahan, An early monastic site. *Old Kilkenny Review*, 302–4.

Ryan, K. 1987–1988. Holes and flaws in medieval Irish manuscripts. *Peritia,* 6–7, 243–64.

Ryan, M. 1969. *Irish Iron Age & early Christian pottery,* (Unpublished M.A.) Dublin: UCD.

—— 1973. Native pottery in Early Historic Ireland. *Proceedings of the Royal Irish Academy Section C,* 73, 619–45.

—— 1975. A souterrain at Painstown, Co. Meath. *Ríocht na Midhe,* 6(1), 35–7.

—— 1975. Two new souterrains near Dundalk. *Journal of the Louth Archaeological and Historical Society,* 18(3), 195–7.

—— 1976. A souterrain in Kealduff Upper townland, Glenbeigh. *Journal of the Kerry Archaeological and Historical Society,* 9, 5–10.

—— 1977. Magh Adhair, inauguration place of the Kings of Thomond. *The Other Clare,* 1, 11–2.

—— 1979–1980. Two quernstones from County Wicklow. *Journal of the Kildare Archaeological and Historical Society,* 16(2), 115.

—— 1980. The Derrynaflan hoard. *Ireland Today: Bulletin of the Department of Foreign Affairs,* 965 (April 1980), 1–5.

—— 1980. The Derrynflan hoard. *Ireland Today: Bulletin of the Department of Foreign Affairs,* April 1980, 2–5.

—— 1980. An Early Christian hoard from Derrynaflan, Co. Tipperary. *North Munster Antiquarian Journal,* 22, 9–26.

—— 1982. The Roscrea Brooch. *Eile: Journal of the Roscrea Heritage Society,* 1, 7–24.

—— 1982. Some Archaeological comments on the use of silver in Pre-Viking Ireland, in *Studies on Early Ireland in honour of M.V. Duignan: Papers presented at the Association of Young Irish Archaeologists 11th Annual Seminar at Queen's University Belfast, November 28-30 1980* ed. B. G. Scott Belfast, 73–91.

—— 1983. Derrynaflan: The Chalice, in *The Derrynaflan hoard I: A preliminary account*, ed. M. Ryan Dublin: National; Museum of Ireland, 3–16.

—— 1983. Derrynaflan: The Paten and Stand, in *The Derrynaflan hoard I: A preliminary account*, ed. M. Ryan Dublin: National Museum of Ireland, 17–30.

—— 1983. Derrynaflan: The Significance of the hoard, in *The Derrynaflan hoard I: A preliminary Account*, ed. M. Ryan Dublin: National Museum of Ireland, 36–41.

—— 1983. Metalworking and style in the early Christian period, 7th to 10th centuries A.D., in *Treasures of Ireland: Irish art 3000 B.C.-1500 A.D.*, ed. M. Ryan Dublin: Royal Irish Academy, 34-45.

—— (ed.) 1983. *Treasures of Ireland: Irish art 3000 B.C.-1500 A.D.,* Dublin: Royal Irish Academy.

—— 1984. The Derrynaflan and other early Irish Eucharistic Chalices: Some speculations, in *Irland and Europa: Ireland and Europe: The Early Church*, eds. M. Richter & P. Ní Chatháin Stuttgart: Klett-Cotta.

—— 1984. Early Irish Chalices. *Irish Arts Review Yearbook,* 1(1 Spring 1984), 21–5.

—— 1985. *Early Irish communion vessels: church treasures of the Golden Age* Dublin: National Museum of Ireland.

—— 1985. An insular gilt bronze object in the Royal Museum for Art and history. *Musea,* 56, 57-60.

—— 1986. The Horn Reliquary of Tongres/Tongeren: A Twelfth Century Irish Object. *Musea (Bulletin of the Musées Royaux d'art et d'Histoire, Brusels),* 56, 43–55.

—— 1987. The Donore hoard: early medieval metalwork from Moynalty, near Kells, Ireland. *Antiquity,* 61, 57–63.

—— 1987. A guilt-bronze object in the MRAH. *Musea,* 56, 57–60.

—— 1987. Ireland and insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985, in *Proceedings of a conference at University College Cork, 31 October-3 November 1985*

ed. M. Ryan Dublin: Royal Irish Academy, 187.

—— 1987. Some aspects of sequence and style in the metalwork of eighth and ninth century Ireland, in *Ireland and Insular Art, A.D. 500-1200*, ed. M. Ryan Dublin: Royal Irish Academy, 66–74.

—— 1987. A suggested origin for the future representations on the Derrynaflan Paten, in *Figures from the Past: Studies in honour of Helen M Roe*, ed. E. Rynne Dun Laoghaire Glendale Press for the Royal Society of Antiquaries of Ireland, 62–72.

—— 1988. Fine metalworking and early Irish monasteries: the archaeological evidence, in *Settlement and Society*

in Medieval Ireland, ed. J. Bradley Kilkenny: Boethus, 33–48.

—––– 1988. The Irish horn-reliquary of Tongres/Tongeren, Belgium, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. Mac Niocaill & P. F. Wallace Galway: Galway university Press, 127-42.

—––– 1989. Church metalwork in the Eighth and Ninth Centuries, in *The Work of Angels: masterpieces of Celtic metalwork 6th - 9th centuries AD* ed. S. Young London: British Museum Publications in association with the National Museum of Ireland and the National Museums of Scotland, 125–30.

—––– 1990. Decorated metalwork in the Museo dell' Abbazia, Bobbio, Italy. *Journal of the Royal Society of Antiquaries of Ireland,* 120, 102–11.

—––– 1990. Derrynaflan ten years on—1. The impact of the find on our heritage. *Tipperary Historical Journal,* 3, 153–9.

—––– 1990. The formal relationships of insular early medieval eucharistic chalices. *Proceedings of the Royal Irish Academy Section C,* 90, 281–356.

—––– 1990. The Work of Angels. *Archaeology Ireland,* 4(2), 74–8.

—––– 1991. *Early Ireland: culture and treasures* Dublin: An Post.

—––– (ed.) 1991. *The Illustrated archaeology of Ireland* Dublin: Town House and Country House.

—––– 1991. Links between Anglo-Saxon and early Irish medieval arts: Some evidence of metalwork, in *Studies in Insular Art and Archaeology*, eds. R. Farrell & C. E. Karkov Ohio: Oxford, 117–26.

—––– 1992. The Book of Kells and Metalwork, in *The Book of Kells: Proceedings of a conference at Trinity College Dublin 6–9 September 1992*, ed. F. O'Mahony Aldershot: Scolar Press, 270–9.

—––– 1992. The Sutton Hoo Ship Burial and Ireland: Some Celtic Perspectives, in *Sutton Hoo: Fifty years after*, eds. R. Farrell & C. N. de Vegvar Oxford: Ohio, 83–116.

—––– 1993. The Menagerie of the Derrynaflan Chalice, in *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*, eds. M. Spearman & J. Higgitt Edinburgh: Stroud: National Museums of Scotland 151–61.

—––– 1993. *Metal craftsmanship in early Ireland* Dublin: Country House.

—––– 1994. Early Christian metalwork: New evidence from Ireland, in *Churches built in Ancient Times: Recent studies in Early Christian Archaeology*, ed. K. Painter London: Society of Antiquaries of London, 313–24.

—––– (ed.) 1994. *Irish Archaeology Illustrated* Dublin: Country House.

—––– 1994. Ten years of Early Irish Metalwork. *Irish Arts Review Yearbook,* 1994, 153–6.

—––– 1995. The Decoration of the Donore Discs, in *From the Isles of the North: early medieval art in Ireland and Britain: proceedings of the third International Conference on Insular Art, held in the Ulster Museum, Belfast, 7-11 April, 1994*, ed. C. Bourke Belfast: HMSO, 27–35.

—––– 1995. The Menagerie of the Derrynaflan Paten. *Irish Arts Review Yearbook,* 1995, 82–7.

—––– 1997. The Derrynaflan hoard and early Irish art. *Speculum,* 72(4), 995.

—––– 1998. A house-shaped shrine of probable Irish origin at Abbadia San Salvatore, Province of Siena, Italy, in *Irish Antiquities: essays in memory of Joseph Raftery* ed. M. Ryan Bray: Wordwell.

—––– (ed.) 1998. *Irish antiquities: essays in memory of Joseph Raftery* Bray: Wordwell Ltd.

—––– 1998. *Reading the Irish Landscape,* Dublin: Town House.

—––– 2000. *Early Irish Communion vessels* Dublin: Country House.

—––– 2000. Furrows and browse: some archaeological thoughts on agriculture and population in early medieval Ireland, in *Seanchas: Studies in early and medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Four Courts Press, 30–6.

—––– 2002. *Studies in Medieval Irish Metalwork,* London: Pindar Press.

Ryan, M., R. Ó Floinn, N. Lowick & M. Kenny 1984. Six silver finds of the Viking period from the vicinity of Lough Ennell, Co. Westmeath. *Peritia,* 3.

Rynne, C. 1989. Archaeology and the early Irish Watermill. *Archaeology Ireland,* 3(3), 110–4.

—––– 1989. The introduction of the vertical watermill into Ireland: some recent archaeological evidence. *Medieval Archaeology,* 33, 21–31.

—––– 1992. Early medieval horizontal-wheeled mill penstocks from Co. Cork. *Journal of the Cork Historical and Archaeological Society,* 97, 54–68.

—––– 1992. Milling in the 7th century- Europe's earliest Tide Mills. *Archaeology Ireland,* 6(2), 22–4.

—––– 1993. *The archaeology of Cork city and harbour: from the earliest times to industrialisation,* Cork: Collins Press.

—––– 1997. The Patrick Street watermills, in *Archaeological excavations at Patrick, Nicholas and Winetavern Streets, Dublin*, ed. C. Walsh Dingle: Brandon, 81–9.

—––– 1998. The Craft of the Millwright in early medieval Munster, in *Early Medieval Munster: archaeology, history and society*, eds. M. A. Monk & J. Sheehan Cork: Cork University Press, 87–101.

—––– 2000. Waterpower in medieval Ireland, in *Working with water in medieval Europe*, ed. P. Squatriti Leiden: Brill Academic Publishers, 1–50.

—––– 2007. How early Irish horizontal wheeled mills really worked. *Archaeology Ireland,* 21(3), 21–3.

—––– 2007. A medieval watermill at Ballyine, County Limerick. *Journal of the Cork Historical and Archaeological Society,* 112, ??

Rynne, C., G. D. Rourke & J. W. Marshall 1996. An early medieval monastic watermill on High Island *Archaeology Ireland,* 37, 24–7.

Rynne, E. 1955. *Irish iron weapons of pre-Norman times,* (Unpublished Phd.) Dublin: University College Dublin.

———— 1956. Excavation of a ring-fort at Ardcloon, Co. Mayo. *Journal of the Royal Society of Antiquaries of Ireland,* 86, 203–14.

———— 1958. Three bone combs. *Journal of the Royal Society of Antiquaries of Ireland,* 88, 150–2.

———— 1958. Two souterrains at Bawntaaffe, near Monasterboice, County Louth. *Journal of the Louth Archaeological and Historical Society,* 14(2), 96–102.

———— 1959. Souterrain at Donaghmore, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 14(3), 148–53.

———— 1959. Souterrain at Donaghmore, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 14(3), 148–53.

———— 1960–1961. A medieval burial at 'Slagfield', near Moytura, County Sligo. *Journal of the Galway Archaeological and Historical Society,* 29, 71–3.

———— 1961. Souterrain at "Killylagan", Cortial, County Louth. With appendix by Etienne Rynne and John P. Clarke: 'Some souterrains in the neighbourhood of "Killylagan'. *Journal of the Louth Archaeological and Historical Society,* 15(1), 5–10.

———— 1961. Souterrain at Rathiddy, Co. Louth. *Journal of the Louth Archaeological and Historical Society,* 15(1), 106.

———— 1961–1963. "The Danes' Road", a togher near Monasterevin. *Journal of the Kildare Archaeological and Historical Society,* 13(9), 449–57.

———— 1961–1963. Notes on some antiquities found in Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 13(9), 458–62.

———— 1962. An Irish sword of the 11th century? (note). *Journal of the Royal Society of Antiquaries of Ireland,* 92, 208–10.

———— 1962. National Museum of Ireland: archaeological acquisitions in the year 1960: Catalogue. *Journal of the Royal Society of Antiquaries of Ireland,* 92, 139–69.

———— 1962. Souterrain at Rathiddy, County Louth. *Journal of the Louth Archaeological and Historical Society,* 15(2), 125–30.

———— 1962–1964. Some destroyed sites at Shannon Airport, County Clare. *Proceedings of the Royal Irish Academy Section C,* 63, 245–77.

———— 1964. Souterrain at Fore. *Ríocht na Mídhe,* 3(2), 118–23.

———— 1964. Souterrain at Mullagharlin, near Dundalk. *Journal of the Louth Archaeological and Historical Society,* 15(4), 317–20.

———— 1964. Souterrain at Souterrain at Tankardsrock, near Kilkerley. *Journal of the Louth Archaeological and Historical Society,* 15(4), 320.

———— 1964. Souterrain near Ballybarrack: a correction. *Journal of the Louth Archaeological and Historical Society,* 15(4), 320.

———— 1965. Souterrain at Boolareagh, Co. Tipperary (note). *North Munster Antiquarian Journal,* 9(4), 188–90.

———— 1965. Souterrain at Fennor, near Slane, Co. Meath. *Ríocht na Mídhe,* 3(3), 229–33.

———— 1965. Toghers in Littleton Bog, Co. Tipperary. *North Munster Antiquarian Journal,* 9(4), 138–44.

———— 1966–1971. Excavation at 'Lisbeg', Rinmore, Galway. *Journal of the Galway Archaeological and Historical Society,* 32, 93–4.

———— 1967. Excavation of a church-site at Clondalkin, Co. Dublin. *Journal of the Royal Society of Antiquaries of Ireland,* 97, 29–37.

———— (ed.) 1967. *North Munster studies: essays in commemoration of Monsignor Michael Moloney* Limerick: Thomond Archaeological Society.

———— 1967. The Tau Cross of Killinaboy: Pagan or Christian?, in *North Munster Studies: Essays in Commemoration of Monsignor Michael Moloney,* ed. E. Rynne Limerick: Thomond Archaeological Society.

———— 1968. Excavation of a House-site in Fanore Sandhills, Co. Clare. *North Munster Antiquarian Journal,* 11, 7-12.

———— 1969. A Romanesque head from Feakle, Co. Clare. *North Munster Antiquarian Journal,* 12, 91–2.

———— 1972. Stone cross at Gleninsheen, Co. Clare (note). *North Munster Antiquarian Journal,* 15, 61.

———— 1974. Excavations at "Madden's Hill", Kiltale, Co. Meath. *Proceedings of the Royal Irish Academy Section C,* 74, 267–75.

———— 1974–1975. Ancient burials at Ballinlough, Co. Laois. *Journal of the Kildare Archaeological and Historical Society,* 15(4), 430–3.

———— 1978. The Craggaunowen crannog: The Archaeological Evidence. *North Munster Antiquarian Journal,* 20, 47–.

———— 1980. The round towers of Ireland—a review article. *North Munster Antiquarian Journal,* 22, 27–32.

———— 1981. Crannogs in Lough Atedaun, Corofin, Co. Clare (note). *North Munster Antiquarian Journal,* 23, 93–4.

———— 1985–1986. A fourth high cross at Tuam. *Journal of the Galway Archaeological and Historical Society,* 40, 125–9.

———— 1987. The date of the Ardagh Chalice, in *Ireland and Insular Art, A.D. 500-1200,* ed. M. Ryan Dublin: Royal Irish Academy, 85–9.

———— 1987. Evidence for a tympanum at Aghadoe, Co. Kerry. *North Munster Antiquarian Journal,* 29, 3–6.

–––– (ed.) 1987. *Figures from the past: studies on figurative art in Christian Ireland in honour of Helen M. Roe,* Dun Laoghaire: Glendale Press for the Royal Society of Antiquaries of Ireland.

–––– 1987. A pagan Celtic background for Sheela-na-gigs?, in *Figures from the past: studies on figurative art in Christian Ireland in honour of Helen M. Roe*, ed. E. Rynne Dun Laoghaire: Glendale Press for the Royal Society of Antiquaries of Ireland, 189-202.

–––– 1988. A gilt-bronze brooch from near Kilshanny, Co. Clare (note). *North Munster Antiquarian Journal,* 30, 52–4.

–––– 1989–1990. Ringfort at Ballybane, Galway. *Journal of the Galway Archaeological and Historical Society,* 42, 136–8.

–––– 1995. A destroyed cashel near Ennis (note). *North Munster Antiquarian Journal,* 36, 171–2.

–––– 1995. The 'Luguaedon' Pillar-Stone. *Journal of the Galway Archaeological and Historical Society,* 47, 205-11.

–––– 1998. Ireland's earliest 'Celtic' high crosses: the Ossory and related crosses, in *Early medieval Munster: archaeology, history, and society*, eds. M. A. Monk & J. Sheehan Cork: Cork University Press, 125-37.

–––– 2000. The Kilshanny Bell, in *County Clare Studies: essays in memory of Gerald O'Connell, Seán Ó Murchadha, Thomas Coffey and Pat Flynn*, ed. C. Ó Murchadha Ennis, 42-54.

Rynne, E. & E. M. Prendergast 1960. Two Souterrains in Co. Meath. *Ríocht na Mídhe,* 2(4), 37–43.

S.M. 1997. The Skelligs [K.A.M. Vol. II, No. 11, October 1913, 163-172]. *Journal of the Kerry Archaeological and Historical Society,* 30, 40–6.

Sahlins, M. D. 1965. On the sociology of primitive exchange, in *The relevance of models for social anthropology*, ed. M. Banton London: Tavistock Publications.

Samson, R. (ed.) 1991. *Social Approaches to Viking Studies,* Glasgow: Cruithne Press.

Sanderlin, S. 1982. The manuscripts of the Annals of Clonmacnois. *Proceedings of the Royal Irish Academy Section C,* 82, 111–23.

Sawyer, P. H. 1970. The Vikings and the Irish Sea, in *The Irish Sea Province in Archaeology and History*, ed. D. Moore Cardiff, 86–92.

–––– 1974. Medieval settlement: continuity and change in *Proceedings of the University of Leeds Conference: Medieval settlement : continuity and change*, ed. P. H. Sawyer University of Leeds 1974: Edward Arnold 1976, 357.

–––– 1982. The Vikings and Ireland, in *Ireland in early medieval Europe: studies in memory of Kathleen Hughes*, eds. D. Whitelock, R. McKitterick & D. N. Dumville Cambridge: Cambridge University Press, 345–61.

Scally, G. 1992. Archaeological report on test-trenches at nos 1-2, 6-7 Ship Street Little, Dublin, Dublin: Heritage Serive, Department of Environment.

–––– 1994. Archaeological excavations at No. 5-7 Exchange Street Upper/ No. 33-34 Parliament Street, Dublin 2, Dublin: Margaret Gowen and Company.

–––– 1999. The early monastery of High Island. *Archaeology Ireland,* 13(1), 24–8.

–––– 2002. The earthen banks and walled defences of Dublin's north-east corner, in *Medieval Dublin I : proceedings of the Friends of Medieval Dublin Symposium 2001*, ed. S. Duffy Trinity College Dublin: Four Courts Press, 11–33.

Schauman, B. 1979. Early Irish manuscripts: the art of the scribes. *Expedition,* 21, 33–47.

Schiller, G. 1971. *Iconography of Christian art,* London: Lund Humphries.

Schledermann, H. 1970–1971. The idea of the Town: Typology, Definitions and approaches to the study of the Medieval Town in Northern Europe. *World Archaeology,* 2, 115–27.

Scott, A.B. & Martin, F.X. 1978. *Expugnatio Hibernica: the Conquest of Ireland*, Royal Irish Academy, Dublin.

Scott, B. G. 1970–1973. Tribes and tribalism in Early Ireland *Ogam: tradition celtique,* 22–25, 197–207.

–––– 1971. Applications of metallographic examination of iron artefacts in Irish archaeology *Ulster Journal of Archaeology,* 34, 87–95.

–––– 1977. Metallographic study of some early iron tools and weapons from Ireland. *Proceedings of the Royal Irish Academy Section C,* 77, 301–17.

–––– 1978. Iron 'slave-collars' from Lagore crannog, Co. Meath. *Proceedings of the Royal Irish Academy Section C,* 78, 213–30.

Scott, B.G. 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.

–––– 1987. The status of the blacksmith in early Ireland, in *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*, eds. B. G. Scott & H. Cleere Belfast, 153–6.

–––– 1991. *Early Irish ironworking,* Belfast: Ulster Museum.

Scott, B. G. & H. Cleere (eds.), 1987. *The Crafts 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.

Scowcroft, R. M. 1987. On liminality in the Fenian cycle. *Cambridge Medieval Celtic Studies,* 13, 97–100.

Seaby, W. A. 1958–1959. Anglo-Saxon hoards and coins found in the north of Ireland. *British Numismatics Journal,* 29, 248–54.

–––– 1980. Die-links of an eleventh century Dublin penny in the Isle of Man. *Irish Numismatics,* 13, 61–4.

–––– 1984. *Sylloge of coins of the British Isles. 32, Ulster Museum: Belfast. Pt.2 : Hiberno-Norse coins* Oxford: Oxford University Press and Spink for the British Academy and the Trustees of the Ulster Museum.

Seaver, M. 2004. From mountain to sea: excavations at Laughanstown/Glebe. *Archaeology Ireland,* 18(1), 8–12.

–––– 2005. From mountain to sea: excavations in the townlands of Glebe and Laughanstown, County Dublin, in *Recent Archaeological Discoveries on National Road Schemes 2004: Proceedings of a seminar for the public, Dublin, September 2004*, eds. J. o'Sullivan & M. Stanley Bray: Wordwell, 51–64.

–––– 2005. 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 *Settlement, Industry and Ritual: proceedings of a public seminar on archaeological discoveries on national road schemes, September 2005*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 73–87.

Seeck, O. (ed.) 1883, *Auctorum Antiquissimorum Tomi VI Pars Prior*, Societas Aperiendis Fontibus Rerum Germanicarum Medii Aevi, Hannover.

Sexton, E. H. L. 1946. *A Descriptive and Bibliographical List of Irish Figure Sculptures of the Early Christian Period* Portland.

Sexton, R. 1998. Porridges, gruels and Breads: The Cereal Foodstuffs of early medieval Ireland, in *Early Medieval Munster: archaeology, history and society*, eds. M. A. Monk & J. Sheehan Cork: Cork University Press, 76–86.

Seymour, S. J. D. 1932–1934. The coarb in the medieval Irish Church. *Proceedings of the Royal Irish Academy Section C,* 41, 219–31.

Sharpe, R. 1982. St Patrick and the see of Armagh. *Cambridge Medieval Celtic Studies,* 4, 33–59.

–––– 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 *Pastoral Care before the Parish*, eds. J. Blair & R. Sharpe Leicester: Leicester University Press, 81–109.

Shee Twohig, E. 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, 120–3.

–––– 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, J. 1982. The Early Historic church-sites of North Clare. *North Munster Antiquarian Journal,* 24, 29–47.

–––– 1982. A Viking-age silver hoard from the River Shannon, Co. Clare (note). *North Munster Antiquarian Journal,* 24, 102–3.

–––– 1987. A reassessment of the Viking burial from Eyrephort, Co. Galway *Journal of the Galway Archaeological and Historical Society,* 41, 60–72.

–––– 1989–1990. A Viking-age silver arm-ring from Portumna, Co. Galway. *Journal of the Galway Archaeological and Historical Society,* 42, 125–30.

–––– 1990. A pair of Viking age animal-headed arm-rings from County Cork. *Journal of the Cork Historical and Archaeological Society,* 41–54.

–––– 1990. Some Early Historic cross-forms and related motifs from the Iveragh Peninsula. *Journal of the Kerry Archaeological and Historical Society,* 23, 157–74.

–––– 1991–1992. Coiled armrings- An Hiberno-Viking silver armring type. *Journal of Irish Archaeology,* 6.

–––– 1992. The Rathmooley Hoard and other Viking Age silver from Co. Tipperary. *Tipperary Historical Journal,* 5, 210–6.

–––– 1994. A Merovingian background for the Ardmoneel stone? *Journal of the Cork Historical and Archaeological Society,* 99, 23–31.

–––– 1995. Silver and Gold Hoards: Status, Wealth and Trade in the Viking Age. *Archaeology Ireland,* 9(3), 19–22.

–––– 1998. Early Viking age silver hoards from Ireland and their Scandinavian elements, in *Ireland and Scandinavia in the early Viking age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn, 166–202.

–––– 2001. Ireland's Viking Age hoards: Sources and Contacts, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 51–60.

Sheehan, J., S. S. Hansen & D. Ó Corrain 2001. A Viking Age maritime haven: A reassessment of the island settlement at Beginish, co. Kerry. *Journal of Irish Archaeology,* 10.

Sheehan, J. & F. Moore 1981. An unrecorded ecclesiastical enclosure at Ballyallaban, Co. Clare. *North Munster Antiquarian Journal,* 23, 5–8.

Shetelig, H. (ed.) 1940. *Viking antiquities in Great Britain and Ireland,* Oslo: H. Aschehoug & Co.

–––– 1954. *Viking antiquities in Great Britain and Ireland. Part VI.,* Oslo: H. Aschehoug & Co.

Siggins, A. 1988. Some early Christian slabs from Fuerty and Clontuskert. *Journal of the Roscommon Historical and Archaeological Society,* 2, 55-9.

Sigurdsson, G. 1988. *Gaelic Influence in Iceland: Historical and Literary Contacts. A Survey of Research,* Reykjavik: Menningarsjóður.

Simms, A. 1979. Medieval Dublin: A topographical analysis. *Irish Geography,* 12, 25–41.

–––– 1990. Medieval Dublin in a European context: from proto-town to chartered town, in *Medieval Dublin: The making of a metropolis*, ed. H. Clarke Dublin: Blackrock, 37–51.

Simms, G. 1986. *The Book of Kells: a selection of pages reproduced with a description and notes,* Mountrath:

Dolman Press & the Library of Trinity College.

Simms, K. 1978. Guesting and feasting in Gaelic Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 108, 67–100.

Simpson, L. 1994. *Excavations at Isolde's Tower, Dublin,* Dublin: Temple Bar Properties Ltd.

–––– 1995. *Excavations at Essex Street West, Dublin,* Dublin: Temple Bar Properties Ltd.

–––– 1996. *Smock Alley Theatre: the evolution of a building,* Dublin: Temple Bar Properties.

–––– 1997. Researching Temple Bar's Archaeology. *Archaeology Ireland,* 11(2), 26–8.

–––– (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 *Medieval Dublin I : proceedings of the Friends of Medieval Dublin Symposium 1999*, ed. S. Duffy Trinity College 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 *Medieval Dublin V : proceedings of the Friends of Medieval Dublin Symposium 2003* ed. S. Duffy Trinity College Dublin: Four Courts Press, 9–51.

–––– 2006. *Dublin City: walls and defences = Chathair Bhaile Átha Cliath : múrtha agus cóir chosanta* Bray: Wordwell Ltd on behalf of Dublin City Council.

Simpson, W. G. 1972. A gaming board of Ballinderry-type from Knockanboy, Derrykeighan, Co. Antrim. *Ulster Journal of Archaeology,* 35, 63–4.

Sims-Williams, P. 1986. The visionary Celt: the construction of an "ethnic preconception. *Cambridge Medieval Celtic Studies,* 11, 97–112.

–––– 1998. Celtomania and Celtoscepticism. *Cambridge Medieval Celtic Studies,* 36, 1–35.

–––– (ed.) 2003. *The Celtic inscriptions of Britain: phonology and chronology, c.400-1200* Oxford: Blackwell.

Sims-Willlams, P. 1992. The additional letters of the ogam alphabet. *Cambridge Medieval Celtic Studies,* 23, 29–75.

Singh, G. & A. G. Smith 1973. Post-glacial vegetational history and relative land and sea level changes in Lecale, county Down. *Proceedings of the Royal Irish Academy Section B,* 73B, 1–51.

Slavin, M. 2005. *The ancient books of Ireland,* Dublin: Wolfhound Press.

Smart, V. 1986. Scandinavians, Celts and Germans in Anglo-Saxon England: the evidence of moneyers names, in *Anglo-Saxon monetary history*, ed. M. Blackburn Leicester: Leicester university Press, 171–84.

Smith, B. (ed.) 1999. *Britain and Ireland 900-1300: Insular responses to Medieval European Change,* Cambridge: Cambridge University Press.

Smith, J. T. 1972. Ardmore Cathedral. *Journal of the Royal Society of Antiquaries of Ireland,* 102, 1–13.

Smith, M. 1998. Genetic variation and Celtic population history. *Cornish Studies,* 6, 7–22.

Smithwick, P. 1988. Saint Canice's Well. *Old Kilkenny Review*, 526–7.

Smyth, A. P. 1977. *Scandinavian kings in the British Isles, 850-880,* Oxford: Oxford University Press.

–––– 1979. *Scandinavian York and Dublin: the history and archaeology of two related Viking kingdoms,* Dublin: Tudor House Press.

–––– 1982. *Celtic Leinster: towards an historical geography of early Irish civilization A.D.500-1600,* Blackrock: Irish Academic Press.

–––– 1984. *Warlords and holy men : Scotland AD 80-1000,* London: London : Edward Arnold.

–––– (ed.) 1998. *Medieval Europeans: studies in ethnic identity and national perspectives in medieval Europe,* Basingstoke: Macmillan.

–––– 1999. The effect of Scandinavian raiders on the English and Irish churches: a preliminary reassessment, in *Britain and Ireland 900-1300: Insular responses to Medieval European Change*, ed. B. Smith Cambridge: Cambridge University Press, 1–38.

–––– (ed.) 2000. *Seanchas: studies in early and medieval Irish archaeology, history and literature in honour of Francis J. Byrne* Dublin: Four Courts Press.

Smyth, M. 1987. Isidore of Seville and early Irish cosmography. *Cambridge Medieval Celtic Studies,* 14, 69–102.

–––– 1996. *Understanding the universe in seventh-century Ireland,* Woodbridge: Boydell Press.

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.

Somerville, B. T. 1931. "The Fort" on Knock Drum, West Carbery, County Cork. *Journal of the Royal Society of Antiquaries of Ireland,* 61, 1–14.

Somerville, O. 1993. Kite-Shaped Brooches. *Journal of the Royal Society of Antiquaries of Ireland,* 123, 59–101.

Sparks, M. 1950. Gowran. *North Munster Antiquarian Journal,* 3, 43–6.

Soulas, S. 1996. 'Présentation et provenance de la céramique estampée à Bourdeaux' *Aquitania* (14), 237-243.

–––– 1960. St. Canice's Well. *Old Kilkenny Review,* 12, 32–7.

Spearman, R. M. & J. Higgitt 1993. 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 in *Proceedings of the second International Conference on Insular Art held in the National Museums of Scotland in Edinburgh, 3-6 January 1991*, eds. R. M. Spearman & J. Higgitt Edinburgh: Stroud 267.

Spellissy, S. 1981. Ballyalla and Drumcliffe crannogs. *The Other Clare,* 5, 10–1.

Spencer, K. 1988–1989. Kiltennel Church, Gorey, Co. Wexford. *Journal of the Wexford Historical Society,* 12, 98–

103.

Stacey, R. C. 2007. *Dark speech: the performance of law in early Ireland*: University of Pennsylvania Press.

Stalley, R. 1985. The original site of St. Patrick's Cross, Cashel. *North Munster Antiquarian Journal,* 27, 8–10.

Stalley, R. A. 1980. Mellifont Abbey: a study of its architectural history. *Proceedings of the Royal Irish Academy Section C,* 80, 263–354.

–––– 1990. European art and the Irish high crosses. *Proceedings of the Royal Irish Academy Section C,* 90, 135–58.

–––– 1994. In search of Romanesque sculpture. *Archaeology Ireland,* 8(4), 7–9.

–––– 1994. Scribe and Mason: the Book of Kells and the Irish High Crosses, in *The Book of Kells: Proceedings of a conference at Trinity College Dublin 6-9 September 1992*, ed. F. O'Mahony Aldershot: Scolar Press.

–––– 1996. Decorating the lavabo: late Romanesque sculpture from Mellifont Abbey. *Proceedings of the Royal Irish Academy Section C,* 96, 237–64.

–––– 1996. *Irish high crosses* Dublin: Town House and Country House.

–––– 1997. Sculptured Stone Figure, in *Late viking age and medieval Waterford: excavations 1986-1992 /Maurice F. Hurley, Orla M.B. Scully with Sarah W.J. McCutcheon ; based on excavations and stratigraphic reports by Andrew S.R. Gittins … [et al.] ; editors: Terry Barry, Rose M. Cleary and Maurice F. Hurley*, eds. M. F. Hurley, O. M. B. Scully & S. W. J. McCutcheon Waterford: Waterford Corporation, 400-3.

–––– 1997. The Tower Cross at Kells, in *The Insular Tradition*, eds. C. E. Karkov, M. Ryan & R. Farrell Albany: State University of New York Press, 115-41.

–––– 2000. The construction of the medieval cathedral., c. 1030-1250, in *Christ Church Cathedral, Dublin: A history*, ed. K. Milne Dublin: Four Courts Press, 53-74.

–––– 2005. Ecclesiastical Architecture, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 714–43.

Stanley, M. 2003. Archaeological survey of Irish bogs: information without understanding? *Journal of Wetland Archaeology,* 3, 61–74.

Stanley, M. & C. Moore 2004. Medieval peatland dwellings. *Archaeology Ireland,* 18(4), 12–4.

Stelfox, A. W. 1930–1931. Kilgreany Cave, Co. Waterford. *Irish Naturalists Journal,* 3, 118–23.

Stenberger, M. 1966–1967. A. ring-fort at Raheennamadra, Knocklong, Co. Limerick. *Proceedings of the Royal Irish Academy Section C,* 65, 37–54.

Stephens, F. E. 1946. An interlinear design in the Book of Kells. *Journal of the Royal Society of Antiquaries of Ireland,* 76, 213–4.

Stevens, P. 2006. A monastic enclosure site at Clonfad, Co. Westmeath. *Archaeology Ireland,* 20(2), 8–11.

–––– 2007. Burial and ritual in late prehistory in north Wexford: excavation of a ring-ditch cemetery in Ask townland, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 35–46.

–––– 2007. Clonfad 3: a unique glimpse into early monastic life in county Westmeath. *Seanda: National Roads Authority Magazine,* 2, 42–3.

Stevenson, R. B. K. 1947. The Shannon Shrine (note). *Journal of the Royal Society of Antiquaries of Ireland,* 77, 156–7.

–––– 1956. The chronology and relationships of some Irish and Scottish crosses. *Journal of the Royal Society of Antiquaries of Ireland,* 86, 84–96.

–––– 1981–1982. Aspects of ambiguity in crosses and interlace (The Oliver Davies Lecture for 1981) *Ulster Journal of Archaeology,* 44–45, 1–27.

–––– 1983. Further notes on the Hunterston and Tara Brooches, Monymusk reliquary and Blackness Bracelet. *Proceedings of the Society of Antiquaries of Scotland,* 113, 469–77.

–––– 1985. Notes on the sculptures at Fahan Mura and Carndonagh, County Donegal. *Journal of the Royal Society of Antiquaries of Ireland,* 115, 92–5.

–––– 1987. Brooches and Pins: Some Seventh-to Ninth Century Problems, in *Ireland and Insular Art A.D. 500-1200: Proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy.

–––– 1989. The Celtic Brooch from Westness, Orkney and hinged pins. *Proceedings of the Society of Antiquaries of Scotland,* 119, 239-69.

–––– 1993. Further thoughts on some well known problems, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 16-26.

Stevick, R. D. 1986. The Echternach Gospels' evangelist-symbol pages: forms from the `two true measures of geometry. *Peritia,* 5, 284–308

–––– 1991. The plan of the Evangelist portrait pages in the Book of Mulling. *Journal of the Royal Society of Antiquaries of Ireland,* 121, 27–44.

–––– 1994. *The Earliest Irish and English Bookarts: Visual and Poetic Forms before A. D. 1000* Philadelphia.

–––– 1998. The form of the Tara Brooch. *Journal of the Royal Society of Antiquaries of Ireland,* 128, 5–16.

–––– 1999. The shape of the Durrow cross. *Peritia,* 13, 144–53

–––– 1999. Shapes of early sculptured crosses of Ireland. *Gesta,* 38, 3–21.

–––– 2004. The ancestry of 'coherent geometry' in insular designing. *Journal of the Royal Society of Antiquaries of*

Ireland, 134, 5–32.

Stokes, W. 1862. *Three Irish glossaries: Cormac's glossary Codex A (from a manuscript in the Library of the Royal Irish Aademy), 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),* Williams & Norgate, London.

Stout, G. 1982. Preliminary report of the excavations at Ballymount Great, Co. Dublin 1982, Dublin: OPW.

–––– 1989. The Archaeology of County Wicklow. *Archaeology Ireland,* 3(4), 126–31.

Stout, G. & M. Stout 1992. Patterns in the Past: county Dublin 5,000B.C.-1,000 A.D. , in *Dublin City and County: From Prehistory to Present,* eds. F. H. A. Aalen & K. Whelan 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 Section C,* 91 Section C(8), 201–43.

–––– 1992. Plans from plans: an analysis of the 1:2500 OS series as a source for ringfort morphology. *Proceedings of the Royal Irish Academy Section C,* 92, 37–53.

–––– 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 *A history of settlement in Ireland,* ed. T. B. Barry London: Routledge, 81–109.

Strijbosch, C. 2000. *Bronnen van De reis van Sint Brandaan. English: The seafaring saint: sources and analogues of the twelfth century Voyage of Saint Brendan (Translated by Thea Summerfield),* Dublin: Four Courts Press.

Sullivan, E. E. 1994. Urban excavations-on the crest of a wave? *Trowel,* 5, 26–9.

Swan, D. L. 1971. *The recognition and recovery of ecclesiastical enclosures by aerial observarions and air photography,* (Unpublished M.A.) Dublin: University College Dublin.

–––– 1972. Fennor. *Ríocht na Mídhe,* 5(2), 64–9.

–––– 1976. Excavations at Kilpatrick Churchyard, Killucan, Co. Westmeath, July/August 1973 and 1975. *Ríocht na Mídhe,* 6(2), 89–96.

–––– 1978. The Hill of Tara, county Meath: the evidence of Aerial Photography. *Journal of the Royal Society of Antiquaries of Ireland,* 108, 51–66.

–––– 1983. Duleek, an early Christian site. *Annals of Duleek,* 3, 12–20.

–––– 1983. Enclosed ecclesiastical sites and their relevance to settlement patterns of the first millenium A.D., in *Landscape Archaeology in Ireland,* eds. T. Reeves-Smyth & F. Hammond Oxford: Tempus Reparatum, 269–80.

–––– 1985. Monastic proto-towns in early medieval Ireland: the evidence of Aerial Photography, plan analysis and survey, in *The comparative history of urban origins in non-Roman Europe: Ireland, Wales, Denmark, Germany, Poland and Russia from the ninth to the thirteenth century,* eds. H. Clarke & A. Simms Oxford: Tempus Reparatum, 77–102.

–––– 1987. A carved stone head from Killaspuglonane, Co. Clare, in *Figures from the Past,* ed. E. Rynne Dun Laoghaire: Glendale Press for the Royal Society of Antiquaries of Ireland, 159-67.

–––– 1988. The Early Christian ecclesiastical sites of County Westmeath, in *Settlement and Society in Medieval Ireland,* ed. J. Bradley Kilkenny: Boethus, 3–31.

–––– 1991. Some ecclesiastical sites in Co. Clare. *The Other Clare,* 15, 61–3.

–––– 1994–1995. Excavations at Kilpatrick, Killucan, Co. Westmeath, evidence for bone, antler and iron working. *Ríocht na Mídhe,* 9(1), 1–21.

–––– 1996. Archaeological testing at Stamullin, Co. Meath. *Ríocht na Mídhe,* 9(2), 48-59.

–––– 1998. The Market Cross, Kells, Co. Meath. *Ríocht na Mídhe,* 9(4), 49–55.

–––– 1998. *Teltown: an ancient assembly site in County Meath* Bray: Wordwell.

–––– 2000. Archaeological excavations at Usher's Quay, 1991, in *Medieval Dublin I: proceedings of the Friends of Medieval Dublin Symposium 1999* ed. S. Duffy Trinity College Dublin: Four Courts Press, 126–58.

Swan, R. 2002. Archaeological investigations on the Kinnegad-Enfield-Kilcock motorway scheme. *Archaeology Ireland,* 16(4), 24–7.

Sweetman, D. 1978. Excavation of Medieval 'field boundaries' at Clonard, County Meath. *Journal of the Royal Society of Antiquaries of Ireland,* 108, 10–22.

–––– 1984. Archaeological excavations at Kilcash Church, Co. Tipperary. *North Munster Antiquarian Journal,* 26, 36–43.

–––– 1984. Romanesque carvings at Killodiernan, Co. Tipperary. *North Munster Antiquarian Journal,* 26, 44–53.

Sweetman, D. & M. de Buitléir 1976. Souterrain in the townland of Ahenny, Co. Tipperary (note), . *North Munster Antiquarian Journal,* 18, 73–4.

Sweetman, D. P. 1969. *Aspect of stave-built wooden vessels in Ireland from the late Bronze age to C. 1000 A.D.,* (Unpublished M.A.) Dublin: University College Dublin.

–––– 1974. Trim Castle Archaeological Excavations (Preliminary Report). *Ríocht na Mídhe,* 5(4), 68–77.

–––– 1975. Souterrain in the townland of Newrath Big, Co. Meath. *Ríocht na Mídhe,* 6(1), 54.

–––– 1978. Archaeological excavations at Trim Castle, Co. Meath 1971–74. *Proceedings of the Royal Irish Academy Section C,* 78, 127–98.

–––– 1983. Reconstruction and partial excavation of an Iron Age burial mound at Ninch, Co. Meath. *Ríocht na*

Midhe, 7(2), 58–68.

—— 1983. Souterrain and burials at Boolies Little, Co. Meath. *Ríocht na Midhe,* 7(2), 42–57.

—— 1995. *Irish castles and fortified houses,* Dublin: Country House.

—— 2000. *Medieval castles of Ireland* Woodbridge: Boydell Press.

Swift, C. 1994. Celtic monasticism-a discipline's search for romance? *Trowel,* 5, 21–5.

—— 1995. Dating Irish grave slabs: the evidence of the annals, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO, 245-9.

—— 1996. Christian communities in fifth and sixth century Ireland. *Trowel,* 7, 11–9.

—— 1996. Pagan monuments and Christian legal centres in early Meath. *Ríocht na Midhe,* 9(2), 1–26.

—— 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.

—— 1999. Early medieval Irish grave slabs and their inscriptions. *Durham Archaeological Journal,* 14-15, 111-8.

—— 2000. The local context of Oenach Tailten. *Ríocht na Midhe,* 11(1), 24–50.

Synder, C., A. 2003. *The Britons (The People of Europe),* London: Blackwell Publishers.

Synott, C. & L. Downey 2004. Bog Butter- its historical context and chemical composition. *Archaeology Ireland,* 18(2), 32–5.

Talbot-Crosbie, B. 1997. Tobar na Molt [K.A.M. Vol. III, No. 7, October 1911, 421-436]. *Journal of the Kerry Archaeological and Historical Society,* 30, 23–33.

Taylor, A. B. 1958. Dumazbakki-An Irish place name in Old Norse form. *Journal of the Royal Society of Antiquaries of Ireland,* 88, 111–4.

Taylor, K. 2007. Prehistoric features and an early medieval enclosure at Coonagh West, Co. Limerick, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 73–9.

Tempest, H. G. 1933. Slab-lined graves, Proleek townland and Tallanstown (note). *Journal of the Louth Archaeological and Historical Society,* 8(1), 100.

—— 1933. Three souterrains. Dundalk Demesne, Mullaboy & Irish Grange. *Journal of the Louth Archaeological and Historical Society,* 8(1), 95–7.

—— 1940. Mediaeval lintel at Ballymascanlon. *Journal of the Louth Archaeological and Historical Society,* 9(4), 344–5.

—— 1941. Souterrain in Proleek Acres [note]. *Journal of the Louth Archaeological and Historical Society,* 10(1), 83.

—— 1942. Souterrain in Proleek Acres townland. *Journal of the Louth Archaeological and Historical Society,* 10(2), 149–50.

—— 1944. Kilwore, Proleek townland. *Journal of the Louth Archaeological and Historical Society,* 10(4), 316–7.

—— 1944. The monastery of Inis Moght. *Journal of the Louth Archaeological and Historical Society,* 10(4), 342–5.

—— 1948. More stone-lined graves at St. Leonard's, Dundalk [note]. *Journal of the Louth Archaeological and Historical Society,* 11(4), 315.

—— 1952. Graves discovered at [Cambricville,] Dundalk, in 1881. After account by Mr. James McCormack CE in JRSAI 1881. *Journal of the Louth Archaeological and Historical Society,* 12(4), 251–2.

—— 1957. Souterrain in Kilcurry Townland. *Journal of the Louth Archaeological and Historical Society,* 14(1), 37.

—— 1960. Catalogue of the collection of antiquities of the County Louth Archaeological Society, 1961. *Journal of the Louth Archaeological and Historical Society,* 14(4), 214–31.

Tennyson, M. 1996. A likely crannog site explored at Loughmerans, Kilkenny. *Old Kilkenny Review*, 112–6.

Thacker, A. 1998. Memorializing Gregory the Great: the origin and transmission of a papal cult in the seventh and early eighth centuries. *Early Medieval Europe,* 7(1), 59.

Thacker, A. & R. Sharpe (eds.), 2002. *Local saints and local churches in the early medieval West* Oxford: Oxford University Press.

Thomas, A. 1992. *The Walled Towns of Ireland,* Blackrock: Irish Academic Press.

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.

Thomas, C. 1959. Imported pottery in Dark-Age western Britain. *Medieval Archaeology,* 3, 89–111.

—— 1971. *Britain and Ireland in Early Christian times: A.D. 400-800,* London: Thames and Hudson.

—— (ed.) 1972. *The Iron Age in the Irish Sea Province: papers given at a C.B.A.conference held at Cardiff, January 3 to 5, 1969,* London: Council for British Archaeology.

—— 1972. Souterrains in the Irish Sea Province, in *The Iron Age in the Irish Sea Province*, ed. C. Thomas London: Council for British Archaeology.

—— 1973. Irish colonists in south-western Britain. *World Archaeology,* 5(1), 5–13.

—— 1976. Imported Late-Roman Mediterranean pottery in Ireland and western Britain: chronologies and implications. *Proceedings of the Royal Irish Academy Section C,* 76, 245–65.

—— 1981. *Christianity in Roman Britian to A.D. 500,* London: Batsford Academic and Educational.

—— 1981. *A hand-list of Imported Pottery,* Truro.

—— 1981. *A provisional list of imported pottery in post-Roman Western Britain & Ireland* Redruth: Institute of

Cornish Studies.

–––– 1990. 'Gaillici Nautae de Gailiarium Provinciis'- A Sixth/Seventh Trade with Gaul, Reconsidered. *Medieval Archaeology,* 34, 1–27.

–––– 1994. *And Shall these Mute Stones Speak? Post-Roman Inscriptions in Western Britain* Cardiff: University of Wales Press.

Thornton, D. E. 1996. Locusts in Ireland? A problem in the Welsh and Frankish annals. *Cambridge Medieval Celtic Studies,* 31, 37–53.

–––– 1997. Early Medieval Louth: the Kingdom of Conaille Muirtheimne. *Journal of the Louth Archaeological and Historical Society,* 24(1), 139–50.

–––– 2000. Computing Celtic Kings and Clerics: Towards a Prosopography of Early Medieval Ireland. *History & Computing,* 12(1), 31.

Tierney, A. 2003. A note on the identification of Aileach. *Journal of the Royal Society of Antiquaries of Ireland,* 133, 182–6.

Tierney, J. 1998. Wood and Woodlands in early medieval Munster, in *Early medieval Munster: archaeology, history and society*, eds. M. A. Monk & J. Sheehan Cork: Cork University Press, 53–8.

Timoney, M. A. 1966–1971. A cross-inscribed slab from Kilmacowen, Co. Sligo. *Journal of the Galway Archaeological and Historical Society,* 32, 80–8.

–––– 1971. Ancient monuments in the neighbourhood of Broadford, Co. Clare, compiled by Lieutenant-Colonel William Audrey Bentley. *North Munster Antiquarian Journal,* 14, 3–16.

–––– 1999-2000. Recently discovered high cross at Drumcliff, Co. Sligo. *The Corran Herald,* 41-3.

Toal, C. (ed.) 1995. *North Kerry Archaeological Survey,* Dingle: Brandon in association with FAS Training and Employment Authority.

Tobin, R. 2003. Houses, Enclosures and Kilns, Excavations at Corbally, Co. Kildare. *Archaeology Ireland,* 17(3), 32–7.

Tohall, P. 1945. Two dug-out canoes from Co. Leitrim (note). *Journal of the Royal Society of Antiquaries of Ireland,* 75, 59–60.

–––– 1948. Supplementary note on a dug-out canoe (re Vol. LXXV, p59). *Journal of the Royal Society of Antiquaries of Ireland,* 78, 181–2.

–––– 1951. Team work on a rotary quern (note). *Journal of the Royal Society of Antiquaries of Ireland,* 81, 70–1.

Tomlinson, P. & A. R. Hall 1996. A Review of the Archaeological Evidence for Food Plants from the British Isles: an Example of the Use of the Archaeobotanical Computer Database (ABCD). *Internet Archaeology,* 1.

Towill, E. S. 1964. Saint Mochaoi and Nendrum *Ulster Journal of Archaeology,* 27, 103–20

Townsend, E. R. 1950. The Sons of Bregon. *Journal of the Royal Society of Antiquaries of Ireland,* 80, 77–89.

Tratman, E. K. 1937. Observations on Kilgreany Cave, Co. Waterford (note), Ireland. *Journal of the Royal Society of Antiquaries of Ireland,* 67, 120–4.

Trench-Jellicoe, R. 1997. Pictish and related harps: their form and decoration, in *The worm, the germ and the thorn: Pictish and related studies presented to Isabel Henderson*, ed. D. Henry Forfar: Pinkfoot Press, 159-72.

Trodd, V. 1998. *Clonmacnoise and West Offaly,* Banagher: Scéal Publications.

Tulloch, J. 2004. Art and Archaeology as an Historical Resource for the Study of Women in Early Christianity: An Approach for Analyzing Visual Data. *Feminist Theology: The Journal of the Britain & Ireland School of Feminist Theology,* 12(3), 277–304.

Turrell, S. & J. Whitaker 2007. Unique early medieval 'bog crannog'. *Archaeology Ireland,* 21(3), 4.

Twohig, D. C. 1971. Souterrains in Cos. Cork and Louth. *Journal of the Cork Historical and Archaeological Society,* 76, 128–33.

–––– 1972. Souterrain at Riverstown. *Journal of the Louth Archaeological and Historical Society,* 17(4), 261–3.

–––– 1976. Recent souterrain research in Co. Cork. *Journal of the Cork Historical and Archaeological Society,* 81, 19–38.

–––– 1990. Excavation of three ring-forts at Lisduggan North, County Cork. *Proceedings of the Royal Irish Academy Section C,* 90, 1–33.

Tyler, G. 1973. The glass house at Gurteens and glass developments in Ireland before its establishment. *Old Kilkenny Review,* 25, 51–60.

Tynan, T. 1932. Ancient Christian burial at Wolfhill, Kilfeacle, Co. Leix (note). *Journal of the Royal Society of Antiquaries of Ireland,* 62, 119–20.

Ua Brádaigh, T. 1959. Kilpatrick. *Ríocht na Midhe,* 2(1), 37–44.

Ua Broin, L. 1944. Clondalkin, Co. Dublin, and its neighbourhood. *Journal of the Royal Society of Antiquaries of Ireland,* 74, 191–218.

–––– 1957. The Mountain Commons of Saggart. *Journal of the Royal Society of Antiquaries of Ireland,* 87, 40–52.

Unit, I. A. W. 1997. Filling in the blanks: An archaeological survey of the Lemanaghan Bogs, Co. Offaly. *Archaeology Ireland,* 11(2), 22–5.

Valante, M. 1998. Reassessing the Irish monastic town. *Irish Historical Studies,* 31(121), 1–18.

–––– 1999. Taxation, tolls and tribute: the language of economics and trade in Viking-age Ireland, in *Proceedings of the Harvard Celtic Colloquium*, eds. M. Linkletter, D. Luft, H. Fogarty, I. Richmond, P. Malone & L. Radiker Harvard: Harvard University Press.

–––– 2000. Dublin's economic relations with hinterland and periphery in the later Viking Age, in *Medieval Dublin I: proceedings of the Friends of Medieval Dublin Symposium 1999* ed. S. Duffy Trinity Colege Dublin: Four Courts Press, 69–83.

Van Hoek, M. A. M. 1993. Early Christian rock art at Clehagh, Co. Donegal *Ulster Journal of Archaeology,* 56, 139–47.

Veelenturf, K. 1997. *Dia Brátha: escathological theophanies and Irish high crosses,* Amsterdam: Stichting Amsterdamse Historische Reeks.

–––– 2001. Irish high crosses and continental art: shades of iconographical ambiguity, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 83-101.

Verkerk, D. H. 2001. Pilgrimage *ad limina apostolorum* in Rome: Irish High Crosses and early Christian sacrophagi, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 9-26.

Vroom, J. 2003. *After Antiquity: Ceramics and society in the Aegean from the 7th to the 20th century*, Leiden.

Waddell, J. 1966–1971. A ringfort at Ballybrit, Co. Galway. *Journal of the Galway Archaeological and Historical Society,* 32, 73–9.

–––– 1970. Notes on some Kerry souterrains. *Journal of the Kerry Archaeological and Historical Society,* 3, 15–8.

–––– 1972–1973. An archæological survey of Temple Brecan, Aran. *Journal of the Galway Archaeological and Historical Society,* 33, 5–27.

–––– 1976. Kilcholan: An early ecclesiastical site on Inishmore, Aran. *Journal of the Galway Archaeological and Historical Society,* 35, 86–8.

–––– 1981. An unpublished high cross on Aran, County Galway. *Journal of the Royal Society of Antiquaries of Ireland,* 111, 29–35.

–––– 1983. Rathcroghan- A Royal Site in Connacht. *Journal of Irish Archaeology,* 1.

–––– 1987–1988. J.R.W. Goulden's excavations on Inishmore, Aran, 1953–1955. *Journal of the Galway Archaeological and Historical Society,* 41, 37–59.

–––– 2005. *Foundation myths : the beginnings of Irish archaeology* Bray: Wordwell.

Waddell, J. & M. Clyne 1995. M.V.Duignan's excavations at Kiltiernan, Co. Galway, 1950–1953. *Journal of the Galway Archaeological and Historical Society,* 47, 149–204.

Waddell, J. & P. Holland 1990. The Pekaun Site: Duignan's 1944 investigations. *Tipperary Historical Journal,* 3, 165–86.

Waddell, J., J. W. O'Connell & A. Korff (eds.), 1994. *The Book of Aran,* Newtownlynch: Tír Eolas.

Wailes, B. 1970. Excavations at Dun Ailinne, Co. Kildare. *Journal of the Royal Society of Antiquaries of Ireland,* 100, 79–90.

–––– 1970. Excavations at Dun Ailinne, near Kilcullen, Co. Kildare. *Journal of the Kildare Archaeological and Historical Society,* 14(5), 507–17.

–––– 1971. Excavation at Dún Ailinne, near Kilcullen, 1971. *Journal of the Kildare Archaeological and Historical Society,* 15(1), 5–11.

–––– 1973–1974. Excavation at Dun Ailinne. *Journal of the Kildare Archaeological and Historical Society,* 15(3), 234–42.

–––– 1974–1975. Excavation at Dun Ailinne, near Kilcullen. *Journal of the Kildare Archaeological and Historical Society,* 15(4), 345–58.

–––– 1976. Dun Ailinne: An Interim Report', in *Hillforts: later prehistoric earthworks in Britain and Ireland*, ed. D. W. Harding London: Academic Press, 319–38, 474–7, 531.

–––– 1982. The Irish "royal sites" in history and archaeology. *Cambridge Medieval Celtic Studies,* 2, 1–29.

–––– 1990. Dun Aillinne: A Summary Excavation Report. *Emania,* 7, 10–21.

Waldron, K. 1998. The churches of the Archdiocese of Tuam. *Cathair Na Mart,* 18, 162–8.

Waldron, T. 1959. Tobar a' Dhroo or The Hermit's Well, Clonetubrid. *Old Kilkenny Review,* 11, 49–52.

Walker, S. 2000. *Historic Ulster churches* Belfast: Institute of Irish Studies, Queen's University Belfast.

Wallace, J. N. A. 1936–1939. Crannog and Bronze Age find at Rosroe [Knocknalappa], Co. Clare (O.S. 6 in. map, 42). *North Munster Antiquarian Journal,* 1(1), 38.

Wallace, P. F. 1981. Anglo-Norman Dublin: continuity and change, in *Irish Antiquity: Essays and studies presented to M.J. O'Kelly*, ed. D. Ó Corrain, 247–66.

–––– 1981. Dublin's waterfront at Wood Quay: 900-1317, in *Waterfront archaeology in Britain and Northern Europe*, eds. G. Milne & B. Hobley London: Council for British Archaeology, 109–18.

–––– 1982. Carpentry in Ireland A.D. 900-1300- The Wood Quay evidence, in *Woodworking techniques before A.D. 1500. Papers presented to a symposium at Greenwich in September, 1980 (BAR) Vol. 129*, ed. S. McGrail Greenwich: Greenwich Museum, 263–99.

–––– 1982. Irish Early Christian 'wooden' oratories—a suggestion. *North Munster Antiquarian Journal,* 24, 19–28.

–––– 1985. The archaeology of Viking Dublin, in *The comparative history of urban origins in non-Roman Europe: Ireland, Wales, Denmark, Germany, Poland and Russia from the ninth to the thirteenth century*, eds. H. Clarke & A. Simms Oxford: Tempus Reparatum, 103–45.

–––– 1986. The English presence in Viking Dublin, in *Anglo-Saxon monetary history: essays in memory of Michael Dolley*, ed. M. Blackburn Leicester: Leicester University Press, 201–21.

–––– 1987. The economy and commerce of Viking Age Dublin, in *Untersuchungen zu handel und verkehr der vor- und fruhgeschichtlichen zeit in mittel- und Nordeuropa Vol. 4*, eds. K. Duwel, H. Jankuhn, H. Siems & D. Timpe Gottingen, 200–45.

–––– 1987. The Layout of Later Viking Age Dublin: Indications of its regulation and problems of continuity, in *Proceedings of the Tenth Viking Congress* Oslo, 271–85.

–––– 1987. Wood Quay Now: The Dublin Excavations Project. *Archaeology Ireland*, 1(1), 26–9.

–––– 1988. Archaeology and the emergence of Dublin as the principal town of Ireland, in *Settlement and Society in Medieval Ireland*, ed. J. Bradley Kilkenny: Boethus, 123–60.

–––– (ed.) 1988. *Miscellanea. 1,* Dublin: Royal Irish Academy.

–––– 1988. A Viking Dublin Perspecitve on Irish Vernacular Architecture, in *Keimelia: Studies in medieval archaeology in honour of Tom Delaney*, eds. G. Mac Niocaill & P. F. Wallace Galway: Galway University Press, 573–96.

–––– 1992. The archaeological identity of the Hiberno-Norse town *Journal of the Royal Society of Antiquaries of Ireland,* 122, 35–66.

–––– 1992. *The Viking age buildings of Dublin* Dublin: Royal Irish Academy for the National Museum of Ireland and the Royal Irish Academy.

–––– 1998. Line fishing in Viking Dublin: a contemporary explanation for archaeological evidence, in *Dublin and beyond the Pale: studies in honour of Patrick Healy*, ed. C. Manning Dublin: Wordwell in association with Rathmichael Historical Society, 3–18.

–––– 2000. Garrda and airbeada: the plot thickens in Viking Dublin, in *Seanchas: Studies in Early and Medieval Irish Archaeology, History and Literature in honour of Francis J. Byrne*, ed. A. P. Smyth Dublin: Dublin: Four Courts Press, 261–74.

–––– 2001. Ireland's Viking Towns, in *The Vikings in Ireland*, ed. A. Larsen Roskilde: The Viking Ship Museum, 37–50.

–––– 2004. A women of importance in ninth-century Finglas. *Archaeology Ireland,* 18(3), 7.

–––– 2005. The Archaeology of Ireland's Viking-Age Towns, in *A new history of Ireland . Vol. 1 Prehistoric and early Ireland*, ed. D. Ó Cróinín Oxford: Oxford University Press, 814–41.

–––– 2006. The Bigger Picture: Reconstructing Hiberno-Norse Dublin, in *Ireland, England and the Continent in the middle ages and beyond*, eds. H. Clarke & J. R. S. Philips Dublin: University College Dublin Press, 11–28.

Wallace, P. F. & R. Ó Floinn 1988. *Dublin 1000-discovery and excavation in Dublin 1842-1981,* Dublin: National Museum of Ireland.

–––– (eds.), 2002. *Treasures of the National Museum of Ireland: Irish Antiquities* Dublin: Gill & Macmillan in association with The Boyne Valley Honey Company.

Wallace, P. F. & M. A. Timoney 1987. Carrowntemple, Co. Sligo and its inscribed slabs, in *Figures from the past: studies on figurative art in Christian Ireland in honour of Helen M. Roe*, ed. E. Rynne Dun Laoghaire: Glendale Press for the Royal Society of Antiquaries of Ireland, 43-61.

Wallace, R. 1933. Doorway in a Stone Fort at Carran, Co. Clare (note). *Journal of the Royal Society of Antiquaries of Ireland,* 63, 247–8.

Walmsley, T. & J. M. Mogey 1939. The peoples of Northern Ireland, an anthropometric survey *Ulster Journal of Archaeology,* 2, 89–97

Walsh, A. 1995. Viking swords in Ireland. *Archaeology Ireland,* 9(3), 37–8.

–––– 1998. A summary classification of Viking age swords in Ireland, in *Ireland and Scandinavia in the Early Viking Age*, eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press, 222-38.

Walsh, C. 1989. Stratigraphic report on excavations at Peter St., High St., Olaf St., Waterford, Dublin: Dúchas.

–––– 1997. *Archaeological excavations at Patrick, Nicholas and Winetavern Streets, Dublin,* Dingle: Brandon.

–––– 2001. Dublin's southern town defences, tenth to fourteenth centuries: the evidence from Ross Road, in *Medieval Dublin II : proceedings of the Friends of Medieval Dublin Symposium 2000* ed. S. Duffy Trinity College Dublin: Four Courts Press, 88–127.

Walsh, F. & J. Harrison 2003. Early medieval enclosure at Killickaweeny, Co. Kildare. *Archaeology Ireland,* 17(1), 33–6.

Walsh, G. 1994. Preliminary report on the archaeological excavations on the summit of Croagh Patrick. *Cathair Na Mart,* 14, 1–10.

–––– 1995. Iron Age settlement in Co. Mayo. *Archaeology Ireland,* 9(1), 7–8.

–––– 2006. Archaeological finds on Mayo NRA Project. *Seanda: National Roads Authority Magazine,* 1, 3.

Walsh, L. 2003. Ballyskenagh. *Offaly Heritage,* 1, 51–8.

Walsh, M. 1965. A souterrain at Coomlogane. *Journal of the Cork Historical and Archaeological Society,* 70, 120-1.

–––– 1965. A water-mill at Ballyine, Co. Limerick *Journal of the Cork Historical and Archaeological Society,* 70, 14-25.

Walsh, P. 1977. *Dublin c.840-c.1540: The years of medieval growth,* Dublin: Ordnance Survey Ireland.

–––– 1983. The monastic settlement on Rathlin O'Birne Island, County Donegal. *Journal of the Royal Society of Antiquaries of Ireland,* 113, 53–66.

–––– 1987. The round tower at Nohaval Lower, County Cork (note). *Journal of the Royal Society of Antiquaries of Ireland,* 117, 144–6.

Walshe, P. T. 1931. The antiquities of the Dunlavin-Donard district. *Journal of the Royal Society of Antiquaries of*

Ireland, 61, 113–41.

Warhurst, C. 1967. Excavatons at Drumee Rath, Co Fermanagh *Ulster Journal of Archaeology,* 30, 44–8.

————— 1969. Excavations at Rathbeg, Co Antrim *Ulster Journal of Archaeology,* 32, 93–100.

————— 1971. Excavation of a rath at Shane's Castle, Co Antrim *Ulster Journal of Archaeology,* 34, 58–64.

Warmers, E. 1983. Some ecclesiastical and secular insular metalwork found in Norweigan Viking graves. *Peritia,* 2, 227–306.

————— 1987. Egg and dart derivatives in insular art, in *Ireland and insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985,* ed. M. Ryan Dublin: Royal Irish Academy, 96–104.

————— 1993. Insular art in Carolingian Europe: the reception of old ideas in a new empire, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 35–44.

————— 1998. Insular finds in Viking age Scandinavia and the state formation of Norway, in *Ireland and Scandinavia in the early Viking age,* eds. H. Clarke, M. Ní Mhaonaigh & R. Ó Floinn Dublin: Four Courts Press, 37–72.

Warner, G. (ed.) 1926. *The Libelle of Englyshe Polycye,* Clarendon Press, Oxford.

Warner, R. B. 1972. A souterrain at Ballyeaston, Co Antrim *Ulster Journal of Archaeology,* 35, 61–2.

————— 1973. The Excavations at Clogher and their context. *Clogher Record,* 8(1), 5–12.

————— 1973–1974. The re-provenancing of two important penannular brooches of the Viking period *Ulster Journal of Archaeology,* 36–37, 58–70.

————— 1975. The coin-hoard from Ballycastle and a reprovenanced tortoise brooch from the mouth of the River Bann *Ulster Journal of Archaeology,* 38, 89–90.

————— 1979. The Irish souterrains and their background, in *Subterranean Britain, aspects of underground archaeology,* ed. H. Crawford New York: St. Martin's Press, 100–44.

————— 1980. Irish souterrains: later Iron Age refuges. *Archaeologia Atlantica,* 3, 81–99.

————— 1985–1986. The date of the start of Lagore. *Journal of Irish Archaeology,* 3.

————— 1987. Ireland and the origins of escutcheon art, in *Ireland and insular art, A.D. 500-1200: proceedings of a conference at University College Cork, 31 October-3 November 1985,* ed. M. Ryan Dublin: Royal Irish Academy, 19–22.

————— 1994. On Crannogs and Kings (part 1). *Ulster Journal of Archaeology,* 57, 61–9.

————— 1995. Tuathal Techtmar: a myth or ancient literary evidence for a Roman invasion? . *Emania,* 13, 23–32.

————— 2004. Notes on the inception and early development of the royal mound in Ireland, in *Assembly Places and Practices in Medieval Europe,* eds. A. Pantos & S. Semple Dublin: Four Courts Press, 27–43.

Warner, R. B. & I. G. Meighan 1994. Dating Irish glass beads through chemical analysis, in *Irish Antiquity,* ed. D. Ó Corrain Dublin: Four Courts Press, 52–66.

Warntjes, I. 2004. Regnal succession in early medieval Ireland. *Journal of Medieval History,* 30(4), 377–410.

Warren, F. E. (ed.) 1987. *The liturgy and ritual of the Celtic church,* Woodbridge Boydell Press.

Wasserstein, D. 1988. The creation of Adam and the Apocrypha in early Ireland. *Proceedings of the Royal Irish Academy Section C,* 88, I–17.

Waterman, D. M. 1951. Excavations at Dundrum Castle *Ulster Journal of Archaeology,* 14, 15–29

————— 1953. Notes on Two Early Medieval Swords found in Ulster *Ulster Journal of Archaeology,* 16, 59–62

————— 1956. The excavation of a house and Souterrain at Craig Hill, Co. Antrim *Ulster Journal of Archaeology,* 19, 87–91

————— 1956. The excavation of a house and Souterrain at White Fort, Drumaroad, Co. Down. *Ulster Journal of Archaeology,* 19, 73–86

————— 1958. Excavations at Ballyfounder Rath, Co Down *Ulster Journal of Archaeology,* 21, 39–61

————— 1958. Note on the discovery of a Rath in Spittle Ballee, Townland, Co Down *Ulster Journal of Archaeology,* 21, 62–3

————— 1959. Excavations at Lismahon, Co. Down. *Medieval Archaeology,* 3, 139–76.

————— 1959. Piper's Fort, Farranfad, Co Down *Ulster Journal of Archaeology,* 22, 83–7.

————— 1959. White Island: Note on a Recent Excavation. *Ulster Journal of Archaeology,* 22, 65-6.

————— 1960. An early Christian mortuary house at Saul, Co Down, with notes on similar monuments in Ulster *Ulster Journal of Archaeology,* 23, 82–8.

————— 1963. Excavations at Duneight, co. Down. *Ulster Journal of Archaeology,* 26, 55–78

————— 1967. Early Christian churches and cemetery at Derry, Co Down *Ulster Journal of Archaeology,* 39, 53–75.

————— 1967. A pair of raths at Glenkeen, Co Derry *Ulster Journal of Archaeology,* 30, 49–52

————— 1968. Note on a destroyed rath and souterrain at Killyglen, Co Antrim *Ulster Journal of Archaeology,* 31, 67–70

————— 1971. A marshland habitation site near Larne, Co Antrim *Ulster Journal of Archaeology,* 65–76

————— 1971. 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

————— 1973–1974. A second round tower at Devenish, Co Fermanagh *Ulster Journal of Archaeology,* 36–37, 100–2.

Waterman, D. M. & A. E. P. Collins 1952. The Excavations of Two Raths at Ballywillwill, Co Down *Ulster Journal of Archaeology,* 15, 71–83

Waterman, D. M. & A. Hamlin 1976. Banagher Church, County Derry *Ulster Journal of Archaeology,* 39, 25–41.

Waters, O. D. P. 1969. Some notes on the ogham stone at Piltown, in the barony of Lower Duleek, Co. Meath. *Riocht na Midhe,* 4(3), 56–7.

Watt, J. A. 1998. The church in medieval Ireland Dublin: University College Dublin Press, 288.

Weatherup, D. R. M. 1975. Armagh County Museum, archaeological acquisitions, 1960-1974. *Journal of the Royal Society of Antiquaries of Ireland,* 105, 5–20.

–––– 1978. Armagh Archaeological Museum: Archaeological acquisitions 1935-195. *Journal of the Royal Society of Antiquaries of Ireland,* 108, 23–50.

–––– 1982. Armagh County Museum archaeological acquisitions: the collection of the Armagh Natural History and Philosophical Society. *Journal of the Royal Society of Antiquaries of Ireland,* 112, 51–71.

Webster, L. 1988. Two Anglo-Saxon carved zoomorphic mounts from Dublin, in *Keimelia: studies in medieval archaeology and history in memory of Tom Delaney* eds. G. Mac Niocaill & P. F. Wallace Galway: Galway University Press, 162-7.

Wedge, K. 2003. St.Patrick: One man or multiple identities? *Cathair Na Mart,* 23, 134–8.

Weir, A. 1990. Potency and Sin: Ireland and the Phallic Continuum. *Archaeology Ireland,* 4(2), 52–6.

Weir, H. 1938. Fort at Emper, Co. Westmeath (note). *Journal of the Royal Society of Antiquaries of Ireland,* 68, 146–7.

Weir, H. W. L. 1997. Interesting Co. Clare Churches. *The Other Clare,* 21, 32–3.

Weitzmann, K. 1979. *Age of Spirituality: Late Antique and Early Christian Art. Third to Seventh Century,* New York: The Museum in association with Princeton University Press.

Werckmeister, O. K. 1962–1964. Three problems of tradition in pre-Carolingian figure style. From Visigothic to Insular illumination. *Proceedings of the Royal Irish Academy Section C,* 63, 167–89.

Werner, M. 1972. The Madonna and Child in the Book of Kells. *Art Bulletin,* 54, 1–23.

–––– 1990. On the origin of the form of the Irish High Cross. *Gesta,* 29(1), 98-110.

–––– 1997. Three works on the Book of Kells. *Peritia,* 11, 250–326.

Westropp, T. J. 1999. *Archaeology of the Burren : prehistoric forts and dolmens in North Clare (edited by Maureen Comber),* Ennis: CLASP Press.

Westwood, J. O. 1988. *The art of illuminated manuscripts: illustrated sacred writings being a series of illustrations of the ancient versions of the bible copied from illuminated manuscripts executed between the fourth and sixteenth centuries,* London: Bracken Books.

Wheeler, H. 1934. Cross Slabs at Inishkeel, Co. Donegal. *Journal of the Royal Society of Antiquaries of Ireland,* 64, 262.

Wheeler, H. A. 1950. The Tara Brooch: where was it found? *Journal of the Louth Archaeological and Historical Society,* 12(2), 155–8.

Whelan, K. & W. Nolan (eds.), 1987. *Wexford: history and society: interdisciplinary essays on the history of an Irish county,* Dublin: Geography Publications.

Whitaker, J., N. Rohan & S. Turrell 2008. Tracking the bogs. *Archaeology Ireland,* 22(1), 32–4.

Whitelock, D., R. McKitterick & D. N. Dumville 1982. *Ireland in early medieval Europe: studies in memory of Kathleen Hughes,* Cambridge: Cambridge University Press.

Whitfield, N. 1974. The finding of the Tara Brooch. *Journal of the Royal Society of Antiquaries of Ireland,* 104, 120–42.

–––– 1976. The original appearance of the Tara Brooch. *Journal of the Royal Society of Antiquaries of Ireland,* 106, 5–30.

–––– 1987. Motifs and Techniques of Celtic Filigree. Are they original?, in *Ireland and Insular Art, A.D. 500-1200: Proceedings of a conference at University College Cork, 31 October-3 November 1985*, ed. M. Ryan Dublin: Royal Irish Academy.

–––– 1992. Animal ornament on insular metalwork of the late 7th-8th centuries: its character and development, in *Medieval Europe 1992: art and symbolism, pre-printed papers 7*York, 9-15.

–––– 1993. The Filigree of the Hunterston and Tara Brooches, in *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*, eds. M. Spearman & J. Higgitt Edinburgh: Stroud: National Museums of Scotland 118–27.

–––– 1993. Some new research on gold and gold filigree from early medieval Ireland and Scotland, in *Outils et ateliers d'orfevres des temps anciens*, ed. C. Eluére Saint Germain-en-Laye: Antiquités Nationales Mémoire, 125-36.

–––– 1993. The sources of gold in early Christian Ireland. *Archaeology Ireland,* 7(4), 21–3.

–––– 1993. The sources of gold in Early Christian Ireland. *Archaeology Ireland,* 7(4), 21–3.

–––– 1995. Formal conventions in the depictions of animals on Celtic metalwork, in *From the isles of the north: early medieval art in Ireland and Britain : proceedings of the Third International Conference on Insular Art held in the Ulster Museum, Belfast, 7-11 April 1994*, ed. C. Bourke Belfast: HMSO, 89-104.

–––– 1996. Brooch or Cross? The Lozenge on the shoulder of the Virgin in the Book of Kells. *Archaeology Ireland,* 10(1), 20–3.

–––– 1997. Corinthian Bronze and the Tara Brooch. *Archaeology Ireland,* 11(1), 24–8.

–––– 1997. Filigree animal ornament from Ireland and Scotland of the late seventh-ninth centuries, in *The Insular*

     Tradition, eds. C. E. Karkov, M. Ryan & R. Farrell Albany: State University of New York Press, 211-43.

———— 1997. The Waterford Kite-brooch and its place in Irish metalwork, in *Late Viking age and medieval Waterford: excavations 1986-1992*, eds. M. F. Hurley, O. M. B. Scully & S. W. J. McCutcheon Waterford: Waterford Corporation, 490-517.

———— 1998. Sources of Gold in Ireland. *Archaeology Ireland,* 12(2), 40.

———— 2001. A filigree panel and a coin from an Irish crannog at Alnwick castle with an appendix on the discovery of crannogs at Strokestown, co. Roscommon. *Journal of Irish Archaeology,* 10.

———— 2001. The 'Tara' Brooch: an Irish emblem of status in its European context, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 211-47.

Whitfield, N. & E. Okasha 1991–1992. The Killamery Brooch: Its stamped ornament and inscription. *Journal of Irish Archaeology,* 6.

Wiggins, K. 1991. Strange Changes at King John's Castle. *Archaeology Ireland,* 5(3), 13–5.

———— 2000. A rescue excavation on Rathlin Island, County Antrim *Ulster Journal of Archaeology,* 59, 47–70.

———— 2006. A tale of two cemeteries. *Seanda: National Roads Authority Magazine,* 1, 33–5.

Wild, J. P. 1970. *Textile manufacture in the Northern Roman Provinces,* Cambridge: Cambridge University Press.

Wilde, S. W. R. 1961. *Catalogue of the antiquities of animal materials and bronze in the museum of the Royal Irish Academy,* Dublin: Royal Irish Academy.

———— 1961–1864. Statement on the presentation of certain antiquities. *Proceedings of the Royal Irish Academy,* 8, 324–30.

Wilkins, B. 2007. Time and tide: five millenia of environmental change and human activity on the banks of the Suir, in *New Routes to the Past: Proceedings of a public seminar on archaeological discoveries on National Road Schemes, August 2006*, eds. J. O'Sullivan & M. Stanley Bray: Wordwell, 61–71.

Williams, B. B. 1977. A souterrain in Loughermore Townland, County Antrim *Ulster Journal of Archaeology,* 40, 91.

———— 1978. Excavations at Lough Eskragh, County Tyrone *Ulster Journal of Archaeology,* 41, 37–48

———— 1980. Excavation of a tree-ring at Gallanagh, County Tyrone, and some observations on tree- rings *Ulster Journal of Archaeology,* 43, 97–101

———— 1983. Early Christian landscapes in County Antrim, in *Landscape Archaeology in Ireland*, eds. T. Reeves-Smyth & F. Hammond Oxford: Tempus Reparatum, 233–46.

———— 1984. Excavations at Ballyutoag, County Antrim *Ulster Journal of Archaeology,* 47, 37–49.

———— 1985. Excavation of a rath at Coolcran, County Fermanagh *Ulster Journal of Archaeology,* 48, 69–80.

———— 1985. Excavations at Ballyvollen townland, County Antrim *Ulster Journal of Archaeology,* 48, 91–102.

———— 1987. Archaeological Sites in Fermanagh. *Archaeology Ireland,* 1(1), 16–9.

———— 1990. The Archaeology of Rathlin Island. *Archaeology Ireland,* 4(2), 47–51.

———— 1996. Intertidal Archaeology in Strangford Lough. *Archaeology Ireland,* 10(3), 14–6.

———— 2003. Antrim Bell-shrine. *Archaeology Ireland,* 17(3), 38.

Williams, B. B. & M. J. Yates 1984. Excavations at Killylane, County Antrim (enclosure with souterrains, ?church, mill dams; settlement nearby; late field system with houses). *Ulster Journal of Archaeology,* 47, 63–70.

Williams, H. 2007. *Death and Memory in Early Medieval Britain,* Cambridge: Cambridge University Press.

———— 2008. Anglo-Saxonism and Victorian archaeology: William Wylie's Fairford Graves. *Early Medieval Europe,* 16(1), 49–88.

Williams, M. M. 1999. Warrior kings and saavy abbots: the sacred, the secular and the depiction of the contemporary costume on the Cross of the Scriptures, Clonmacnoise. *Avista Forum Journal,* 12(1), 4-11.

———— 2001. Constructing the market cross at Tuam: the role of cultural patriotism in the study of Irish high crosses, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 141-60.

Wilson, D. M. 1955. An Irish mounting in the National Museum of Copenhagen. *Acta Archaeologica,* 26, 163–72.

———— 1958. A group of penannular brooches of the Viking period, in *Proceedings of the Third Viking Congress*, ed. K. Eldjárn Reykjavik, 95-100.

———— 1966. *Viking art* London: Allen and Unwin.

———— 1980. *The Northern world : the history and heritage of northern Europe, AD 400-1100,* London: Thames and Hudson.

———— 1995. Scandinavian ornamental interlace in the Irish sea region in the Viking age, in *The middle ages in the north-west*, eds. T. Scott & P. Starkey Oxford: Leopard's Head Press for Liverpool Centre for Medieval Studies, 37–57.

Wiltshire, E. & R. J. Wiltshire 1965. Miscellaneum: a cross and cillín in Upper Lockstown, County Wicklow (note). *Journal of the Royal Society of Antiquaries of Ireland,* 95, 249.

Wincott Heckett, E. 2003. *Viking age headcoverings from Dublin* Dublin: Royal Irish Academy.

Wood, H. 1937. Raphoe round tower (note). *Journal of the Royal Society of Antiquaries of Ireland,* 67, 304–5.

Wood, I. N. & J. N. Hillgarth (eds.), 1986. *Christianity and paganism, 350-750: the conversion of Western Europe* Philadelphia University of Pennsylvania Press.

Wooding, J. M. 1996. Cargoes in trade along the western seaboard, in *External contacts and the economy of late Roman and post-Roman Britain*, ed. K. R. Dark Woodbridge: Boydell Press, 67–82.

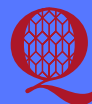———— 1996. *Communication and Commerce along the Western Sealanes AD 400-800* Oxford: Tempus Reparatum.

–––– 2002. Trade as a factor in the transmission of texts between Ireland and the continent in the sixth and seventh centuries, in *Proceedings of the fifth international colloquium on Ireland and Europe in the early Middle Ages held under the joint auspices of Konstanz University and University College Dublin.* , eds. P. i. a. Ní Chatháin & M. Richter University of Konstanz: Dublin: Four Courts Press, 14–26.

Wormald, F. 1984. *Studies in medieval art from the sixth to the twelfth centuries (edited by J.J.G. Alexander, T.J. Brown, Joan Gibbs),* London: Harvey Miller.

Wright, D. 1963. The tablets from Springmount bog: a key to early Irish palaeography. *American Journal of Archaeology,* 67(2), 219.

–––– 1982. The Irish element in the formation of Hiberno-Saxon Art: Calligraphy and Metalwork, in *Die Iren and Europa im fruheren Mittelater*, ed. H. Lowe Stuttgart: Klett-Cotta, 99–100.

Wyse Jackson, R. 1956. Antiquities of Cashel. *North Munster Antiquarian Journal,* 7(3).

–––– 1962–1963. An introduction to Irish silver. *North Munster Antiquarian Journal,* 1–2, 1–24.

Yates, M. J. 1983. Preliminary excavations at Movilla Abbey, county Down, 1980. *Ulster Journal of Archaeology,* 46.

Youngs, S. 1989. Fine metalwork to c.A.D. 650, in *The Work of Angels, Masterpieces of Celtic metalwork, 6th to 9th centuries AD,*, ed. S. Youngs Texas: University of Texas Press, 20-3.

–––– (ed.) 1989. *The Work of Angels, Masterpieces of Celtic metalwork, 6th to 9th centuries AD,* Texas: University of Texas Press.

–––– 1993. The steeple Bumpstead Boss, in *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* eds. M. Spearman & J. Higgitt Edinburgh: Stroud, 143-50.

–––– 1993. Two medieval Celtic enamelled buckles from Leicestershire. *Journal of the Leicestershire Archaeological and Historical Society,* 67, 15-22.

–––– 1997. Enamelling in early medieval Ireland. *Irish Arts Review Yearbook,* 13, 43-51.

–––– 1997. Recent finds of insular enamelled buckles, in *The Insular Tradition*, eds. C. E. Karkov, M. Ryan & R. Farrell Albany: State University of New York Press, 189-209.

–––– 2001. 'From Ireland coming': fine metalwork from the Medway, Kent, England, in *From Ireland coming: Irish art from the early Christian to the late Gothic period and its European context*, ed. C. Hourihane Princeton: Princeton University Press, 249-60.

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*, 430-476.