

seanda



Contents

seanda

PAGE

- 02 Project Updates
- 08 New Routes to the Past
- 09 Iron Age Patterns: Silent Sites
- 10 The Hidden Archaeological Landscapes Of The M3
- 12 Shades of Grey
- 16 Life and Death in Ardsallagh
- 19 The Many Lives Of Castlefarm
- 25 NRA Expands its Archaeological Team
- 26 Strange Creatures and Mixed Messages...
- 28 4,500 Years In 41 Kilometres
- 30 A Glimpse of Prehistoric Life in Coolfin
- 31 Settlement Patterns: Cuffsborough 4
- 32 Parknahown 5
- 33 A Tale Of Two Cemeteries
- 36 Q & A
- 38 Boiled Bull and Burnt Mounds
- 44 A Bronze Age Enigma
- 46 Wretched Beyond Description
- 51 A School Tour with a Difference
- 52 Following the Golden Road
- 54 Prehistoric settlement on the M8
- 58 *Megaloceros giganteus* on the loose
- 60 Ballyhanna Research Project
- 63 The Ballyhanna Research Project at Queen's University, Belfast
- 64 Multi-element Analysis of Human Bone
- 65 Amplification of Ancient DNA
- 66 Showcasing the Finds
- 67 From the Euphrates to the Suir
- 68 Who Are The Archaeologists In Your Neighbourhood?
- 70 The Ancient and the Modern
- 71 NRA Archaeological Publications
- 72 Glossary



22 In Living Memory

Lydia Cagney, an excavation director with Archaeological Consultancy Services Ltd, describes the history and archaeology of Philpotstown, Co. Meath, with historical contributions from Irial Glynn.



40 Archaeological Discoveries on the N2 Finglas–Ashbourne Road Scheme

Maria FitzGerald, project archaeologist with Meath County Council National Roads Design Office, provides an overview of the sites excavated on the N2 in counties Dublin and Meath.



48 Team Effort on the N8 Cashel–Mitchelstown

Margaret Gowen, director of Margaret Gowen & Co. Ltd, reports on the success of the first Early Contractor Involvement road scheme.

Production Team

EDITORIAL TEAM

Dáire O'Rourke
Michael Stanley
Rachel Pierce (copy-editor,
Verba Editing House)

PRODUCTION, LAYOUT, DESIGN
AND PRINTING
Brunswick Press Limited

ORIGINAL DESIGN CONCEPT
Begley Hutton Design
Consultants

PUBLISHERS
National Roads Authority
St Martin's House
Waterloo Road
Dublin 4

WEBSITE
Visit www.nra.ie/Archaeology/ to
view or download a PDF version
of this magazine and other NRA
archaeology publications.

© National Roads Authority

All rights reserved. No part of this
magazine may be reprinted or reproduced
or utilised in any electronic, mechanical
or other means, now known or hereafter
invented, including photocopying and
recording, or otherwise without either the
prior written consent of the publishers
or a licence permitting restricted copying
in Ireland issued by the Irish Copyright
Licensing Agency Ltd, The Writers'
Centre, 19 Parnell Square, Dublin 1.

Cover image: Osteoarchaeologist Róisín Mc-
Carthy analysing human skeletal remains
as part of the Ballyhanna Research Project.
(studiolab.ie)

Welcome to the First Edition Of *Seanda*

FRED BARRY, chief executive of the National Roads Authority



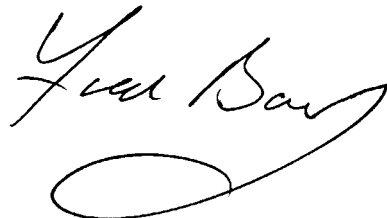
Fred Barry

I would like to extend a warm welcome to all readers of *Seanda*, the first issue of the National Road Authority's (NRA) annual archaeology magazine. The publication of this new popular archaeology magazine adds yet another important outlet to share the results of NRA-funded archaeological investigations, and also adds to the large amount of archaeological literature now available through the NRA Archaeology Section. This includes booklets, brochures, posters and books, most of which are freely available in both hard copy and digital formats. Some people might be surprised to learn that the NRA has published so much material about archaeology and may be even more surprised to learn that the NRA directly employs a team of archaeologists. These archaeologists, in co-operation with various archaeological consultancies, perform vital work in safeguarding our archaeological heritage while facilitating the delivery of the national roads-building programme, and belie the notion that development and archaeology are incompatible.

Archaeological techniques in relation to road construction changed radically with the employment of NRA-funded project archaeologists in 2001, after the launch of the *Code of Practice between the National Roads Authority and the Minister for Arts, Heritage, Gaeltacht and the Islands* in 2000. The NRA now has considered archaeological strategies, devised by archaeologists, which involve comprehensive archaeological input at the planning stage and assessment strategies, such as geophysics and test-trenching of known sites. More importantly, these strategies are also applied to detect previously unknown archaeological sites. It is now standard practice to carry out some level of archaeological assessment during the Environmental Impact Statement stage of a road scheme, and also to comprehensively test-trench the entire route, following An Bord Pleanála approval. Nowhere else in Europe is advance archaeological work for major public developments being carried out on such a scale. The purpose of the testing is to identify previously unknown archaeological sites and, if the road cannot be routed to avoid them, to allow ample time and resources to fully excavate these sites in advance of construction.

A key element of the work of the NRA archaeologists is also to ensure the quality and delivery of post-excavation analysis and to bring the results of archaeological investigations to a wider public through publications such as this. Of course, none of this would be possible without the contributions of the many skilled archaeologists, consultancies and academic institutions throughout Ireland. I would like to take this opportunity to thank all the contributors for participating in this important publication and helping communicate the exciting, often unique archaeological discoveries encountered on national road schemes.

I hope you enjoy reading *Seanda* and that its publication becomes a warmly anticipated event every year. The articles have been written with the general public firmly in mind and I hope you find it exciting, interesting and informative.



PROJECT UPDATES

Migrants, Mariners and Merchants

An exhibition on the archaeological discoveries made on the route of the N25 Waterford City Bypass was officially opened in the Waterford Museum of Treasures on 6 October 2006 by Mr Martin Cullen TD, Minister for Transport, and Dr Patrick F Wallace, Director of the National Museum of Ireland.

The temporary exhibition, which ran until 1 December 2006, told the story of 7,000 years of human history in the area around Waterford City and the way in which archaeologists have uncovered and revealed this evidence. The displays were designed to be accessible to as wide an audience as possible. Extensive use was made of photographs of excavations in progress and reconstructions of the excavated sites as they would have appeared in the past. Video footage of excavations in progress at some of the sites gave a good sense of the way in which the archaeologists went about their work.

In all, about 90 objects from the 105 excavations carried out were on display. They included pottery and stone tools used by the first farmers and found in the remains of houses identified in Granny and Newrath, Co. Kilkenny. A highly decorated Vase Urn was the centrepiece of the section focusing on life and death in the Bronze Age (see page 70). A scale model of a vertical watermill found at Killoteran, Co. Waterford, was specially commissioned for the exhibition. This vertical watermill is the earliest known example yet found in Ireland.

The exhibition placed the discovery of the internationally important Viking trading site at Woodstown in its local, national and international context. One of the objects on display was a fragment of a coin minted in the mid-eighth century in what is now Iraq (see page 67). The gravegoods—sword, spearhead, axehead, shield boss, knife, ring-pin and whetstone—buried with a warrior just outside the enclosure at Woodstown were specially conserved for the exhibition. This was the first time that a complete set of Viking weaponry and armour had been found in Ireland, and these objects formed a spectacular and memorable display.

There was a large crowd in attendance and they heard Dr Wallace pay tribute to the NRA for its co-ordination of the archaeological excavations along the bypass route and its sponsorship of the exhibition. Minister Cullen thanked the three archaeological companies who carried out the excavations on behalf of Waterford City Council and the NRA—Archaeological Consultancy Services Ltd, Archaeological Development Services Ltd and Headland Archaeology Ltd. The Minister reflected on the perception that there was a conflict between developing necessary infrastructure and preserving our archaeological heritage and pointed out that if it weren't for the work of archaeologists in advance of construction of projects like the N25 Waterford City Bypass, these discoveries would not be made:

'These discoveries are changing our knowledge of the history of our country in many ways and it's due to the investment of the public and private sector that is happening through the Waterford City Bypass and myriad of other developments around Ireland.'

James Eogan, project archaeologist, Tramore House Regional Design Office.



Fig. 1: Minister for Transport Martin Cullen and Eamonn McEneaney, curator of the Waterford Museum of Treasures, at the opening of the *Migrants, Mariners and Merchants* exhibition. (studiolab.ie)



Fig. 2: Minister Cullen launching the exhibition. (studiolab.ie)



When Did The Irish Become Christians?

Today, the island of Ireland is home to people of many different religions—and to some who have no religious beliefs at all—but only a generation ago almost every single person in Ireland belonged to the Christian faith. It was generally believed that this began in the mid-fifth century, when St Patrick came to Ireland and swiftly converted the whole island to Christianity in an energetic campaign of preaching and baptism. Recent archaeological discoveries indicate that things may have been more complex and diverse than previously believed, however, and that the conversion may have taken several generations to complete.

One particular piece of evidence for this suggestion is a burial practice that has only recently been recognised in the archaeological record. It seems that, in the early centuries of Christianity, not everyone was taken to a consecrated churchyard cemetery for burial when they died. In the period between about AD 450 and 700—the earliest years of Christianity—archaeologists are discovering that many people were buried with their extended families, or ‘kindred’, in settlement enclosures and not in churchyards.

Two of these ‘cemetery/settlements’ have been discovered on the route of the N6 Galway–Ballinasloe road scheme in County Galway, in the townlands of Treanbaun and Carrowkeel. They are both simple ditched enclosures with some evidence that they were inhabited sites (e.g. butchered animal bones and other food debris; discarded tools), but in addition to settlement evidence they both have buried human skeletal remains in one quadrant of the enclosure.

The skeletons show that the dead were laid out on their backs in grave pits, side-by-side, and with their heads to the west, just as all Christians are buried today. So it seems these people may have been Christians, too. But as they were not buried in a churchyard, one wonders whether they participated fully in the life of the Church, regularly attending masses for instance, or received the sort of general pastoral care from their clergy that would now be considered the norm.

The two cemetery/settlements on the N6 Galway–Ballinasloe road scheme were excavated for Galway County Council and the NRA by Headland Archaeology Ltd and Cultural Resource Development Services Ltd.

Jerry O’Sullivan, project archaeologist, Galway National Roads Design Office.



Fig. 1: Osteoarchaeologist Susan Lalonde examines human skeleton remains at Carrowkeel, Co. Galway. (Headland Archaeology Ltd)

Archaeological Finds On Mayo NRA Project

A total of 41 archaeological sites have been excavated on the N5 Charlestown Bypass in Mayo, and of these 38 were *fulachta fiadh* or burnt spreads. The remaining three sites were classified as enclosures. The *fulachta fiadh* had a variety of troughs of brushwood, split roundwoods, large split planks and stone construction, occasionally with outer linings of moss. Associated small finds included bone, stone tools and a decorated metal bead (possibly silver). One site also had associated structural evidence.

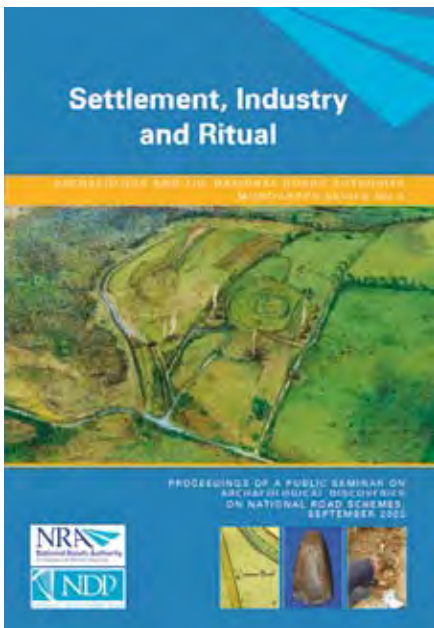
A previously known, levelled enclosure in Cloonaghboy townland proved to be a bivallate (double-ditched) ringfort with a souterrain. A second possible enclosure in Cashelduff townland produced two burnt pits and a collection of stone tools dating to the Neolithic period.

One newly identified multi-period site in Lowpark townland included Neolithic and Bronze Age pits with extensive pottery and collections of stone tools, burnt bone and charcoal. Medieval phases of activity included four distinct metalworking areas, three palisade trenches, a souterrain, a large, sunken, rectangular structure, a stone-lined, keyhole-shaped pit and several smaller features. Small finds included three copper-alloy ring-pins, jet bracelets, iron knives, a blue glass bead, large shaped stones and a small piece of fine gold filigree of possible seventh-century date.

Gerry Walsh, project archaeologist, Mayo County Council National Roads Design Office.

PROJECT UPDATES

Settlement, Industry and Ritual: The NRA Launches Third Monograph on Archaeological Discoveries



Settlement, industry and ritual, the third monograph to be published by the NRA Archaeology Section, was launched on 31 August 2006 by Dr Michael Ryan at the Chester Beatty Library, Dublin. This new book presents the proceedings of a one-day seminar held at the Gresham Hotel, Dublin, on 15 September 2005. The NRA archaeology seminars have become an important annual event, aimed specifically at bringing the results of archaeological work undertaken on national road schemes to a wider audience, as well as to the professional archaeological community. The proceedings of each seminar are subsequently published in the Archaeology and the National Roads Authority Monograph Series, in which they are presented in an accessible, jargon-free style, with numerous colour illustrations.

This third monograph deals with a variety of interesting archaeological sites uncovered during

the development of the national roads programme since 2001, in addition to offering overviews of the archaeology discovered on specific road schemes. The papers describe the discovery of previously undocumented sites and new site types, including the first Neolithic settlement identified in County Monaghan and an early medieval 'plectrum-shaped' enclosure in County Limerick. New archaeological sites identified in counties Dublin, Kilkenny, Laois, Louth, Mayo, Meath, Waterford and Westmeath are also featured. These discoveries, and others, demonstrate that in Ireland's past history there was greater social diversity and complexity than has been previously understood. The archaeological discoveries outlined in the monograph clearly reveal the potential of archaeological works connected with the road-building programme to alter our perception and understanding of past societies.

Settlement, industry and ritual (Archaeology and the National Roads Authority Monograph Series No. 3) and *Recent archaeological discoveries on national road schemes 2004* (Archaeology and the National Roads Authority Monograph Series No. 2), both edited by Jerry O'Sullivan and Michael Stanley, are available through bookshops, or directly from Wordwell Ltd, PO Box 69, Bray, Co. Wicklow (tel: 01 2765221; email: helen@wordwellbooks.com).

Michael Stanley, assistant archaeologist, NRA.

A Strange Discovery...

Excavation work on the N4 Longford–Drumsna (Dromod–Roosky Bypass) has turned up an extremely interesting object. The photograph below is of the unusual artefact, recovered from the base of a wooden trackway excavated in Ederloun, Co. Longford, during August 2006. It consists of a split timber, nearly 1.5 m in length, with six rectangular notches cut into one side at regular intervals. At the edge of each notch are two dowel holes, some with dowels (wooden pegs) still in their original positions. One end was broken prior to deposition, the other narrows slightly, forming a possible tenon that also contains two parallel dowels. Undoubtedly this is part of a larger, composite and intricate wooden object, however no parallels are currently known and archaeologists on the scheme are intrigued as to what this might be. What do you think?

Caitríona Moore, excavation director,
Cultural Resource Development
Services Ltd.





The NRA's Expanding Archaeological Discoveries Series

In 2005 the NRA produced 20 information brochures and three posters providing summary accounts of the archaeology discovered on various road schemes throughout the country. The brochures consist of eight-page, colour fold-outs and detail the results of archaeological investigations on specific road schemes. The posters and brochures are well illustrated with photographs and drawings and written with a general audience in mind.

In December 2006 the NRA launched two new posters and 11 new brochures relating to archaeological sites discovered in counties Carlow, Cork, Dublin, Kildare, Longford, Louth, Meath, Westmeath, Waterford, Wicklow and Wexford. An important addition to the series are updates to brochures produced in 2005 for the N2 Carrickmacross Bypass, N2 Finglas–Ashbourne road scheme, N15 Bundoran–Ballyshannon Bypass, N25 Waterford City Bypass, M8 Rathcormac/Fermoy Bypass, M3 Clonee–North of Kells motorway scheme and M7 Portlaoise–Castletown/M8 Portlaoise–Cullahill motorway scheme.

All of these brochures and posters can be obtained from the NRA, Archaeology Section, St Martin's House, Waterloo Road, Dublin 4, or by contacting the relevant local authority National Roads Design Office. Alternatively, electronic versions of the materials can be downloaded from the NRA website: www.nra.ie/Archaeology/LeafletandPosterSeries/.

Michael Stanley, assistant archaeologist, NRA.



National Roads Programme In County Cork 2001–5: Publication Of Archaeological Findings

Work is now well advanced on publishing the results of archaeological investigations carried out in advance of five recent national road schemes in County Cork. The publication will form part of the NRA's new series of monographs dealing exclusively with the archaeology discovered on specific road schemes and will feature the N25 Youghal Bypass, the N22 Ballincollig Bypass, the N8 Glanmire–Watergrasshill road scheme, the M8 Rathcormac/Fermoy Bypass and the N8/N73 Mitchelstown Relief Road.

This extensive body of work will detail approximately 180 sites at 111 site locations. The range of sites presented will span some 12,000 years and will include a diverse array of site types, including the discovery of Late Glacial Giant Irish Deer at Ballyoran (see page 58); a Mesolithic site at Curraghprevin; two Early Neolithic house sites at Barnagore and Gortore; a spectacular Middle Bronze Age settlement complex at Ballybrowney Lower; Bronze Age house sites at Mitchelstown and Killydonoghue; compelling evidence for a *fulacht fiadh* as sweathouse at Scartbarry; an Iron Age roundhouse at Ballinaspig More; a substantial early medieval settlement at Ballinacarriga and Curraheen; a moated settlement enclosure at Ballinvinny South; an undefended rural medieval settlement at Mondaniel; and a late 17th-century rural settlement at Ballinvinny South.

In all, the publication will cover the following periods (with individual site numbers given in brackets): post-Glacial (1); Mesolithic (1); Neolithic (12); Late Neolithic/Early Bronze Age (9); Bronze Age (86); Iron Age (17); early medieval (20); medieval (10); and post-medieval (26). The work will also catalogue approximately 210 individual radiocarbon dates, thousands of artefacts and a broad array of environmental evidence.

It is hoped that the publication will make a substantial contribution in terms of knowledge creation and will also provide a fresh injection of new data into the archaeological study of County Cork and south-west Munster. While aimed at a general readership, the publication will include an accompanying CD containing all original excavation and specialist reports, which should provide ample material for the archaeological profession. These are indeed exciting times!

Ken Hanley, project archaeologist, Cork County Council National Roads Design Office.

PROJECT UPDATES

Discoveries On The N6

While careful scrutiny of early maps, aerial photographs and historical sources means roads can be placed to avoid known monuments, it is inevitable that the moment a test investigation begins, fresh discoveries are made that cause us to re-evaluate the landscape around us. On part of the route of the new N6 Galway–Ballinasloe road scheme, between the townlands of Galboley and Newcastle, archaeological investigations by Cultural Resource Development Services (CRDS) Ltd have uncovered 13 new archaeological sites.

The now familiar *fulacht fiadh*, or burnt mound (mounds of heat-shattered stones and charcoal associated with the heating of water in troughs), accounts for five of these discoveries. In Killescragh two sites lie on the margins of a wetland area, while three sites occupy higher, drier ground in Caraun More. In Treanbaun and Rathglass, Bronze Age cremations cluster on areas of elevated ground. Treanbaun is further distinguished by the presence of an early medieval cemetery settlement, where an enclosure 70 m in diameter defines habitation space, burials and earlier prehistoric cremations. The combination of old and new burial practices is seen at Cross, where Christian burials are associated with earlier ring-barrows, which were pagan sites of burial. In Caraun More an enigmatic arrangement of stone-lined ditches may reflect the gathering and redistribution of local water resources, while in Gortnaheen 10th-century kilns and sunken stone structures suggest some form of industrial activity within a broader agricultural setting. Later medieval consolidation of wealth is reflected in a modified ringfort and castle site identified in Newcastle, where early 17th-century pottery finds are evidence of both national and international trade.

Finally, a strong degree of social organisation and control is reflected in a newly identified and probable Bronze Age hillfort in Rahally. Later, the hill on which the hillfort was constructed became a focus for repeated episodes of occupation, preserved today in the form of ringforts and early field systems. (These latter sites were known previously and lie outside the line of the new road.) Investigation of the sites described is ongoing and it is clear that the results will have a significant impact on our appreciation of past human activities in the north Galway region.

Nora Bermingham, senior archaeologist, CRDS Ltd.



Fig. 1: Ring-barrow and inhumations undergoing excavation in Cross, Co. Galway. (Galway County Council NRDO)

Startling New Information On Ancient Cashel

The Cashel Bypass post-excavation works continue to throw up surprises. Prehistoric pottery found throughout the 10 km route has now been examined by prehistoric pottery expert, Dr Eoin Grogan. For the first time Early Neolithic pottery types have been found in Cashel; for instance, the distinctive Carinated Bowl type, dating from 3950 to 3700 BC. This type of pottery was found on a number of settlement sites to the north-east of Cashel.

The majority of the remaining prehistoric pottery (59 vessels) is of Beaker type, so-called because of the distinctive beaker shape of the pots, which can be highly decorated. This was the time when metalworking first came to Ireland. The Cashel Beaker pots date to the early phase of the period in Ireland, dated 2400–2300 BC. Most of the pottery was found in association with cremation burials, but in Windmill townland, south of Cashel, Beaker pottery was found in association with a house-type structure.

We may now have to search the Cashel hills for early mining sites in the area—interesting times ahead!

Richard O'Brien, project archaeologist, Tramore House Regional Design Office.



Looking Forward: Forthcoming NRA Events Across The Country

NRA archaeologists will continue to give illustrated talks at schools, conferences and other public events across the country in 2006 and 2007. There is a very real and deep interest by local communities in NRA-funded excavations and several planned temporary exhibitions will present project results.

In December, Donegal County Museum is exhibiting discoveries made on the N15 Bundoran–Ballyshannon Bypass. The exhibition will run until early 2007 and focuses on an extensive medieval cemetery and church site on the River Erne at Ballyhanna (see pages 60–6). In spring/summer 2007, Monaghan County Museum will display a large, scaled model of a Neolithic house and a full-size recreation of an early medieval grave, both based on evidence from the N2 Carrickmacross Bypass. It will also examine the early medieval ringfort found at Lisnisk, Carrickmacross, and the role of this site in the 1641–7 Uprising. Results will also be presented from the N2 Monaghan Town Bypass and N2 Castleblayney Bypass.

Following a seminar entitled ‘Early Industry and Settlement’ held at the Mullingar Arts Centre on 11 November 2006, Westmeath County Council and the NRA hope to present an exhibition in late 2007–8. These events will focus on the changing archaeological landscapes around Lough Ennell, south of Mullingar, with particular emphasis on ancient routeways and the relationship between ecclesiastical and political powers. The information will be drawn from sites on the following schemes: N4 McNeads Bridge, M4 Kinnefad–Enfield–Kilcock, N6 Kinnefad–Kilbeggan, N6 Kilbeggan–Athlone, N52 Mullingar–Belvedere and N52 Mullingar Bypass.

At a national level, the NRA will host a fifth one-day seminar during Heritage Week, on Thursday, 30 August 2007, at a venue to be confirmed in Dublin. This seminar will continue the tradition of open, public presentations of new and exciting results from road projects across the whole country. It will also precede the formal launch of the NRA monograph on the proceedings of the NRA seminar held during Heritage Week 2006.

Niall Roycroft, project archaeologist, Meath County Council National Roads Design Office.

Diggers Find Shovel!

A number of archaeological sites in the Ballybar Lower area of County Carlow have been investigated recently by Headland Archaeology Ltd in advance of the construction of the N9/N10 Kilcullen–Powerstown road scheme. A possible medieval burnt mound, similar in appearance to a *fulacht fiadh*, has been unearthed at one of these sites. The burnt mound is associated with 11 possible troughs, some of which are connected by drainage channels.

An unusually large array of finds has been recovered from the site (burnt mounds are not typically artefact rich), including scraps of leather, a chert arrowhead, medieval pottery and a large amount of disarticulated animal bone. The pottery can be loosely dated to the 13th/14th century, possibly linking the site to a nearby moated settlement—a square/rectangular Anglo-Norman enclosed farmstead defined by a wide moat. The most interesting recovered artefact was a two-piece (blade and handle) wooden shovel, which is currently undergoing conservation.

The fragmented wooden shovel was uncovered during the excavation of a trough. Upon discovery, the object was immediately block-lifted (lifted in one piece) and taken to Headland’s office, where environmental specialist Susan Lyons carried out wood species identification; the main shovel blade was confirmed as alder. The shovel blade was some 170 mm in width, 260 mm in length and 27 mm in maximum thickness. The longest fragment of wood from the shovel handle measured 495 mm. Analysis has also revealed that the shaft was made from a different wood species, although this section of the find is extremely fragmented. A date for the shovel is yet to be confirmed.

Liam Hackett, excavation director, Headland Archaeology Ltd.

New Routes to the Past



by Michael Stanley

Michael Stanley, assistant archaeologist with the NRA, reports on the annual NRA archaeology seminar.

On 31 August 2006 the Archaeology Section of the National Roads Authority held its annual one-day seminar on archaeological discoveries on national road schemes, entitled 'New Routes to the Past'. The seminar took place at the Chester Beatty Library, Dublin, and was very well attended by the general public and archaeologists alike. These seminars are intended to communicate the results of NRA-funded archaeological works to the public in an informal, jargon-free and readily understood format. All of the speakers rose to the challenge and delivered informative and entertaining presentations.

John Channing (Valerie J Keeley Ltd) opened the morning session with 'Politics, wealth and expansion: the archaeology of Rochfort enclosure', which dealt with the excavation of an early medieval enclosure at Rochfort Demesne, Co. Westmeath, on the N52 Mullingar–Belvedere Road Realignment. Peter Bowen (Archaeological Development Services Ltd) and Laureen Buckley (consultant osteoarchaeologist) followed with 'Settlement and death on the A1/N1 Newry–Dundalk Link Road', outlining the results of the excavation of another early medieval enclosure at Faughart Lower, Co. Louth. This site was re-used as a burial ground and Laureen Buckley offered preliminary insights as to the health, lifestyle and deaths of the approximately 770 people laid to rest here. The first session of papers closed with Robert O'Hara's (Archaeological Consultancy Services Ltd) paper, 'Roestown revealed: an excavation on the M3 Clonee–North of Kells Motorway Scheme', which related a wealth of information regarding a multi-period complex encompassing small-scale prehistoric activity and a multi-phased, D-shaped enclosure with associated field systems of Early Christian origin. The erstwhile occupants were described as wealthy, conceivably royal and, possibly, related to the kings of the Southern Brega.

Sylvia Desmond (project archaeologist, Kildare County Council National Roads Design Office) continued proceedings with her overview, 'Ancient peoples, hidden landscapes: the archaeology of the M7/M8', of the 90 sites revealed in Laois on the M7 Portlaoise–Castletown/M8 Portlaoise–Cullahill motorway. Tara O'Neill (Archaeological Consultancy Services Ltd) dedicated a shorter presentation, 'The hidden past of Parknahown, Co. Laois', to one site in particular—an early medieval, double-ditched enclosure containing a cemetery and settlement evidence. Another scheme overview, entitled 'Secrets of a quiet landscape: archaeological investigations on the N6 Galway–Ballinasloe Road Scheme', was given by Galway County Council project archaeologist Jerry O'Sullivan. This paper outlined

how the scheme has illuminated aspects of landscape change, work, home, conflict and death in east Galway throughout its prehistory and early history. This was followed by a site-specific presentation by Gerry Mullins (CRDS Ltd), 'Pagans or Christians? Excavation of a hilltop burial enclosure at Cross, Co. Galway', which detailed two burial ring-ditches discovered on the N6 that may have been used by new Christians and old pagans alike.

Dr Stephen Carter (Headland Archaeology Ltd) opened the afternoon session with 'Environmental archaeology on the N25 Waterford City Bypass and the N7 Limerick Southern Ring Road (Phase 2)'. This paper provided a useful introduction to environmental archaeology for a general audience and illustrated its contribution to road schemes in studying landscape change (N25) and predicting areas of higher archaeological potential (N7). Brendon Wilkins (Headland Archaeology Ltd) presented the archaeological detail that formed the background to Dr Carter's N25 study. His paper, 'Time and tide: five millennia of environmental change and human activity on the banks of the Suir', detailed the physical difficulties of excavating sites, ranging from later Mesolithic flint scatters to medieval brushwood platforms, in an estuarine environment. Kate Taylor (TVAS Ireland Ltd) neatly concluded this series of papers with her contribution, 'The archaeology of the Limerick Southern Ring Road (Phase 2): a medieval enclosure at Coonagh West', which related the excavation of an early medieval enclosure on the former dryland/wetland boundary of the Shannon's northern bank. Jacinta Kiely (Eachtra Archaeological Projects) brought a novel close to the early afternoon session with 'The new face of Bronze Age pottery from the N8 Mitchelstown Relief Road', showcasing unique pottery forms, including a handled and footed cup decorated with a nose, eyes and ears.

The final session included another scheme overview, 'Prehistory and history on the N5 Charlestown Bypass', this time from Richard Gillespie (Mayo County Council), who outlined 42 newly discovered sites. Thaddeus Breen (Valerie J Keeley Ltd) provided the penultimate paper, 'Beside the rath: archaeological excavations at Raheenagurren West townland, Co. Wexford', detailing unexpected prehistoric sites adjacent to a ringfort on the N11 Gorey–Arklow Link Road. Paul Stevens (Valerie J Keeley Ltd) concluded a very successful and enjoyable day with his paper, 'Burial and ritual in late prehistory in north Wexford: excavation of a ring-ditch cemetery in Ask townland', which also related to excavations on the N11.

The NRA would like to express its appreciation to James Eogan (project archaeologist, Tramore House Regional Design Office) for chairing throughout the day and all the speakers and attendees for participating. The proceedings of this seminar will be published in autumn 2007 as part of the Archaeology and the National Roads Authority Monograph Series.



Fig. 1: Donaghmore ring-barrow under excavation.



Fig. 2: Carn More ring-barrows in the frost.

Iron Age Patterns: *Silent Sites*



by Niall Roycroft

Niall Roycroft, project archaeologist with Meath County Council National Roads Design Office, discusses newly identified Iron Age sites near Dundalk, Co. Louth.

An interesting Iron Age (600 BC–AD 400) pattern is emerging around Dundalk in County Louth. Archaeologists know that Dundalk must have been well populated during the Iron Age, but where are the sites to corroborate this? The answer appears to be that they are hiding on sites dating to other periods. Iron Age archaeology has now been

identified on five sites in the townlands of Balregan, Donaghmore, Carn More and Balriggeran, excavated by Irish Archaeological Consultancy Ltd on the route of the M1 Dundalk Western Bypass. All of these sites show considerable archaeological remains dating to other periods. It seems the Iron Age, with its characteristic lack of finds, was a silent element, waiting to be seen.

A Neolithic ceremonial enclosure, or henge, was discovered in Balregan townland, near the confluence of the Castletown and Kilcurry rivers, which lies north-west of Dundalk. This henge has been dated to 3400–2900 BC on the basis of over 1,000 sherds of associated pottery. Later Neolithic (2900–2200 BC) activity on this site is also indicated by the presence of Grooved Ware pottery (characterised by flat-bottomed, tub-shaped pots, some decorated with parallel grooved lines). Dotted around the outside of the henge were pits dating to 410–200 BC, some showing signs of metalworking. On the same site, overlooking the confluence of the rivers, was a mound 20 m across and set on a terrace cut. The base of the terrace had a cooking pit, some structural post-holes and spreads of burnt stone with charcoal, indicating ritual feasting, perhaps under a temporary shelter. This terrace activity and subsequent mound has been dated to the fifth/fourth century BC.

At Donaghmore, west of Dundalk, the main settlement dates to the Early Neolithic (4000–3500 BC) period, but an adjacent 5 m diameter ring-barrow, overlooking a dry valley, dates to 120–60 BC (Fig. 1). This ring-barrow appears to have had a revetment, or internal wall, made of

timber, which had been ceremonially burnt. Two, 4–5 m diameter ring-barrows (Fig. 2) of Iron Age type, with central cremations and apparently surrounded by drystone walls, were found at a Bronze Age (2400–600 BC) cemetery in Carn More townland, north of Dundalk. The main phase of activity here dates to 1900–1190 BC.

The main site in Balriggeran townland, north-west of Dundalk, was a vast series of early medieval (AD 400–1169) enclosures and structures covering a 2 ha area. On one side, however, was a well-preserved corn-drying kiln dating to AD 60–250 (Fig. 3). Nearby, on top of ‘Fort Hill’, stands what was originally thought to be a partially exposed building inside a medieval motte, but which has now returned a date of AD 250–430. The feature may actually be a drip gully, for drainage, and post-holes for a 7–8 m diameter roundhouse, which would have been sited in a highly visible location. A large quantity of butchered animal bone and evidence for hornworking was found in the gully. A north–south oriented human burial, lying face down, found adjacent to this building may be associated, but is awaiting independent dating.

Fig. 3: Late Iron Age corn-drying kiln at Balriggeran.



<p>INTERNATIONAL</p> <p>Timeline of important historical events</p>	<p>Construction of Stonehenge. Construction of the Pyramids.</p>	<p>Invention of the wheel. First Olympic Games are held. Birth of Buddha.</p>	<p>The birth of Christ. The rise of the Roman Empire.</p>	<p>The fall of the Roman Empire. The birth of Islam. Dark Ages in Europe.</p>
<p>Mesolithic c. 7000 – c. 4000 BC</p>	<p>Neolithic c. 4000 – c. 2200 BC</p>	<p>Bronze Age c. 2200 – c. 600 BC</p>	<p>Iron Age c. 600BC – c. 400 AD</p>	<p>Early Christian 400 – 790 AD</p>
<p>NATIONAL</p> <p>Hunter – gatherer – fishers. Mobile lifestyle. Mount Sandel, Co. Derry.</p> <p>PREHISTORIC</p>	<p>First farmers. Megalithic tombs e.g. passage tombs, portal tombs & court tombs. Bru na Boinne - Newgrange, Knowth and Dowth. First use of pottery. Communal burial.</p>	<p>First use of bronze tools & weapons, gold jewellery. Earthen barrows, stone cairns & flat cemeteries. Individual burial. Fulachta fiadh, Stone Circles, Cremation burials. Emergence of Kingships.</p>	<p>Large ceremonial sites. Use of iron for tools & weapons. Ring barrows. Contacts with Romanised world.</p>	<p>Introduction of Christianity. Improved agricultural practices & technologies. Construction of ringforts. Development of ecclesiastical sites.</p> <p>HISTORIC</p>

The Hidden Archaeological Landscapes Of The M3



Mary Deevy, project archaeologist with Meath County Council National Roads Design Office, provides an overview of new archaeological discoveries on the M3 in County Meath.

by Mary Deevy

Since autumn 2005 archaeologists have been busy excavating over 160 archaeological sites in advance of the works to build the M3 Clonee–North of Kells motorway in County Meath. These sites vary hugely in size, date, function and significance—from a single fire or refuse pit to large settlement complexes, from prehistoric to early modern in date and from the sacred to the profane. In the following articles on the M3 excavations, the interim results from a selection of these sites are described by the excavation directors from Archaeological Consultancy Services Ltd and by other researchers working on the scheme.

The combination of extensive pre-excitation investigation and large, open-area excavations uncovered more than the usual isolated Bronze Age sites in the form of burnt mounds, burials and houses, but more excitingly, and more significantly, they have also revealed aspects of prehistoric landscapes throughout the area of the scheme. A number of sites have both settlement and burial monuments in close proximity and it will be interesting to see if the dating shows that both activities took place simultaneously, or that the use of sites changed over time (that is, were settlement sites re-used as burial grounds or vice versa). One such site is Ardsallagh, just north of the River Boyne, excavated by Linda Clarke and discussed below by Clarke and researcher Neil Carlin. Preliminary analysis, of the pottery in particular, suggests use and re-use of the site over 2,000 years from 2000 BC onwards.

Arguably some of the most interesting sites on the scheme are the early medieval sites. In terms of size and finds, these are the ones that have dominated our attention during the excavations. Three sites in particular—Castlefarm, Roestown and Dowdstown—have produced striking archaeological evidence for high-status dwelling places of prosperous farming communities. Deep ditches and high



Photos: Mary Deevy

Fig. 1: Excavation Director Rob O’Hara, ACS Ltd, describing excavations at Roestown, Co. Meath, to visitors from the Meath Archaeological and Historical Society on a sunny open day.

<p>Reign of Charlemagne. Bayeux tapestry depicting the Battle of Hasting.</p>	<p>Spread of Black Death. Invention of the printing press. Christopher Columbus travels to America. The Reformation.</p>	<p>Spanish Armada. The Tudor Reign. Construction of the Taj Mahal.</p>	<p>Captain Cook travels to Australia. The Industrial Revolution. The French Revolution. The rise and fall of Napoleon.</p>
<p>Viking Age 790 – 1169 AD</p>	<p>Medieval late 12th century – early 16th century AD</p>	<p>Post-Medieval early 16th century – late 17th century AD</p>	<p>Industrial 18th century – 19th century AD</p>
<p>Viking raids. Development of High Crosses, Round Towers. Foundation of towns. Battle of Clontarf.</p>	<p>Anglo-Norman invasion. Development of stone castles and manors. Church reform.</p>	<p>Gaelic Wars. The Plantation of Ulster. Flight of the Earls. Battle of the Boyne.</p>	<p>Penal Laws. 1798 United Irishmen Rebellion. 1801 Act of Union. Industrialisation begins.</p>



Fig. 2: Open day at excavations on the M3.

banks would have enclosed each of these three sites, yet no surface remains were visible in advance of the M3 archaeological investigations. When you consider how such large-scale sites have disappeared completely from the visible landscape and local memory, these sites are a revelation.

John Nicholls and Dan Shiel of Target Archaeological Geophysics carried out additional geophysical survey at various sites across the scheme and they outline the results of some of their work to date. This has included very good results from sites at Castlefarm, Collierstown and Boyerstown, among others. The use of geophysical survey in advance of and during excavation has greatly enhanced our ability to understand the scale and nature of many sites before putting a spade in the ground.

While pottery and flint are typically the most common finds on site, it is the smaller, personal objects, those of bone and metal, that often tell us most about individual people in the past. One such artefact is a tiny, silver medieval ring brooch from Boyerstown, just outside Navan, which is illustrated and discussed below.

A growing area of interest in archaeology is the remains of post-medieval (early 16th century–late 17th century AD) and early modern sites, often surprisingly poorly understood from historical records alone. Lydia Cagney, with Irial Glynn, describes the results of her excavation of one such site—a 19th-century post office, house and smithy at Philpotstown—and illustrates how living memory helped complete the picture sketched from archaeological and historical research.

The M3 motorway project has enabled us to travel back into our past. By bringing a wide range

of scientific investigative techniques into use at the sites, archaeologists have uncovered evidence for how ordinary people lived, worked and died in the landscapes of County Meath, including around the Hill of Tara, the renowned archaeological complex of huge cultural significance.

Through the M3 investigations archaeologists have discovered evidence for prehistoric, early medieval and medieval settlements and burials, post-medieval houses, fields and roads and early modern buildings. All of this archaeological evidence has provided fascinating insights for scholars and for the public, and taken together will enable us to understand how this landscape developed over time. Further details of the ongoing work can be found on a dedicated website: www.m3motorway.ie



Fig. 3: Visitors examining artefacts on exhibition during Heritage Week open day on site.



In Brief GEOPHYSICAL SURVEY

Geophysical survey consists of a number of methods of exploring below the surface of the ground by measuring differences, or 'anomalies', in the magnetic, electrical and other properties of the earth capable of being detected by instruments. These anomalies can be caused by the presence of iron artefacts, kilns, ditches, stone walls or hard-packed floor surfaces.

Imagine a field planted with grass. Then imagine a working farm, with all its buildings, slurry, bonfire heaps and ditches. If you demolish the farm and bury whatever is left under soil, it can look very similar to the first field. But it is not. The demolished farm is now a buried archaeological site and geophysical survey can sometimes 'see' any surviving, hidden remains. Geophysical surveys generally detect differences using magnetic signals (magnetometry), or electrical signals (resistivity). In the grass field the topsoil simply sits over subsoil, giving uniform signals. Over the demolished farm the buried remains show as anomalies through high and low signals recorded on the detecting devices.

Readings are made in straight lines (transects) walked across the site. With magnetometry the instrument is held above ground, whereas resistivity involves four probes repeatedly stuck into the earth. Two probes project the resistivity signal and two receive it and, depending on what the signal passes through, it is increased or decreased. The transects are then all run together to create a plan of the anomalies. The challenge is to interpret these anomalies: is it a prehistoric ditch, or a modern drain? Experience can count for a lot, but all geophysical survey results should be confirmed through limited excavation.

Niall Roycroft, project archaeologist, Meath County Council National Roads Design Office.

Shades of Grey

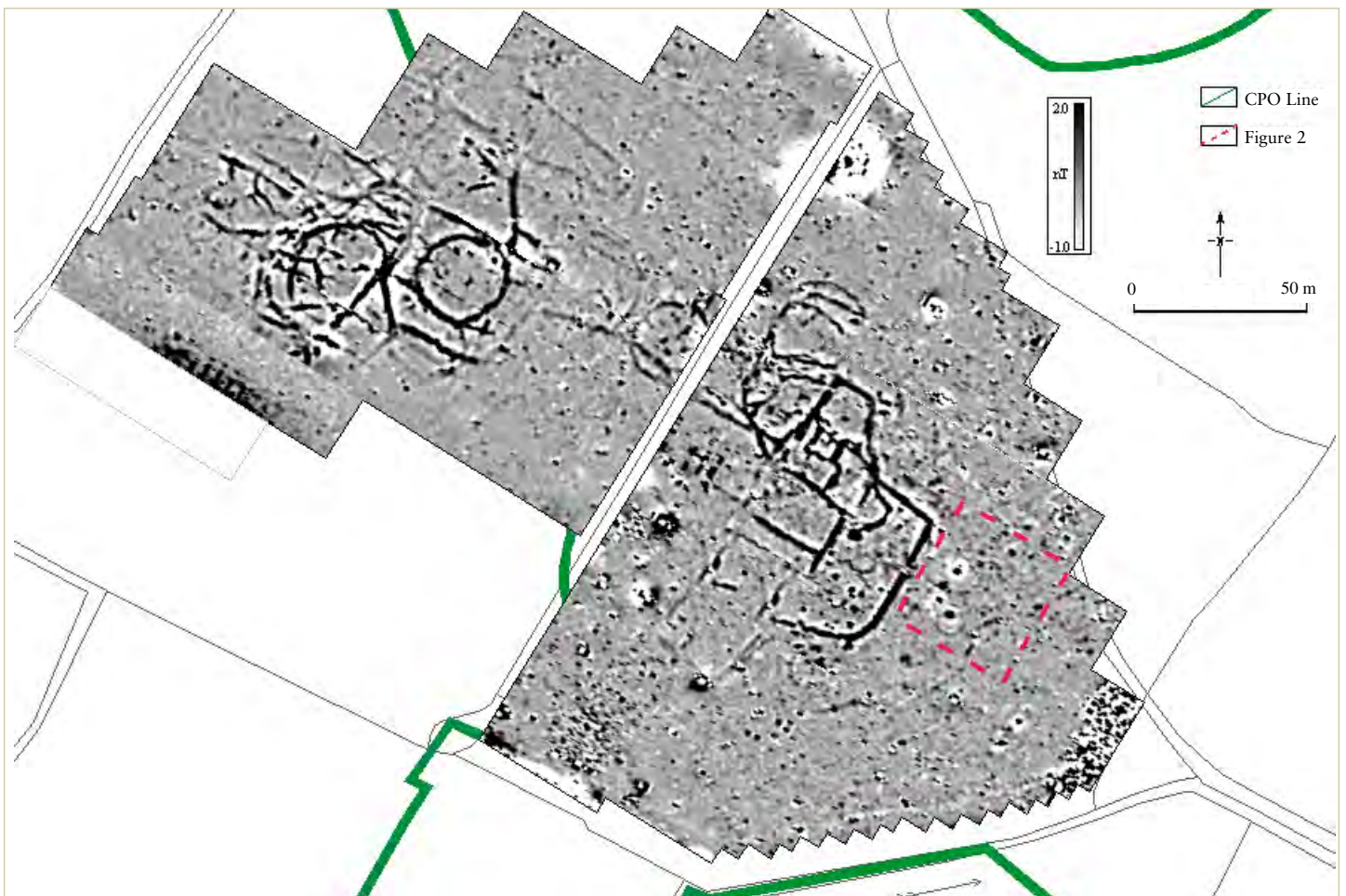
John Nicholls and Dan Shiel, archaeological geophysicists with Target Archaeological Geophysics, provide a brief summary of recent geophysical surveys along the route of the M3 motorway.

Introduction

As part of the ongoing archaeological works along the route of the M3 Clonee–North of Kells motorway scheme, the authors have thus far undertaken geophysical surveys at 11 sites identified during testing throughout the scheme. These surveys commenced in August 2005 and were commissioned by Archaeological Consultancy Services Ltd (ACS Ltd) and Irish Archaeological Consultancy Ltd. The purpose of the surveys was to provide accurate and reliable data that would confirm the location, form and extent of the archaeological remains that had been identified during test excavation. Here we will give a brief description of the results from the surveys at three of these sites: Boyerstown 3; Castlefarm 1; and Collierstown 1.

Boyerstown 3

Boyerstown 3 is located approximately 0.7 km to the east of the Athboy road, on the Navan Bypass section of the scheme. Following a sample geophysical survey of the area by Bartlett Clark Consultancy in 2002, testing carried out in 2004 by Neil Fairburn on behalf of ACS Ltd confirmed the presence of a large multi-period settlement. The site extended over an area measuring approximately 150 m by 250 m and included a large number of linear and curvilinear ditches with pits and post-holes in close proximity. The discovery of one flint artefact, animal bones, charcoal deposits and a quern-stone suggested possible prehistoric and early medieval origins for different parts of the site. However, the complexity of features revealed during testing suggested that a more complete understanding of the remains could be achieved only through detailed geophysical survey and full excavation.



Drawings: Target Archaeological Geophysics

Fig. 1: Boyerstown gradiometry greyscale (+2/-1 nT, black positive/white negative). Figure 2: 3D surface colourscale over suspected kiln sites outlined in red.

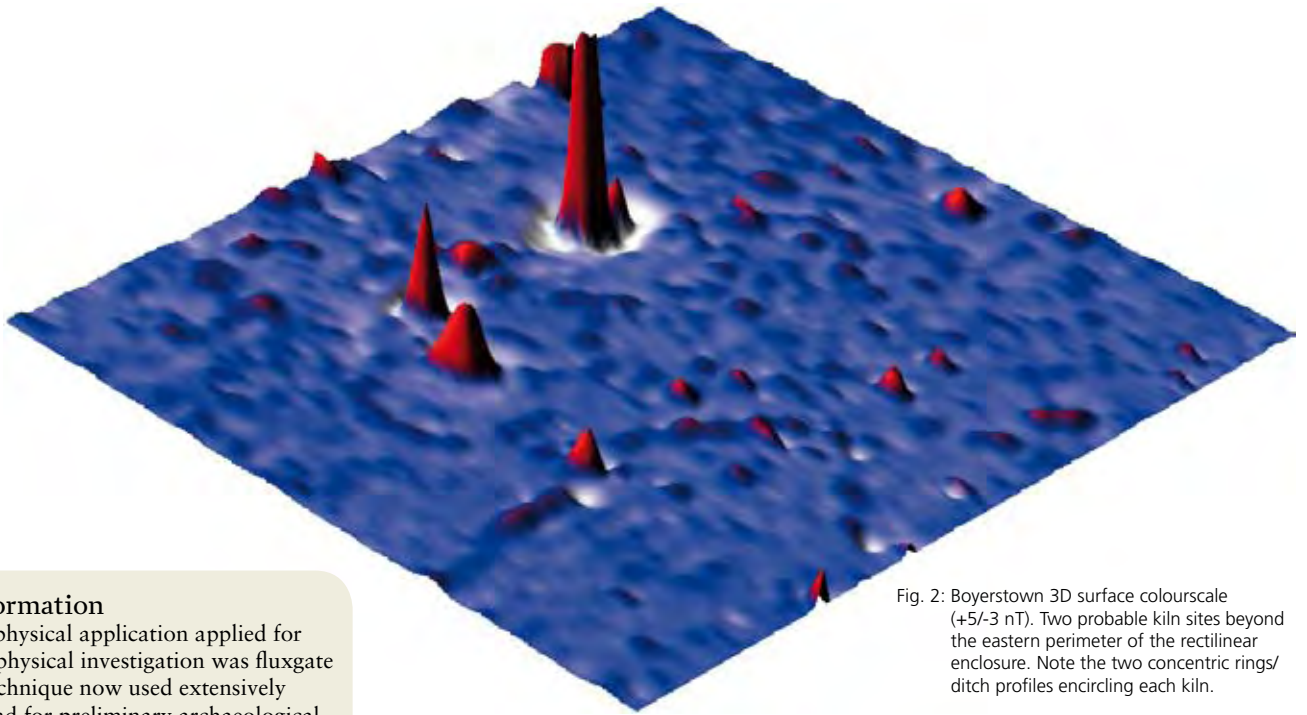


Fig. 2: Boyerstown 3D surface colourscale (+5/-3 nT). Two probable kiln sites beyond the eastern perimeter of the rectilinear enclosure. Note the two concentric rings/ditch profiles encircling each kiln.

Technical Information

The primary geophysical application applied for this phase of geophysical investigation was fluxgate gradiometry, a technique now used extensively throughout Ireland for preliminary archaeological investigation. The technique's application relies on its ability to detect subtle variations in magnetic response produced from burnt, fired and organically enriched deposits contained within buried archaeological features. Features typically detectable by gradiometry include enclosure remains, pit concentrations, hearths, furnaces, kilns, *fulachta fiadh* burnt mounds and large post-holes.

The surveys were undertaken using Bartington Grad601 dual sensor gradiometers, with 1 m vertical sensor separations, and employing a 0.25 m by 1 m sampling strategy. The investigation areas comprised a network of 20 m² grids, the corners of which were tied-in to the national grid using a differential Global Positioning System.

Survey data were processed for tilt correction around the mode at +/- 2. Here the data are presented as interpolated greyscale, colourscale and raw XY trace displays at +2/-1, +5/-3 and +/- 15 nano tesla (nT) respectively. Interpretations, although not presented here, were generated from XY trace and raw greyscale displays, highlighting anomalies of archaeological and potential archaeological interest, above background variation from natural, ferrous and agricultural sources.

Three days were spent surveying two adjacent fields, defining the extent of a very complex concentration of features. The survey extended over a total 4.5 ha.

Fig. 1 presents the data as two blocks of survey, either side of an existing field boundary, and shows the layout of a substantial archaeological complex measuring approximately 330 m by 225 m. The features highlighted include five circular enclosures, a sub-rectangular enclosure network, the remains of several outlying enclosures and part of a probable field system. The remains of post-hole structures, pits, hearths and other features were also identified. The locations of two probable kilns to the east of the rectangular enclosure network are presented in Fig. 2, and further evidence of industrial activity is suggested by discrete areas of ferrous response, i.e. evidence of iron-rich deposits, to the south.

The variety, extent and range of anomalies (differences in the Earth's magnetic, electrical and other properties) recorded at Boyerstown 3 are impressive and together they appear to support the multi-period interpretation from testing. Probable re-use, diversion and realignment of earlier enclosure boundaries are demonstrated over the western circular enclosure. A probable burnt mound, or *fulacht fiadh* site, is also evident at the southern survey edge. The general tendency for many of the circular and sub-rectangular enclosures to overlap suggests changing patterns of settlement at the site over an extended period of time.

Castlefarm 1

Castlefarm 1 is situated at the south-western edge of Dunboyne, to the north of the R157 Maynooth road on the Clonee–Dunshaughlin section of the scheme. As in the case of Boyerstown 3, this site was detected initially by sample geophysical surveys undertaken by Bartlett Clark Consultancy. Testing subsequently carried out by Rob O'Hara of ACS Ltd revealed that the geophysical anomalies reflected part of a complex of pits, ditches and other linear features extending over a distance of 100 m, all of which were thought to be of possible medieval date. An iron nail, traces of metalworking and a significant amount of animal bone and charcoal were recovered during testing. The remains of field drains and cultivation were identified throughout the test excavations.

The survey at Castlefarm 1 was carried out in three areas extending over 2 ha (Fig. 3). The results from Area 1 are dominated by disturbance from test excavation and a broad scatter of modern ferrous debris contained within the topsoil. Several faint geophysical anomalies were recorded from survey in this area, as well as a possible fragment of one of the excavated ditches to the east. The results from Area 2, outside the landtake for the road, revealed the eastern extension of a large, possibly oval-shaped enclosure, measuring 70–80 m in diameter. The outline of the enclosure ditch appeared fragmented, but this is likely to reflect disturbance from recent cultivation and probable field boundary removal. This disturbance has made it difficult to isolate features of potential interest at the enclosure interior. However, the greyscale presented as Fig. 3 indicates the remains of pits, possible post-hole structures and associated features.

Numerous linear geophysical features were also detected beyond the enclosure perimeter, and some of these are likely to reflect part of an associated field system. It is possible that some less distinct features within the geophysical data represents a spread of metalworking debris, evidence of which was revealed during testing at the site. However, the alignments of several former boundaries extending to the northern and southern survey edges suggest that a significant portion of these features are likely to be modern in origin.

Collierstown 1

Collierstown 1 is located east of Ross crossroads on the Dunshaughlin–Navan section of the scheme. The archaeology at this location was identified during testing by Linda Clarke of ACS Ltd in 2004, and is thought to reflect remains of a prehistoric or early medieval burial site, including three cist burials, nine pits, a linear feature and other features with inclusions of bone. Two small, upstanding mounds are also located at the site. Such features have previously been classified as burial mounds, although interpretation was tentative in view of the absence of any significant archaeological finds during testing of one of the mounds.

The geophysical survey at Collierstown 1 is ongoing and to date has been carried out in three sections (Areas 1–3), which together extend over an area measuring 360 m by 146 m. The data presented in Fig. 4 derive from two phases of gradiometer survey, the first within the landtake and the second, more recently, outside the landtake.

The phase 1 gradiometer survey revealed a number of enclosures surrounding the burials identified during testing. The remains are located at the western edge of the survey and are defined by two outer, adjoining, sub-circular enclosures measuring approximately 50 m across. At the interior of these features a sub-rectangular enclosure has also been recorded, measuring approximately 15 m in diameter, with one pit-type anomaly located at its centre. Cultivation remains are also evident. Based on the results from test excavation, it is likely that the geophysical feature recorded at the centre of the enclosure may be associated with burial remains, although such features are notoriously difficult to detect using most geophysical techniques. In the far right of Fig. 4 can be seen the remains of a circular enclosure, measuring approximately 20 m in diameter and flanked on its eastern and southern sides by outlying pit groupings and associated features (Figs 4 and 5). A possible *fulacht fiadh*/burnt mound site is located at the southern survey edge.

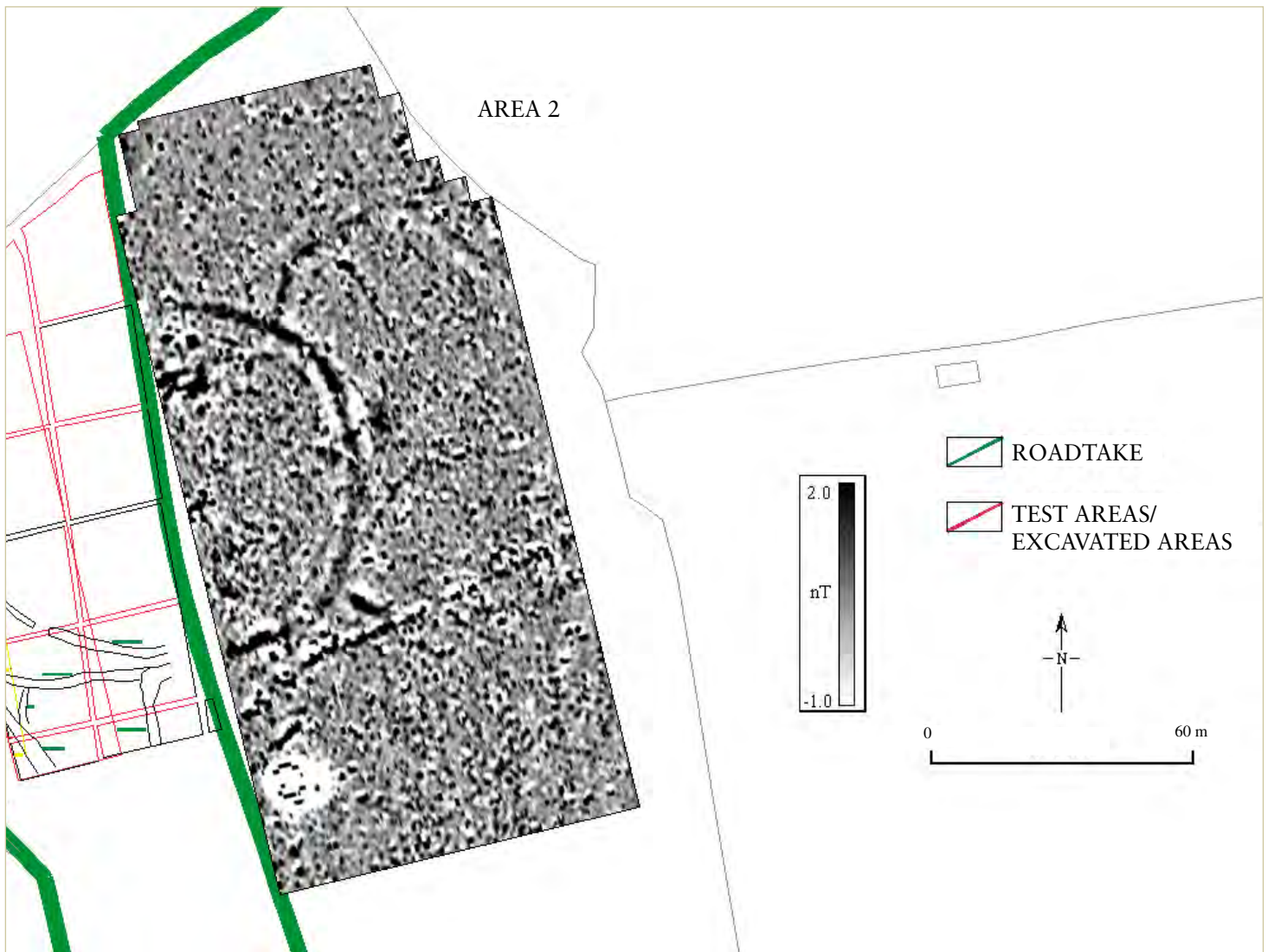


Fig. 3: Castlefarm gradiometry greyscale (+2/-1 nT, black positive/white negative), including outline detail of features revealed from excavation. Note the discrete response groupings possible pit-type features and post-hole structures within the first 20 m from the western edge of Area 2.

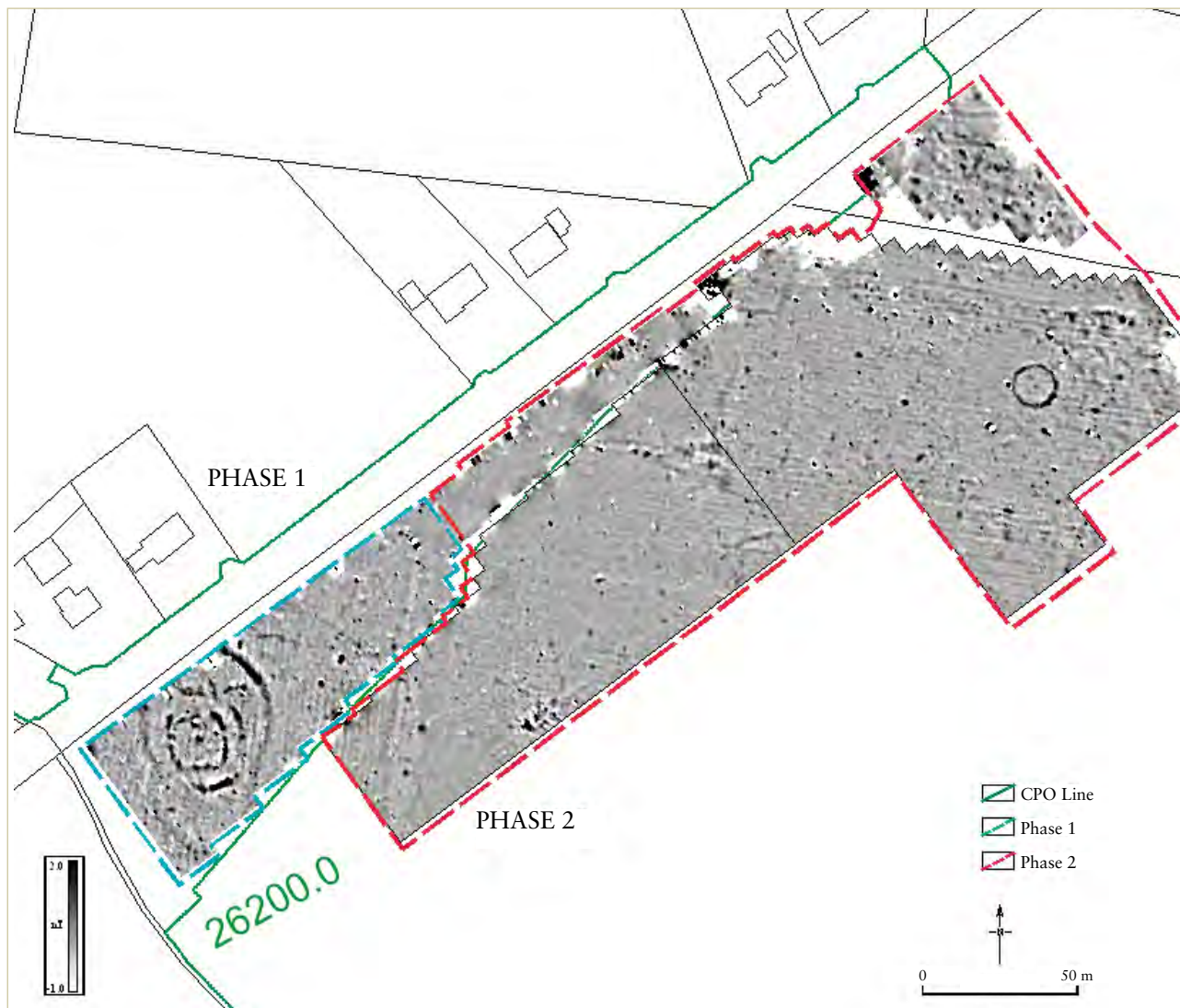


Fig. 4: Collierstown gradiometry greyscale (+2/-1 nT, black positive/white negative). The enclosure identified during testing extends from the top left of phase 1. The smaller enclosure detected in phase 2 is visible to the far right. Note the north-south extension of low-level responses through the centre of survey, and a suspected *fulacht fiadh* site at the bottom survey edge.

Throughout the results from the phase 1 and phase 2 surveys numerous ill-defined and discrete anomalies are visible. Part of a possible rectangular enclosure and a series of interconnecting linear and curvilinear anomalies extend approximately north-south through a section of the phase 2 survey. Many of these anomalies are at the limits of instrument detection, and some are classified as being of archaeological and possible archaeological potential on the interpretations provided with the final report from survey. However, the majority appear to conform to anomalies typically associated with more recent field boundary removal, former cultivation, natural soil variations and deeply buried modern ferrous material.

Conclusion

The geophysical surveys at Boyerstown 3, Castlefarm 1 and Collierstown 1 have been successful in answering the initial questions as to the nature, form and extent of remains at each site. The results from both testing and geophysical survey can now be subjected to further examination to assist the interpretation of the ongoing excavation results. A plan view of the principal underlying features within the cores of settlement has been provided and the complex relationships between features identified during testing can now be viewed as an intricate pattern of enclosures, with internal divisions and individual responses demarcating areas of suspected industrial, domestic and ritual activity.

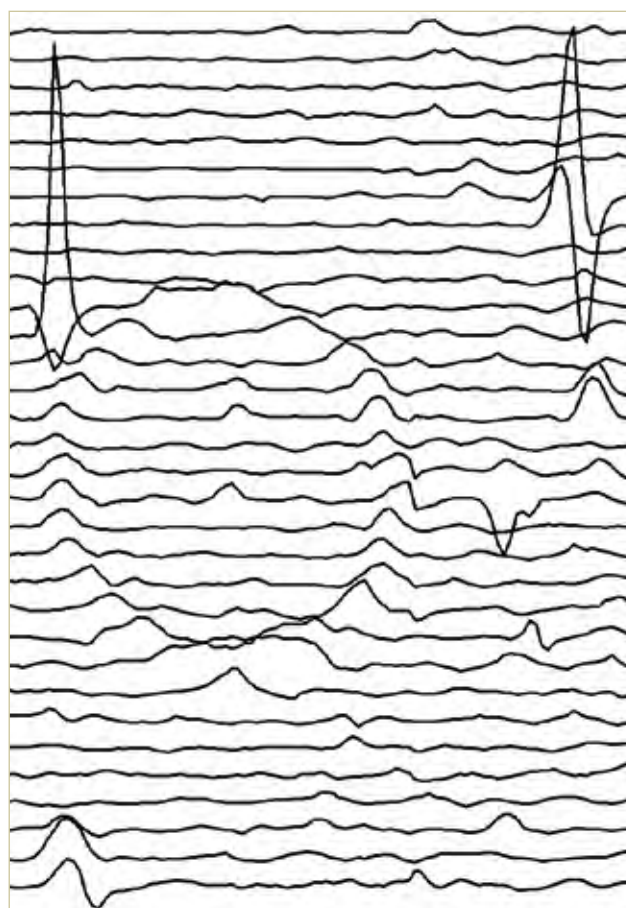


Fig. 5: Collierstown gradiometry-XY trace of smaller enclosure detected in phase 2 (15 nT/cm). Note the two ferrous/probable modern responses at above the enclosure ditch, and the location of a possible pit-type feature at the bottom of the image.

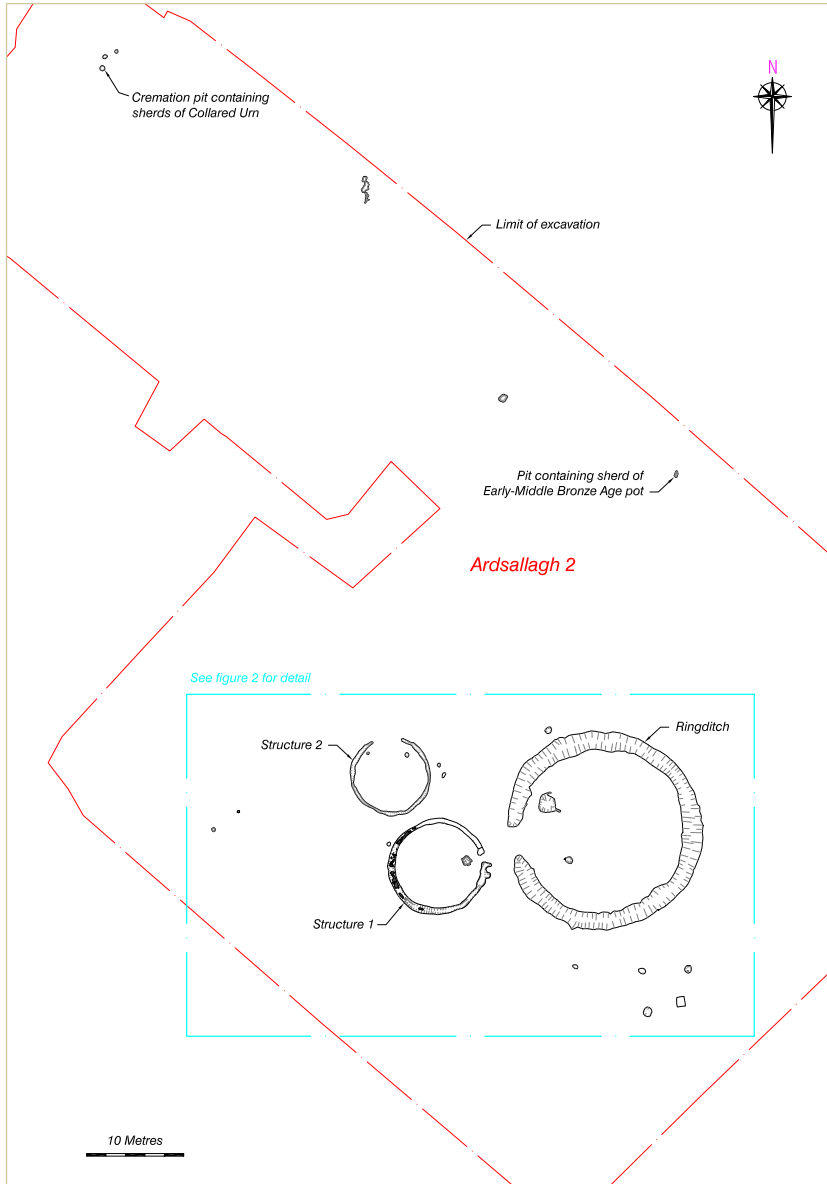
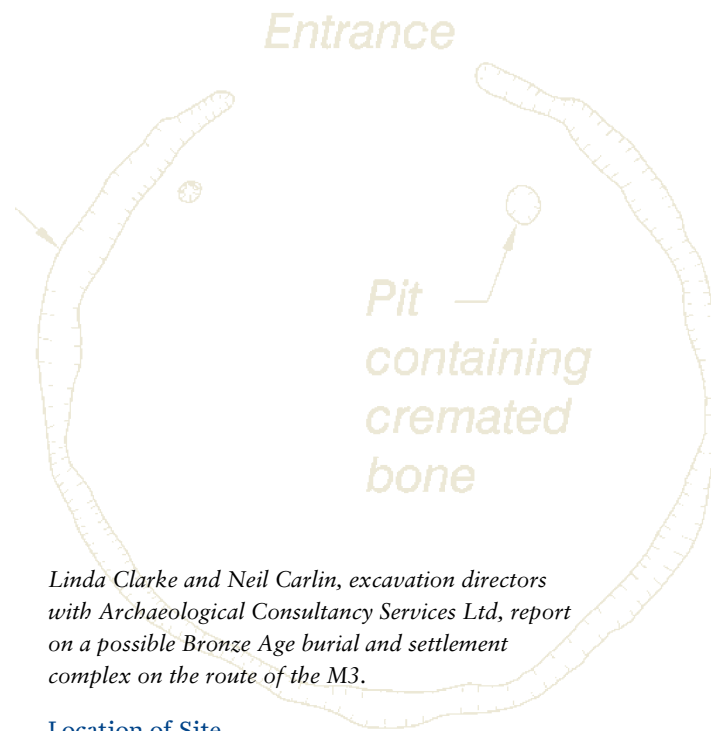


Fig. 1: Overall site plan of Ardsallagh 2. (ACS Ltd)

Life and Death in Ardsallagh



Linda Clarke and Neil Carlin, excavation directors with Archaeological Consultancy Services Ltd, report on a possible Bronze Age burial and settlement complex on the route of the M3.

Location of Site

A prehistoric site at Ardsallagh, Co. Meath, (designated as Ardsallagh 2) was located on a small rise, 51 m above sea-level, in gently undulating countryside overlooking the River Boyne. The Hill of Tara lies 4.5 km to the south-east and a recently discovered ring-ditch (Ardsallagh 1) was located on a more prominent rise (55 m high), approximately 718 m to the north-west of Ardsallagh 2.

Background to Discovery

Ardsallagh 2 was originally detected in spring 2004, by archaeologist Steve Linnane, during archaeological testing along the route. Test trenches were dug through the topsoil and these revealed a scatter of isolated pits, as well as the remains of a penannular feature (i.e. shaped like an incomplete ring), possibly a ring-ditch, which would have been used for ceremonial, funereal and/or ritual purposes. The next phase of work got underway in spring 2006 and entailed the excavation of these features and the surrounding area. This resulted in the positive identification of a large, circular ring-ditch and the discovery of two circular structures and isolated pits, some of which contained cremation burials (Fig. 1). Centuries of agricultural activity have removed the uppermost levels of this site and thus only the deepest layers have survived.

Excavation Findings

The ring-ditch was almost circular in shape, with an external diameter of 21 m, and was built on top of the natural rise that forms the highest point in the field. The entranceway was identified to the west in the form of a causeway of undug earth between the ends of the enclosing ditch (Fig. 2). Two phases of activity were identified within the ditch fill. It would appear that the ditch had been backfilled deliberately soon after its construction as part of the associated burial/ritual activity. At a later stage, the infilled ditch was partially re-dug to form a segmented enclosure

composed of three separate curvilinear gullies. This was made possible because the original ring-ditch would have been visible as a ringed depression caused by the compaction of the ditch fill over time. The only finds from the fill of the original ditch were animal teeth and a few pieces of flint debitage. A small iron rod and a flake from a broken, polished stone axehead were recovered from the fill of the re-cut section. One small concentration of cremated bone found above the earliest levels may represent a definite burial deposit. Tiny pieces of cremated bone were also scattered throughout this early layer. The damaged remains of two pits were found in the ring-ditch interior, but produced no finds.

The two circular structures (Structures 1 and 2) were located immediately outside the ring-ditch on the crest of a small rise. Structure 1 was to the west and its entrance was located directly opposite that of the ring-ditch. It would have been almost circular in shape, with a diameter of 10.6 m, and defined by a shallow, penannular slot-trench. Two shallow pits at the ends of the trench may represent the remains of post-pits. The remnants of timber planks were discovered within this trench to the west and south. There was a single internal feature—a cremation burial pit—but no finds were recovered from the structure. Structure 2 was located north-west of Structure 1 and was of similar shape and size. A single cremation pit was also located within this structure, but there were no associated finds.

In total, eight cremation pits were identified throughout this site. These features were not located in close proximity to one another or to the ring-ditch, with the exception of the two burials that were discovered within Structures 1 and 2. Two of the pit-cremations consisted of burnt bone contained within pots, identified by prehistoric pottery expert Dr Eoin Grogan as a Cordoned Urn—a Bronze Age pot with applied cordons or raised ribs decorating the outer face—and a Vase Urn—a Bronze Age pot consisting of small, hand-made, well-decorated vases. Both of these were deposited in an inverted position and only those parts of the pots that were lowermost in the ground survived. A sherd from a Food Vessel (a heavily decorated, biconical or bowl-shaped Bronze Age pot) was associated with the Vase Urn. These burials were located approximately 15 m south and 30 m north-west of the ring-ditch. Another pit contained the remains of a Collared Urn—a Bronze Age pot with a flat base, conical body and heavy overhanging rim or collar—that had been inverted over a cremation.

Other features included a number of isolated pits scattered throughout the site. Unburnt animal bone and tiny fragments of cremated bone were recovered from most of these pits, one of which contained a single sherd of Early/Middle Bronze Age pottery. A blue glass bead of probable early medieval date found during general site clearance was the only other artefact recovered.

Discussion and Interpretation

While ring-ditches are a typical Bronze Age site-type, they have their origins in the preceding Neolithic period. Evidence also indicates that they may have been constructed, used and re-used into the early medieval period. Ring-ditches can range in diameter from 3 m to 9 m. Many would originally have been encircled by an external bank, built of the upcast from the ditch, and some may have had a low internal mound. There was no evidence at Ardsallagh 2 for either feature, however; a situation paralleled at many other ring-ditches. This form of monument is likely to have fulfilled a funereal, ceremonial or ritual function. The lack of burial evidence directly associated with this ring-ditch may suggest that human bone was being used or manipulated in a complex manner, which was unlikely to be exclusively funereal. The placing of cremated bone in this ditch appears to have been deliberately selective. Evidence for this is provided by the lack of charcoal from the ring-ditch, which indicates that effort was made to separate bone from the funeral-pyre debris after the act of cremation. The small size of the fragments recovered may suggest they were ground down. Dr Grogan has suggested the possibility that these monuments may have served as memorials to the dead, but without the need to include large quantities of human remains.

The burial of cremated human remains in an inverted vessel within a pit was the dominant funerary rite towards the end of the Early Bronze Age. All four pottery types from Ardsallagh 2 date to that era and the established duration of use for each type is as follows: Food Vessels, 2100–1900 BC; Vase Urns, 2050–1750 BC; Collared Urns, 1950–1500 BC; and Cordoned Urns, 1750–1400 BC. Thus it is likely that the cremation cemetery at Ardsallagh developed over the course of the Early Bronze Age, that is between 2050 and 1700 BC. Early Bronze Age activity in this region is demonstrated by the re-use of the Mound of the Hostages passage tomb (on the Hill of Tara) as a cemetery from 2000 to 1600 BC, and by the discovery of Beaker pottery at another newly discovered site, Ardsallagh 4.

The presence of Early Bronze Age pottery in pits in the vicinity of the ring-ditch could suggest that it, too, dates to this period and that these cremation pits were deliberately located around it. It is possible that this layout is coincidental, but the proposed association is strengthened by the fact that the ring-ditch avoids earlier archaeology. The characteristics of the ring-ditch, however—in terms of size, entrance, finds, associated features and evidence for funereal activity—are more typical of the Middle to Late Bronze Age than of the Early Bronze Age. As a general rule, Early Bronze Age ring-ditches enclose a cist, or pit burial, and tend not to contain cremated bone within the enclosing ditch. It may be that it was possible to carefully position the ring-ditch

in relation to the earlier burials because the local community knew the history of activity in their area. It is also plausible that the other cremation pits outside the ring-ditch, those without artefacts, may represent a continued use of the cemetery into the Middle Bronze Age as this form of simple burial is more typical of that period.

The re-cutting of the ring-ditch represents a later use of the monument and the presence of the iron rod suggests that this activity is of Iron Age date. The digging of three long segments into the ditch may have been undertaken to re-define the ditch, but it is almost certain that this act of alteration was also an attempt to create a link between the past and the present. It is quite common to find evidence for the re-use of Bronze Age monuments in the Iron Age. Many of the monuments on the Hill of Tara testify to intense activity in south Meath at this time and also to the deliberate incorporation of pre-existing Bronze Age sites.

As mentioned above, another recently excavated ring-ditch in Ardsallagh townland may also date to the Bronze Age. This enclosure (Ardsallagh 1) has a similar western entrance, which might suggest a local tradition of constructing ring-ditches in this fashion. Small amounts of cremated bone were also present within the fills of this ditch and the site was re-used in the form of Late Iron Age/early medieval burials within the ring-ditch interior. A Late Bronze Age cremation burial was discovered in an urn just outside the ring-ditch, as were a number of cremation pits that lacked any associated grave-goods.

The discovery of burnt timber within the slot-trench of Structure 1 is reflected in its occurrence at a number of ring-ditches excavated throughout the country. This may suggest that Structure 1 represents the disturbed remains of a small ring-ditch, an interpretation that is supported by the presence of an internal cremation pit. Despite this, the narrowness of the slot-trench, the straight sides and the flat base are much more characteristic of

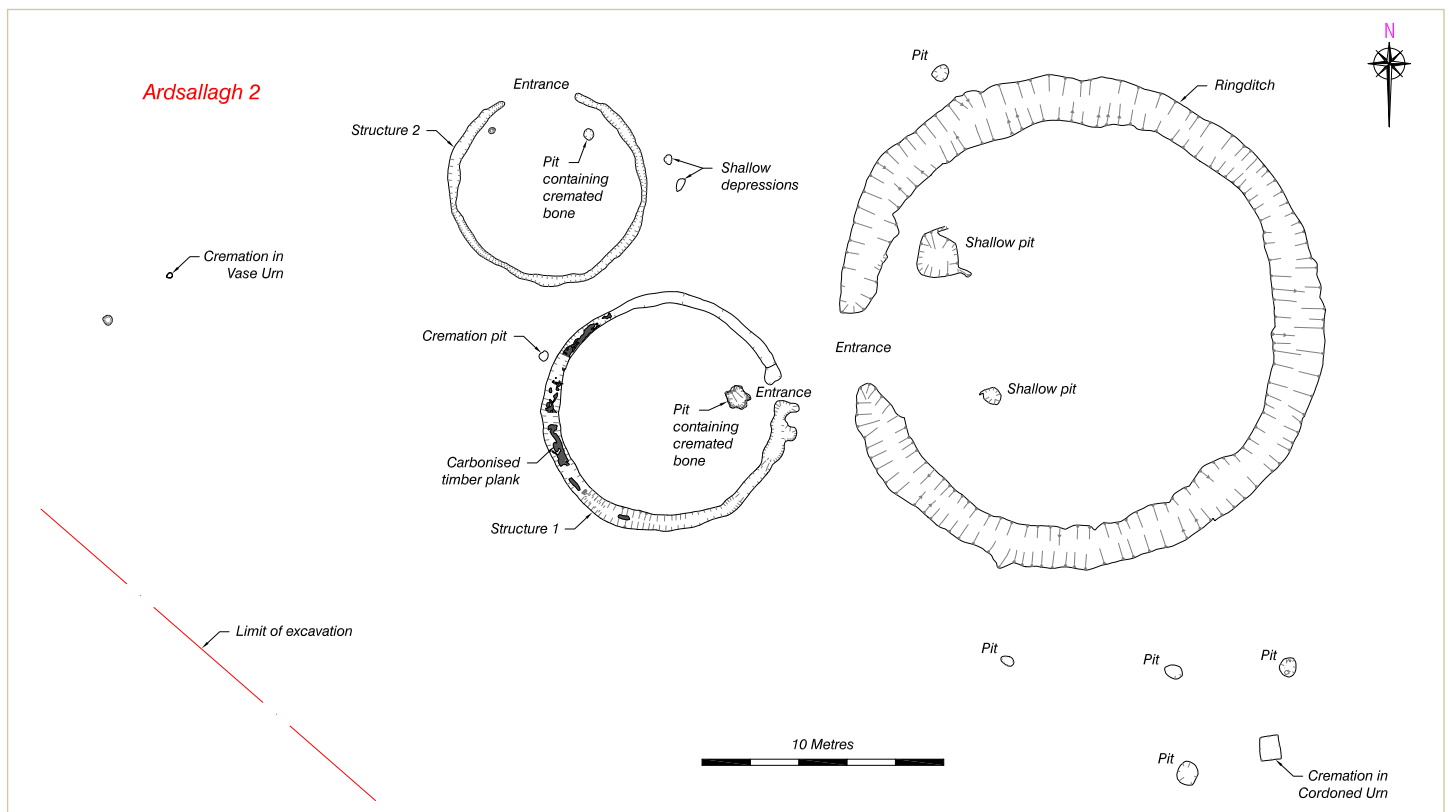


Fig. 2: Detailed plan of ring-ditch and Structures 1-2. (ACS Ltd)

the foundations of a roundhouse, and it seems more likely that the burnt timbers represent the remains of that superstructure. Similar buildings of smaller size have been excavated elsewhere in Ireland. All of these structures have been dated to the Late Bronze Age and it is probable that the Ardsallagh structures also date to this period. The absence of finds or a hearth and the presence of a northern and eastern entrance are common features. Both structures are located very close together, but each appears to physically respect the other and thus it is most likely that they were in use at the same time.

The occurrence of a cremation burial in a pit just inside the entrance to each structure is not unusual, although it does raise some significant possibilities. In the findings from the excavations of settlement sites from this period there is a very clear and close link between life and death. There is recurrent evidence for the placing of human bone in pits and post-holes of houses, and in cremation pits and ring-ditches in close proximity to domestic structures.

It has been noted previously that entranceways were of particular significance to people in the Bronze Age and were often emphasised by particular deposits. Dr Joanna Brück, School of Archaeology, University College Dublin, has suggested that these entrance deposits may have served to distinguish spatial boundaries, such as between the structure interior and the area outside, and would have lent meaning to the act of moving from one space into another. She has proposed that the lifecycle of a settlement was connected to the lifecycle of its occupants and their possessions. It may then be the case that the burials within the structures at Ardsallagh contain the remains of a previous occupant and represent a closing deposit

signifying the end of his/her life and dwelling. It is also possible that these cremation pits represent foundation deposits positioned deliberately within the houses to function in much the same way as modern-day relics.

Ring-ditches have been found in close proximity to other structures excavated in Ireland and Britain. At Ardsallagh it appears that the ring-ditch predates the structures. If this is the case, then it would seem that the people who used these structures gained social esteem and a sense of identity from being able to build and live in close proximity to an ancestral burial ground. The fact that the entrance of Structure 1 faces into the entrance of the ring-ditch may indicate that these people were very conscious of the preceding function of this location and of the symbolism of such an act. This could be viewed as a conscious attempt to create a continuous link between the living community and its ancestors. Dr Grogan has observed that the integration of domestic, funerary and ceremonial sites within a clearly defined cluster such as this suggests a close social structure, which confirms the importance of kin-groups at both a social and an economic level.

Taken altogether, the evidence from the Ardsallagh complex suggests that this continued to be seen as a suitably important place to be buried from 1900 BC until a possible date of c. AD 700. While such a location would have been desirable because of its physical geography, it is clear that much esteem would also have attached from its association with the visible ring-ditch cemetery on the northern and western sides of the Hill of Tara. The results of this excavation give us a tantalising glimpse into the complexity of the relationship between life and death, past and present and sacred and profane in prehistoric Ireland.

Post-excavation analysis is still at an early stage, but will greatly enhance our interpretation of this site once completed. The proposed chronological sequence of events will be confirmed by radiocarbon dating and the identification of the species of the unburnt animal bone and the cremated bone will reveal to us the types of activity carried out there. We look forward with great interest to unravelling the rest of Ardsallagh's fascinating story.

Fig. 3: Elevated view of ring-ditch and Structures 1-2. (ACS Ltd)



The Many Lives Of Castlefarm

Aidan O’Connell, an excavation director with Archaeological Consultancy Services Ltd (ACS Ltd), reports on prehistoric and medieval sites currently being excavated at Castlefarm, Co. Meath.

Introduction

Prehistoric activity and medieval enclosures have been located at Castlefarm, a short distance south-west of the County Meath town of Dunboyne, on the R157 Dunboyne–Maynooth road, along the proposed route of the M3 Dunboyne Link Road South. It was initially identified in a geophysical survey undertaken by Bartlett-Clark Consultancy in 2002. In 2004 a programme of centreline testing was undertaken by Robert O’Hara of ACS Ltd and this confirmed the existence of archaeological deposits in the form of numerous pits, spreads of burnt material and ditches of probable medieval date. A full archaeological excavation has been ongoing at the site since November 2005. To date, the archaeologists have uncovered a significant enclosure complex, dating to the early medieval and medieval periods, in addition to three isolated concentrations of prehistoric activity, which tells us much about how life was lived over the centuries at Castlefarm.

Neolithic (c. 4000–2400 BC)

The earliest activity at Castlefarm was located at the north-west of the excavated area, between two later enclosure ditches (Fig. 1). The evidence uncovered consists of a scatter of 27 stake-holes, six post-holes and two pits. A chisel-ended flint arrowhead, of a type known as *petit tranchet* derivative, was collected from the fill of one of the post-holes. This object can be dated to 3000–2500 BC. A polished stone axehead, also located nearby, is further evidence of Neolithic activity at the site. Excavation is ongoing in this area and it is anticipated that, when complete, it may be possible to discern the outline of a prehistoric structure from the pattern of post- and stake-holes.

Bronze Age (c. 2400–600 BC)

The second area of prehistoric activity is located at a distance of c. 40 m east of the post- and stake-holes and consists of three linear features whose function is not known. These linear features are roughly parallel to one another and aligned east–west, running perpendicular to the natural gradient at this area of the site. A bronze disc-headed pin was collected from the fill of the central feature. Disc-headed pins can be ascribed to the later Bronze Age in Ireland (c. 800–600 BC). Further work is required to determine the exact nature of the features.

Iron Age (c. 600 BC–AD 400)

The final area of prehistoric activity consists of a ring-ditch (c. 7 m in diameter) located at the east of the site. Some small fragments of burnt bone were collected from the fill of the ditch, suggesting a token cremation as opposed to a formal burial. There is no trace of an external bank or an internal mound. Had they been present originally, such features may have been ploughed away by recent agricultural activity.

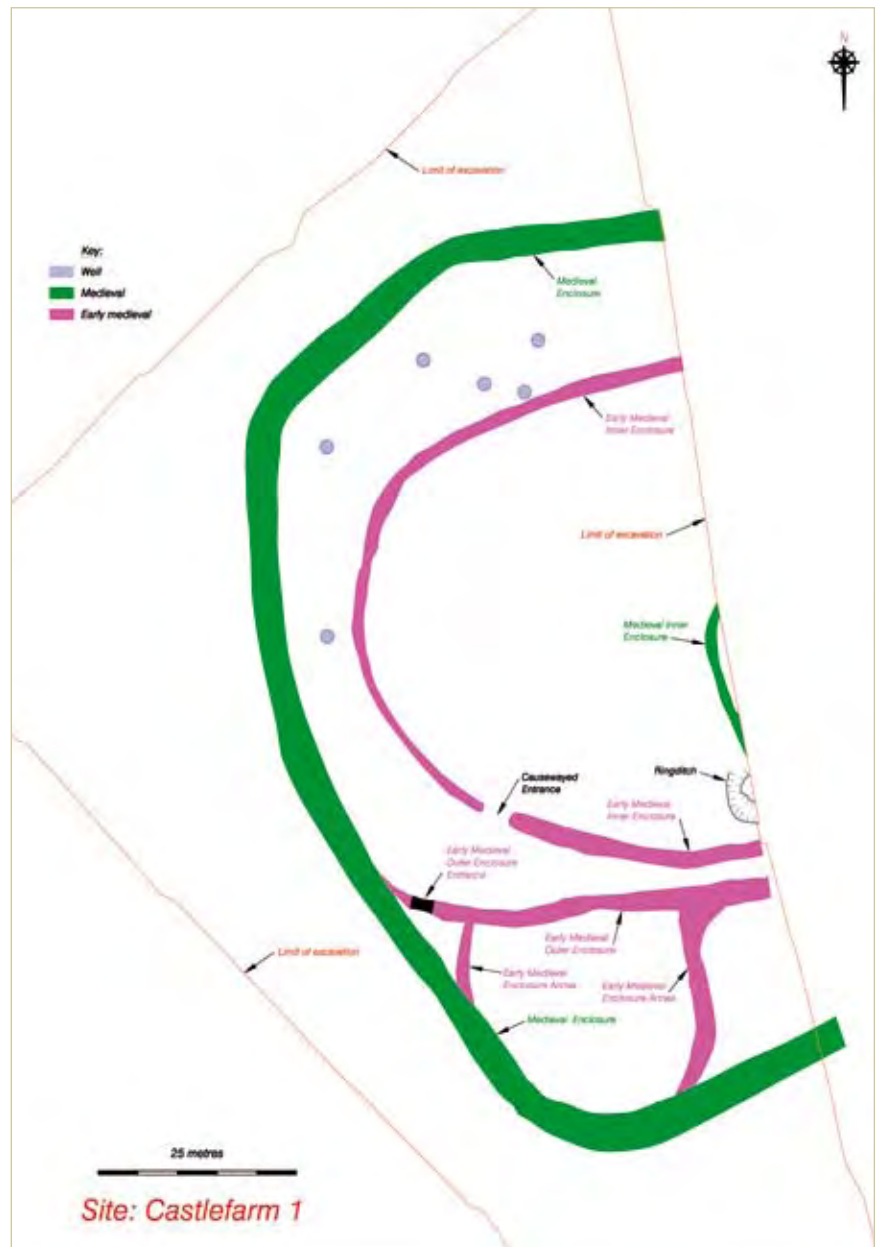


Fig. 1: Plan of Castlefarm, Co. Meath, mid-excavation. (ACS Ltd)

Early Medieval (AD 400–1169)

The site at Castlefarm occupies a low natural ridge that extends east–west across the proposed road corridor. The elevated area of this ridge was enclosed by a series of ditches, initially constructed in the early medieval period. The excavations have recorded three elements to this early medieval enclosure: an inner enclosure ditch; an outer enclosure ditch; and a southern enclosure annex (Fig. 1). The ditches were constructed by digging through the natural glacial deposit at the site, then the upcast material was banked on its internal side. As the site has been subjected to extensive ploughing in post-medieval and modern times, no trace of the defensive banks survives. In effect, what remains on site are the bases of the enclosure ditches.

Inner enclosure ditch

The inner enclosure ditch, which is 2 m wide and nearly 1.5 m deep, follows the brow of the elevated ridge. Roughly half of this ditch (c. 123 m along its circumference) lies within the proposed roadtake. It is a sub-circular feature with an entrance at the south-west. This is interesting because entrances to Irish earthwork enclosures of this period are usually aligned to the south-east.

To the west of the entrance the ditch was significantly narrower and shallower. This may be due to the fact that it was cut through a more compact, stony clay. The artefacts recovered were largely early medieval in date, but there is evidence that a section of the ditch was re-cut in the later medieval period.

Outer enclosure

An early medieval outer enclosure was also recorded and it is roughly concentric with the inner enclosure at the south end of the site. At the west and north of the site, its banks were cut away by later medieval activity. This ditch was c. 47 m long, over 2 m wide and 1 m deep. Numerous early medieval artefacts were recorded from the ditch. In addition, some rubbish pits were cut into the top of the outer enclosure. A possible entrance was recorded at the south-west, opposite the early medieval entrance. At this point the outer enclosure narrowed significantly and was filled by small- and medium-sized stones, creating an artificial causeway.

Enclosure annex

In the early medieval period an annex was added to the south of the enclosure. This measured approximately 30 m east–west by 20–25 m and was formed by two ditches that cut the outer enclosure ditch at the south and south-west. The finds from the enclosure annex were confined to the eastern ditch and, although not as rich as the main enclosure, it did produce a copper-alloy ring-pin and some bone pins.

Artefact assemblage

Many interesting finds have been recovered from the early medieval deposits on the site, including tanged iron blades, bone fibulae (brooches of safety-pin form), worked antler, glass beads, jet bracelets, spindle whorls and both complete and incomplete ringed pins.

Two main variations of ring-pin are represented at Castlefarm: spiral rings and plain rings (Figs 2 and 3). Both types are attached to looped pinheads in the majority of cases. Spiral rings resemble modern keyrings. The spiral, ringed, looped-headed pins from Castlefarm are predominantly made from copper-alloy materials (although one silver specimen was also recovered). This class of ring-pin has parallels at Early Christian ringfort and crannóg sites in Ireland and, according to the late Tom Fanning's classification, can be dated from the fourth to sixth centuries AD. The Castlefarm plain rings are mainly made of iron and can be paralleled with similar finds from both Early Christian and Viking contexts in Ireland (fifth to 11th centuries AD).



Fig. 2: Silver ring-pin. (ACS Ltd)



Fig. 3: Ring-pin. (ACS Ltd)

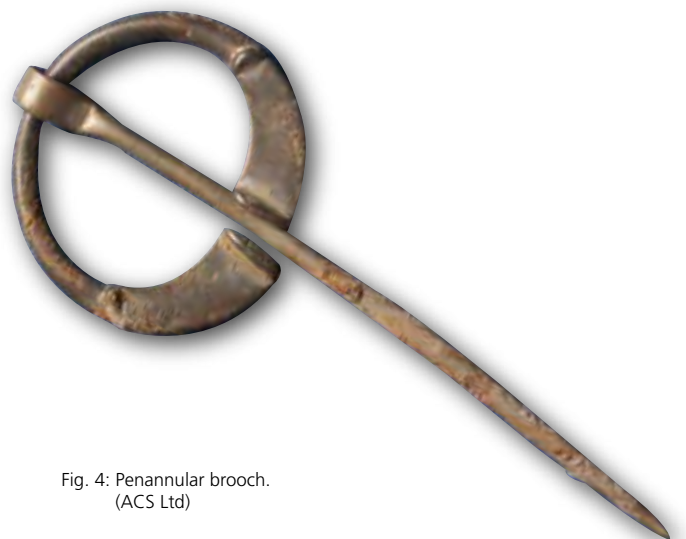


Fig. 4: Penannular brooch. (ACS Ltd)

In addition, a silver penannular brooch with traces of bronze gilt (Fig. 4) and a copper-alloy omega pin were found in an early medieval well. This kind of assemblage is common to high-status sites of the early medieval period.

The early medieval deposits also produced substantial quantities of animal bones, which suggests a prosperous pastoral economy. Taken in conjunction with the rich artefactual assemblage, a picture begins to emerge of a significant, high-status, secular settlement with a continuity of occupation throughout the early medieval period. Future specialist analysis of artefacts, faunal remains and environmental samples will provide more specific information on the dating, environment and economy of the site.

Medieval (Fifth–16th century AD)

Substantial medieval activity has also been recorded at the site. Dunboyne was an important manorial centre in the medieval period and contemporary records tell us it was the site of a timber and, later, a stone castle. A recent archaeological excavation by Claire Cotter—carried out on behalf of Cultural Resource Development Services Ltd in advance of the construction of the Dunboyne Castle Hotel and Spa—revealed the presence of a medieval ringwork with a stone gatehouse. The name of the townland (Castlefarm) may indicate that the site functioned as grange or out farm in medieval times.

During this period the outer enclosure was re-cut, widened and deepened at its north and west sides. This activity removed any traces of early medieval activity from the outer enclosure at this point. At the south of the site the line of the enclosure annex was cut away. This created an extension to the early medieval enclosure that appears (on the evidence of geophysical survey carried out by Target Archaeological Geophysics) to extend beyond the eastern site boundary and as far as the eastern field boundary. Three phases of activity were recorded in the medieval enclosure. Numerous sherds of medieval pottery, known as Dublin ware, a bone stick-pin and worked timbers were recovered from the earliest levels. The worked wood included a stave (Fig. 5) and a base disc from a wooden bucket. A decorated copper-alloy mount was recovered from the middle phase. The final phase contained a mix of early medieval, medieval and early modern artefacts, which suggests it was derived from modern agricultural practices. Excavation work is ongoing in this area.

An inner enclosure ditch was located towards the south-east of the medieval enclosure and north of the ring-ditch. It was a shallow, curving ditch containing numerous pottery sherds, fragments of iron pins and a fragment of a bone comb. Only the western side of this ditch was located within the proposed road corridor, however evidence from geophysical survey suggests that it may be 20 m in diameter.

The eastern annex ditch was also re-cut in the medieval period. The re-cut was shallower and wider than the primary ditch and contained numerous sherds of medieval pottery and some copper-alloy stick-pins. This may have constituted part of an internal sub-division within the medieval enclosure.

Eleven burials have been recorded at the site. Three of these are from the upper levels of various ditches and one is an infant burial that may be much later than the archaeological activity at the site. The remaining seven burials were recorded at the south-west of the site. All of these burials were supine (laid on their back) and orientated east–west, suggesting a Christian burial rite. In addition, the burial posture in some cases suggests they were buried in a shroud, but no associated bone or metal pins or other grave-goods have been recovered.

Significantly, two of the burials were recorded along the south-western entrance to the early medieval enclosure, between the inner and outer ditches. This suggests that these seven burials may date to the medieval phase of site occupation, although further specialist work will be needed to clarify this.

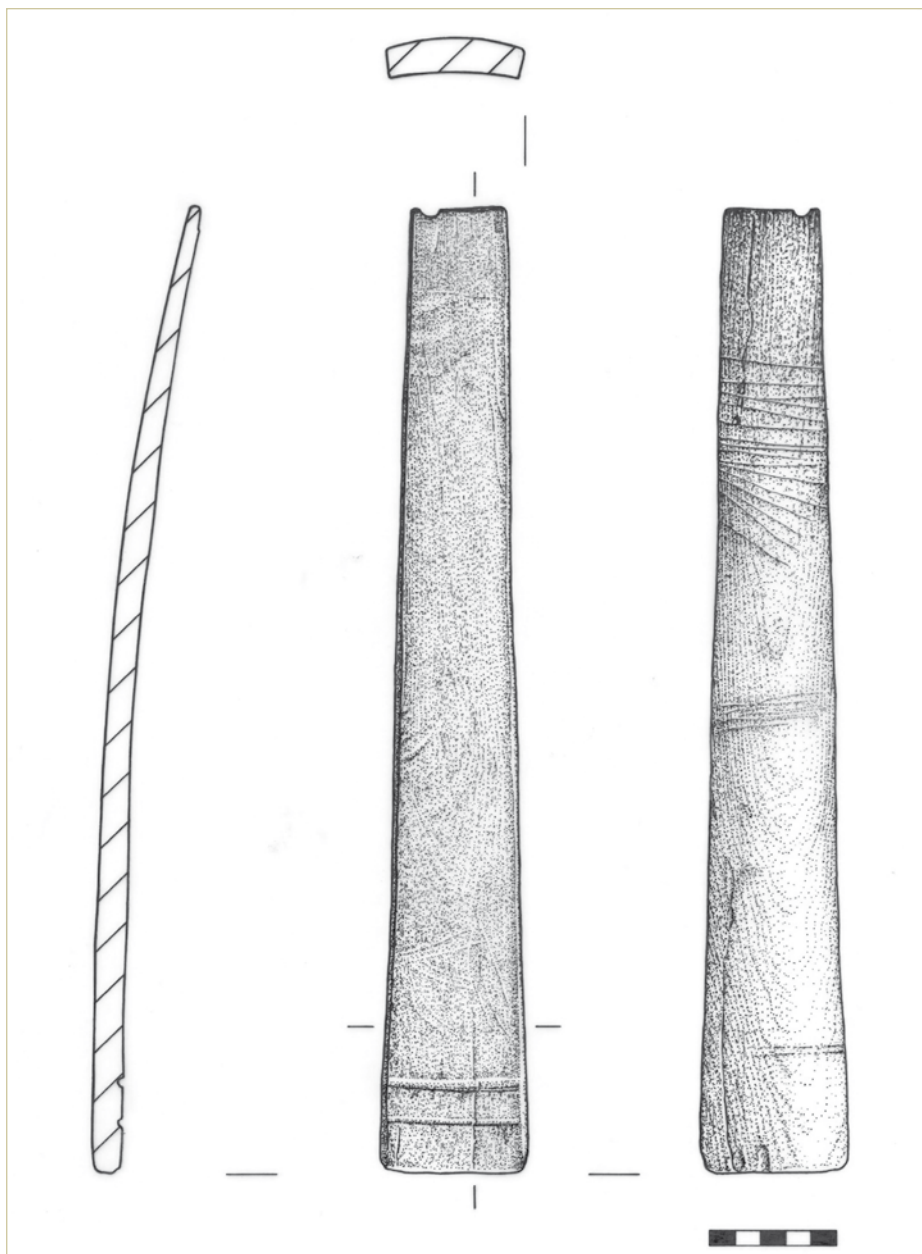


Fig. 5: Wooden vessel stave. (ACS Ltd)




In Living Memory



Fig. 1: Aerial view of building at Philipstown, Co. Meath, mid-excavation: smithy on left, dwelling in middle and post office on right. (studiolab.ie)



Fig. 2: Entrance to smithy. (studiolab.ie)



Lydia Cagney, an excavation director with Archaeological Consultancy Services Ltd, describes the history and archaeology of Philpotstown, Co. Meath, with historical contributions from Irial Glynn.

The remains of a 19th-century building used as a post office, house and smithy were archaeologically excavated in 2005 at Philpotstown, Co. Meath. The excavation provided an unusual opportunity to excavate and record an example of vernacular architecture, one that still survives in living memory. Analysis of historical records and anecdotal evidence from individuals who remembered the building during its use added an interesting and unique dimension to the picture drawn by the excavation.

The site is located south of Navan, on the existing N3 adjacent to Dillon's Bridge, below Garlow Cross. This townland is bounded to the east by the parishes of Templekeeran and Lismullen, to the south by Tara and to the west by the townland of Dowdstown. It was one of the areas identified during the archaeological testing programme carried out in 2004 in advance of the planned M3 Clonree–North of Kells motorway scheme. Some of the preliminary findings associated with this excavation are presented here, but a more comprehensive post-excavation analysis has yet to take place.

The building survived as rectangular foundations with a number of occupation or floor layers. It was aligned north-east–south–west, measured over 21 m on its longest axis and averaged 6.5 m wide. The ground level of the existing N3 exceeds the height of the site at present by over 1 m, but this was not always the case. Local man Brendan Farrelly confirmed that the road as we know it has been realigned and built up to its present height and that previously it was on a similar level to the building. Going further back, according to historian Peter O'Keeffe this was a turnpike road from 1727 to 1855 and was continuously developed, improved, realigned and widened over that period.

The building was sub-divided into three distinct areas, each serving a different function. The forge area was located at the south-eastern end of the building. The entrance to it was located at the gable end and delimited by a well-worn cobblestone threshold. According to local sources, there was an archway over the entrance through which the horses entered to be shod. The floor just inside the entrance was constructed of wooden planking, while the remainder of the building had a beaten clay floor. Excavation of a stone-walled and wood-lined pit cut into the clay floor yielded two leather straps (possibly representing part of a bridle), a large iron buckle, leather lace holders, a bead, a button, a button catch and a fragment of a metal ruler with graduation points incised into one side of it. Local man Tony Holten has suggested that this pit was a quenching trough, i.e. it was filled with water to cool the burning metal. The miscellaneous artefacts retrieved during the excavation of this area may represent by-products of its everyday use.

The dwelling area occupied the central section in the building and it shared an entrance from the front of the building with the post office. This entrance had a porch, now indicated by a large flagstone threshold, and a chimney, serving two fireplaces, separated the rooms.

At least two main phases of construction may be construed from the evidence uncovered. The rear wall was knocked, or possibly collapsed due to subsidence, and some time later was extended, after a new internal floor surface had been laid down. An extension to the north-eastern gable of the house, where the post office was located, was also visible after the removal of the beaten clay floor surface. This surface had sealed previous occupation layers and the associated/contemporary wall that denotes the position of the old gable wall. Although the original roof, according to local sources, was thatched, a scatter of roof tiles was concentrated around the forge; tiles were not present at any other location in the building. Mr Farrelly recalled that the roof of the main building was converted to accommodate extra living space.

Amendments and extensions to this building are echoed by changes to its shape between the first and second edition Ordnance Survey (OS) maps in 1836 and 1882, where the latter clearly annotates the presence of a post office. This is the only cartographic evidence of such a function for the building, and no documentary evidence could be located in either the Irish records or the British Postal Archives. However, excavation of this particular part of the building may testify to the function of this location, as all the coins retrieved during the excavation were focused around this area and were uncovered after the removal of the clay floor surface.

The ground surrounding the front and sides of the building was cobbled. Outside the smithy, between it and the road, a large broken millstone surrounded by a kerbing of smaller stones was uncovered. This is believed to have functioned as a 'wheel-former' for the forging of metal wheel bands. An additional outbuilding was located to the south-west of the main building. No surviving walls were evident, but a concrete floor surface sealed the internal footprint of this building and impeded any excavation of it at this time. Mr Farrelly recalled that this was a shed that housed a pony and trap.

Historical Sources

Philpotstown Post Office would have provided an important facility within its immediate environs in the latter part of the 19th century. Other significant buildings at the time included Dillon's Bridge National School, in use between 1860 and 1957, and a police barracks in the townland of Blundelstown. Two mills are also known from the area, one of which was described as a corn mill by William Hogg in 1850. Nineteenth-century scholar John O'Donovan recorded local legend that this was the first water mill in the country, commissioned by Cormac

Fig. 3 (background image): Entrance to post office and dwelling. (studiolab.ie)

Mac Airt in the fifth century AD to relieve his concubine from the labour of grinding corn with the quern. The other mill is believed to have stood at Dillon's Bridge, immediately north of the site at Philpotstown, and is depicted in the first and second edition OS maps.

Unfortunately for us, the surviving remains of the 1821 census for Meath do not contain a record of Philpotstown. However, we know from the Parliamentary Gazetteer of Ireland that Dowdstown parish had a population of 285 in 1831, 280 in 1841 and 53 houses. Peter Connell's study of the surviving 1821 census indicates that 'rural Meath was dominated by labourers, farmers and their servants and the domestic linen service'. This created little demand for skilled craftsmen, such as blacksmiths, of which there were only 36 from the remaining 1821 census evidence. We do not know for definite when the forge was first in use at Philpotstown, but perhaps, based on Connell's analysis, we can suggest it was later than 1821. Connell points out that the population of Navan grew by over 40% between 1821 and 1841. Surely there would have been much more need for skilled craftsmen at the time of this growth?

The earliest recorded occupant of the building was Thomas Gartland, who is known to have resided there with his family in 1855, the first year of the records (which are held at the Valuation Office). An insertion into the description of the property in 1860 records the word 'forge', while 'smith' is entered after the occupant's name. This property continued in use as a forge for a further two generations, the title of the property being transferred in 1894 to John Gartland, also a smith, who was married to Bridget. Both of their sons, Bernard and John, became blacksmiths; their daughter, Mary, is known to have run the post office after the death of their parents; John took over the family business. The forge was recorded as dilapidated in 1951 in the Valuation Office records.

The Past Remembered

The story thus far concludes with the authors and Mr Farrelly standing on the ruins of the old building as Mr Farrelly recounted tales of his childhood in the area. Some of his earliest memories included attending Dillon's Bridge School and playing mischievous tricks in the forge while 'Johnny' Gartland worked. His final memory of the blacksmith was when he served as an altar boy at his funeral mass. Mary Gartland appears to have been the last occupant of the house, although she shared it with a couple of newlyweds for a short time while they awaited the completion of their own house. By that time the post office had long gone out of use and the space it occupied was being used as an additional room in the house. Mary Gartland remained there until her death, which is presumed to have been some time around 1955—the year the house was sold to a Mr John McCormack. It was subsequently sold to John H Donnelly and Sons in 1963, but remained unoccupied until its final disintegration.

The authors are very grateful to the local people mentioned above who contributed their recollections. We would very much welcome any further information on this or similar sites and can be contacted via the scheme website (see below). Further information on the ongoing post-excavation work and on other sites being investigated on the scheme can be obtained at www.m3motorway.ie.



Fig. 4: One of two leather straps found during the excavation. (Clare Cowley)



Fig. 5: Extract from the second edition of the 6-inch Ordnance Survey map, showing the location of the post office.



Fig. 6: Farthing, 1860, with the figure of Britannia. (Clare Cowley)

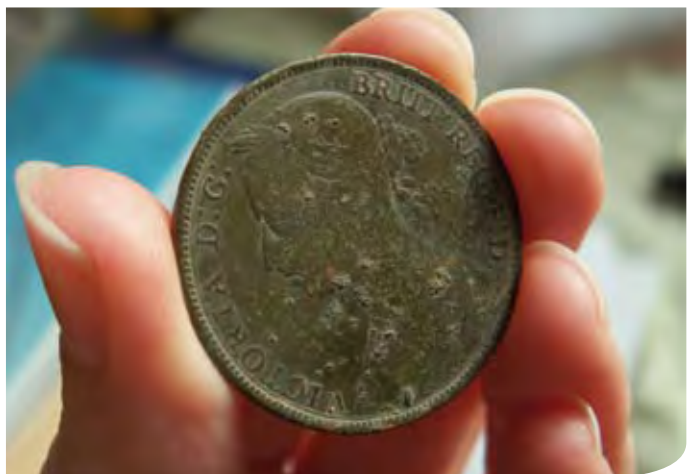


Fig. 7: Penny, 1884, with the head of Queen Victoria. (Clare Cowley)

NRA Expands Its Archaeological Team



Róisín Barton-Murray, archaeologist with the NRA, reports on recent developments within the Archaeology Section of the NRA.

In 2000 a Code of Practice was agreed between the Minister for Arts, Heritage, Gaeltacht and the Islands and the NRA. Since then three archaeologists have been employed directly by the NRA, while a further 14 project archaeologists and nine assistant archaeologists are employed by various local authorities

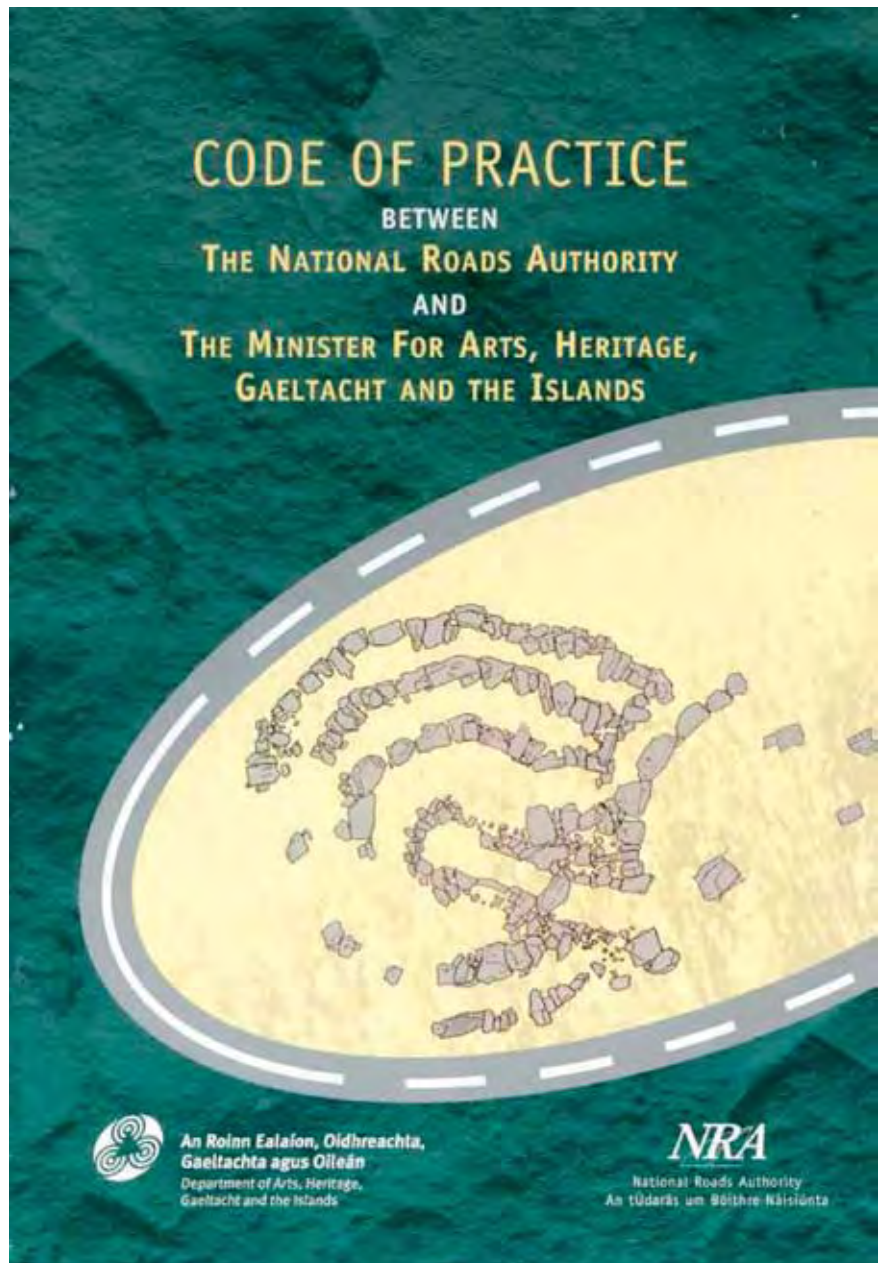
in the National Roads Design Offices (NRDOs). Although not employed directly by the NRA, their positions are fully financed by the NRA. Over the past five years the archaeologists working directly and indirectly for the NRA have overseen all the archaeological aspects of national road schemes and have helped to develop a coherent and consistent approach to archaeology and roads. This has provided an opportunity, in the general sense, to manage archaeological projects while developing a broad approach to archaeology and the mechanisms of archaeology, including research priorities and intellectual development, and culminating in the dissemination of information.

As many of the contracts for the various archaeologists were due to finish in 2006, the NRA approached the Department of Transport and the Department of Finance to discuss making many of the archaeological positions permanent within the NRA. Having seen the benefit of having archaeologists as part of the road design process the departments responded favourably, and as of January 2007 all of the archaeologists currently working for the local authorities in the various NRDOs will be employed directly by the NRA. The majority of the positions are permanent and also include a number of promotions to senior positions. A number of temporary, four-year assistant archaeologist positions were also sanctioned.

In their new roles working for the NRA the archaeologists will report directly to the head of corporate affairs and the senior archaeologist. They will still remain based in the various NRDOs and will continue to oversee the day-to-day management of all the archaeological aspects of the various road schemes, from pre-planning through to post-excavation and publication. They will ensure a

high-quality approach in meeting the NRA's obligations and, more importantly, will give a value-added dimension to the NRA's approach to archaeology.

The appointment of over 20 archaeologists directly to the NRA clearly shows the NRA's commitment to archaeology. Archaeologists are firmly established members of the road design team and are in place from the earliest stages of road design, through to the final stages when the road is constructed and the archaeology uncovered as part of that process is communicated to the wider public. The new permanent positions show that archaeologists in the NRA are here to stay!



Strange Creatures AND MIXED MESSAGES...

Mary Deevy, project archaeologist with Meath County Council National Roads Design Office, describes a 13th-century ring brooch from a medieval house excavated at Boyerstown, on the route of the M3.



Fig. 1:
Inscription on the front of the
Boyerstown brooch.
(ACS Ltd)

Strange writing and stranger creatures inhabit a beautiful silver object found recently at Boyerstown, west of Navan, Co. Meath. The object is a medieval ring brooch dating to about the 13th century. Ring brooches, which were used to fasten clothing, were worn by both men and women throughout medieval Europe. They were worn by people at all levels in society and varied accordingly in the nature of the material from which they were made—ranging from precious metals and gems to cheap, relatively mass-produced copies in bronze or pewter. The brooch is typically tiny, just 30 mm in diameter, but close inspection reveals the nature of the markings on the front and back.

The inscription on the front of the brooch (Fig. 1) is in Latin: IESVS NAZARENVS REX I. This is a shortened version of the titulus, that is the inscription placed above the head of Jesus Christ at his crucifixion: IESVS NAZARENUS REX IVDAEORVM, which translates as ‘Jesus of Nazareth, King of the Jews’. In the Middle Ages such inscriptions were not simply a reflection of religious devotion but were also believed to have amuletic properties. The use of the titulus was believed to be a defence against violent death or sudden harm and was very common on jewellery, including ring brooches, across Europe. The same inscription, this time abbreviated to IHCNRI, appears on another ring brooch from Ireland, also from County Meath, found at Trim.

The strange creatures appear on the reverse of the brooch. There are four creatures, each in its own separate panel (Fig. 3). Two of the creatures, occupying opposite panels, appear to be naturalistic depictions of birds. While such images may be purely decorative, it is also possible that they are symbolic and relate to the message relayed by the inscription. The long feathers and beaks of the birds suggest they could be pelicans (Fig. 2), and both appear to have a mark on their breasts. In the Middle Ages pelicans were thought to be particularly attentive to their young, even to the point of providing their own blood when no other food was available. Like many sea birds, pelicans feed their young by regurgitating fish caught at sea, but the extension of this to blood apparently may have arisen because these birds were susceptible to a disease that left a red mark on the breast. To the medieval viewer, however, the pelican’s apparent sacrifice provided a symbolic link to the sacrifice of Christ on the cross. The use of this image in medieval art and literature is known as ‘pelican in piety’. Perhaps it is stretching the interpretation a little, but traces of red enamel that originally filled the recesses between the raised decoration on the brooch might lend a further hint in favour of this interpretation.

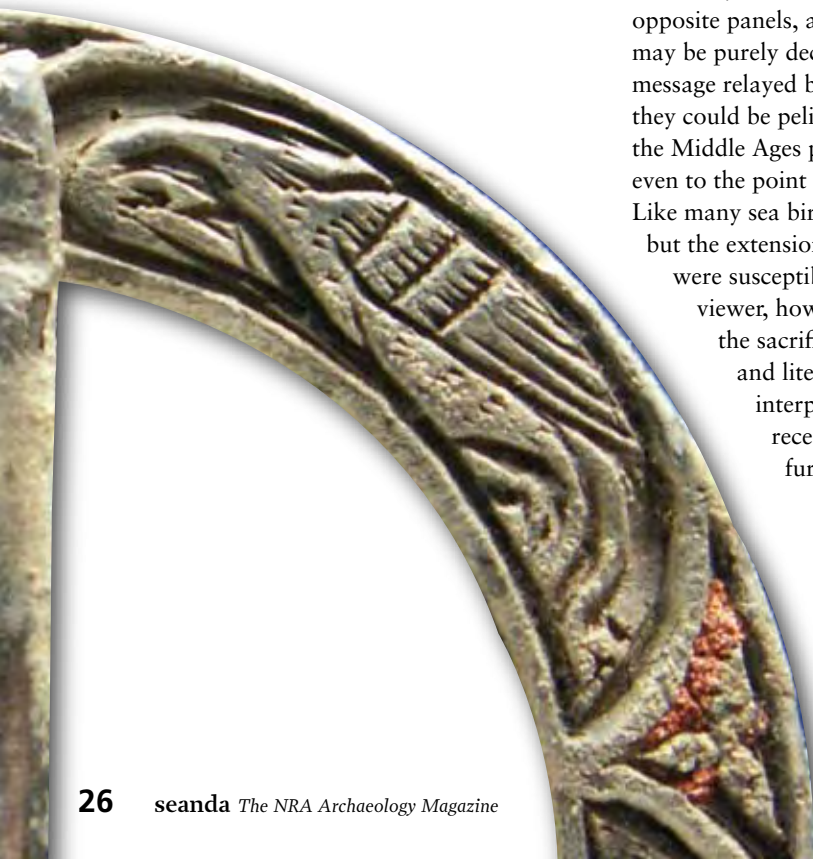


Fig. 2:
Detail of pelican and
red enamel on the
reverse of the brooch.
(ACS Ltd)

Fig. 3:
Strange creatures on
the reverse of the
brooch. (ACS Ltd)



At first glance the other two creatures appear birdlike, but markedly different in that they have stunted wings and a short tail—perhaps like juvenile birds, again apparently supporting the above interpretation. However, closer inspection reveals a shocking deformity. The ‘birds’ have human heads. One of the heads is clearly female, with medieval headdress and hairstyle—coiled hair tied up at the sides (Fig. 4). The head of the opposing figure is less clear. The hairstyle looks typically male—short with curled ends—but the face is difficult to discern.

Creatures with female heads and the bodies of birds were known as sirens and have their origins in classical mythology. They had beautiful singing voices that had an extraordinary power to seduce and this was how they lured unfortunate sailors onto rocks, where they would be shipwrecked and die. Sirens appear in Homer’s *Odyssey*, where Odysseus barely escapes their powers by plugging his ears with beeswax. A more common version of the siren is the mermaid with a female head and torso and the body and tail of a fish. Male sirens are a very unusual occurrence, but are not unknown in classical and medieval art. In the Middle Ages stories about sirens and mermaids became a vehicle for Christian religious and moral teachings: the siren was a symbol of temptation and deception, a warning to those who took delight in worldly pleasures, a path that would lead straight into the arms of the devil.

It is not immediately obvious how this symbolism fits with the religious or amuletic inscription on the front of the brooch. Unless, that is, it was a present from one lover to another, with a mixed message—on the one hand, calling on Christ to protect the wearer, on the other hand, a not-so-veiled warning to the wearer of the perils of infidelity.

The brooch was found during the early stages of excavation of a medieval house at Boyerstown, in advance of the M3 Clonee–North of Kells motorway scheme. Once the excavation has been completed, excavation director Kevin Martin, Archaeological Consultancy Services Ltd, will hopefully be able to speculate further on the life of the owner of this ambiguous brooch.

Fig. 4:
Detail of siren on
the reverse of the
brooch. (ACS Ltd)



Fig. 1: A ringfort, measuring approximately 30 m in diameter, excavated at Derrinsallagh, Co. Laois (ACS Ltd)



4,500 Years In 41 Kilometres: Scenes Beneath The M7/M8 Motorway Scheme



by Sylvia Desmond

Sylvia Desmond, project archaeologist with Kildare County Council National Roads Design Office, provides an overview of new archaeological discoveries on the M7/M8 in County Laois.

Since March 2005 archaeological testing and excavation have been taking place on the M7 Portlaoise–Castletown/M8 Portlaoise–Cullahill motorway scheme in County Laois. The scheme is over 41 km long, with 11 km of side roads, and extends from Portlaoise in the north-east to the towns of Cullahill and Castletown to the south and west. A large team of over 120 archaeologists from Archaeological Consultancy Services Ltd have been involved in the work. As a result of their efforts, 94 archaeological sites have been revealed, ranging in date from the prehistoric period through to the post-medieval (post-AD 1550) period, spanning a time frame of approximately 4,500 years.

The majority of the site types discovered on the scheme are *fulachta fiadh*, which generally date to the Bronze Age. These sites consist of one or more troughs associated with a low mound of heat-shattered stone and charcoal-stained soil. The troughs were frequently dug near water, or were dug deep enough to have access to groundwater. Stones would have been heated on a nearby hearth and then placed in the water-filled troughs to heat the water for a number of purposes, e.g. cooking, or leather preparation. The low mounds we can see result from the cleaning out of these troughs. An extensive testing strategy of the riverbanks revealed many of these sites.

A very fine example of a *fulacht fiadh* was located at Curragh, where the large size of the site—over 20 m in diameter—may indicate a considerable period of use. It is important, however, not to view these very common archaeological sites in isolation. In many cases these sites were located within a wider archaeological landscape and are associated with houses, pits and other features. Detailed palaeoenvironmental analysis and geophysical survey of these *fulachta fiadh* may give us a better insight into the role these somewhat enigmatic sites played in the lives of our ancestors.

There was little evidence found of activity during the Neolithic period, but the Bronze Age was well represented, in addition to the *fulachta fiadh*, by both ritual and secular sites. Funerary rites in the form of cremation pits were revealed at Derrinsallagh, Cuffsborough, Curragh and Tintore. A number of houses were also revealed scattered throughout the motorway scheme. The most notable is that at Cuffsborough, where the

houses may be associated with a large ritual structure. The large group of archaeological sites at Cuffsborough and at Coolfin (discussed elsewhere in this magazine) would appear to form archaeological landscapes dating to the Bronze Age. Other archaeological landscapes from this period were revealed at Tintore and Oldglass.

The present-day landscape retains a wealth of evidence for settlement in the Early Christian and medieval period. To date, six large enclosure sites have been fully excavated in the townlands of Parknahown, Derrinsallagh, Lismore and Killeany. We know that the townland of Parknahown was heavily populated during the Early Christian/medieval period not only from the enclosures, ringforts and cemetery revealed during the excavation but also from the number of known enclosures still upstanding in the vicinity. That such monuments remain visible in the modern landscape is a testament to the careful cultivation of land by the local farming community, whose own links with the land surely mirror those of the former inhabitants of these sites.



Fig. 2: A penannular bronze brooch, dated to the late seventh century AD, decorated with a zoomorphic design consisting of bird heads. It was recovered from an early medieval enclosure at Parknahown, Co. Laois.



The term *fulacht fiadh* (plural: *fulachta fiadh*) refers to a mound of burnt stones traditionally believed to be the remains of an ancient cooking site. Early Irish literature from the ninth to the 16th century AD contains references to contemporary *fulachta fiadh*. While the consensus is that these are 'cooking places', the cooking is variously described as roasting, baking or boiling. Traditionally, *fulachta fiadh* have also been viewed as base camps for roving hunters, particularly the legendary Fianna of Fionn Mac Cumhail. Such references do not, however, describe accurately our many thousands of *fulachta fiadh*, which almost wholly date to the Bronze Age, c. 2000–800 BC. This is why archaeologists tend to prefer 'burnt mound' as a more neutral term for these sites.

A typical *fulacht fiadh* consists of one or more troughs associated with a low mound of heat-shattered stone and charcoal-stained soil, which is horseshoe- or crescent-shaped in plan. The troughs can be unlined, or may be lined with timber, wickerwork or stone. The troughs were frequently dug near water or deep enough to be below the water table and consequently filled naturally with groundwater. The trough was filled and an adjacent fire lit. Stones were heated in the nearby fire and then dropped into the water to bring it to the boil. Through continuous use, the trough would have been repeatedly emptied of accumulated stones and black sludge, the stones and sludge then tossed into a heap to create the typical 'burnt mound' we see in the landscape.

While clearly used to boil water, the exact function of *fulachta fiadh*/burnt mounds is unclear as few artefacts are ever found in association with them. Nearby features, such as wells, pits and post-holes, often indicate that temporary shelters or other structures were built and used beside them. It has been suggested that some may have been covered by light structures and used as saunas or sweat-houses. Other proposed functions include washing, brewing, dyeing cloth and leather preparation, in addition to cooking.

Niall Roycroft, project archaeologist, Meath County Council National Roads Design Office.

Readers may be familiar with Parknahown 5, a large archaeological site that has featured in the media in recent months. This large site is close to Cullahill, and a fine array of archaeological finds (Fig. 2) was discovered there, within a large Early Christian site that had multiple enclosures and also contained a cemetery from which 600 skeletons were removed. An extremely large enclosure at Killeany also revealed about 70 skeletons within a cemetery, all of which were removed carefully. For further information on these exciting sites and artefacts readers can refer to the site-specific notes featured elsewhere in the magazine.

A very interesting ringfort was excavated at Derrinsallagh. This site first came to light during a walkover of the route for the Environmental Impact Statement. A very noticeable kink in a field boundary was confirmed following detailed examination of maps of the immediate area. On investigation, this 'kink' was revealed as a portion of a large enclosure, c. 30 m in diameter (Fig. 1). The enclosure is bisected by the present road (R435) from Borris-in-Ossory, but testing revealed the remaining portion of the ringfort on the other side of the road, in the townland of Doon. The enclosure ditch for the ringfort may still be present beneath the road. In close proximity to Derrinsallagh, another large site within that townland revealed numerous conjoined furnaces, along with obvious evidence for metalworking. Extensive metallurgical and chemical testing of this site should help us to reach a fuller interpretation of the activities carried out on the site, and the reasoning behind such actions.

Further evidence for the Early Christian period was found in the townland of Lismore, where extensive testing revealed the presence of a large ringfort that extended into the adjoining townland of Bushfield/Maghernaskeagh. This large site at first proved rather elusive, but dedicated work by the archaeologists succeeded in tracing the line of the enclosure and completing the excavation.

In addition to the main sites mentioned above, areas containing evidence for charcoal-burning and production were also excavated. It would appear these sites are prehistoric in date, possibly Late Bronze Age or early Iron Age. A number of very fine, Early Christian corn-drying kilns provide further evidence for agricultural practices during that period and, taken in conjunction with the number of enclosures and ringforts excavated, suggest a heavily populated landscape. While the majority of the excavated sites date from prehistoric times up to the Early Christian and medieval period, a very small number of sites from the post-medieval period were also revealed. These include a smithing area in Cuffsborough and Curragh, together with the remains of a vernacular cottage in Palmershill. (Vernacular structures are buildings constructed by people not schooled in any kind of formal architectural design; such structures are referred to as vernacular architecture.)

This very brief overview of the initial archaeological findings from the M7/M8 motorway scheme demonstrates the wealth of archaeological sites and landscapes that await discovery through intensive testing techniques. It should be emphasised that, prior to the testing phase, none of the 94 archaeological sites was known. All of the sites were sub-surface, with no above-ground remains. Nonetheless, it is surprising that the large enclosures at Parknahown, Killeany, Derrinsallagh/Doon and Lismore had not only disappeared from the present-day landscape but also from the collective memory of the local people. That such a large cemetery at Parknahown was entirely unknown requires explanation, as does the loss from memory of the large enclosure at Killeany and its cemetery. Conversely, the townland names of Doon and Lismore 'remember' the knowledge of ancient Early Christian settlement sites: the Dún and the Líos Mór have been found and their secrets revealed. In addition, the curve of the ringfort at Derrinsallagh/Doon had been fossilised within a field boundary that was still clearly visible 1,000 years after the original ringfort was built. These sites have now been revealed in all their glory for the present-day inhabitants of these areas, and indeed for this generation of archaeologists.

Many of the archaeological sites have now been fully excavated and the task of post-excavation analysis and report compilation is commencing. University College Dublin is assisting in the post-excavation research agenda and it is hoped that several themes will be pursued to enable us to fully understand the archaeological landscapes that have been revealed, the role these sites had to play in their particular time period and something of the lives and deaths of the people who lived and worked in this part of Laois in previous millennia.

A glimpse of Prehistoric Life in

Coolfin

Ed Danaher, an excavation director with Archaeological Consultancy Services Ltd (ACS Ltd), reports on possible Bronze Age features at Coolfin, Co. Laois.

In April 2005 testing in the townland of Coolfin, Co. Laois, by Robert O'Hara of ACS Ltd, revealed three distinct areas of archaeological potential in relatively close proximity to one another. These comprised a roundhouse, a spread of burnt mound material (burnt stone, charcoal and so on) with an associated well, and three shallow pits filled with burnt mound material. The three sites were designated Coolfin 1, 2 and 3 respectively, and excavation was conducted between March and April 2006.

Coolfin 1, the roundhouse with a diameter of 10 m, was situated on an east-facing slope and overlooked the more low-lying Coolfin 3 (the

shallow pits). Partial slot-trenches denoted the outer walls while four internal post-holes would have housed the internal roof supports; a hearth was situated at the centre of the structure (Fig. 1). The slot-trenches were mainly U-shaped in profile and extended to a maximum depth of 0.25 m. They were predominantly filled with a brown, silty clay, except along the eastern terminals, which contained burnt mound material. Similar material was found in a number of internal pits. No datable artefacts were found in association with this structure.

Burnt mound material linked all three sites, the largest quantity deriving from Coolfin 3. At this location the material was present within a 12 m-long, east-west orientated cut, the southern side of which appeared to have been cut by a stream that was realigned in recent times. A subrectangular pit, 1 m deep and with a U-shaped profile, situated to the north of this feature has been interpreted as a well. This contained a single-plank walkway supported by uprights leading from outside the northern edge into the centre. After it was abandoned an isolated pocket of peat formed within this pit and preserved the timber, while a small quantity of burnt mound material sealed the pits' southern extent. It is possible that the well pre-dated the burnt mound activity present within the site.

A programme of post-excavation work, entailing mollusc, insect, petrological and radiocarbon analysis, is currently underway and it is hoped that the results will shed further light on what may have been important features of a Middle to Late Bronze Age landscape.



Fig. 1: Elevated view of Coolfin 1 roundhouse. (Hawkeye)

Settlement Patterns:

Cuffsborough 4 on the M7/M8 motorway scheme

Deirdre Murphy, a director of Archaeological Consultancy Services Ltd (ACS Ltd), provides a summary of settlement evidence uncovered at Cuffsborough, Co. Laois.

During archaeological assessment in advance of the proposed M7 Portlaoise–Castletown/M8 Portlaoise–Cullahill motorway scheme, a site was identified north of Ballacolla village, adjacent to a stream in the townland of Cuffsborough, and was subsequently excavated by ACS Ltd. Excavation revealed the remains of a large, palisaded structure, an oval-shaped house/hut, two hut sites (one horseshoe-shaped in plan, the other C-shaped), two bowl furnaces and a post-medieval road surface (Figs 1 and 2). The site, identified as Cuffsborough 4, was clustered among five archaeological sites that comprised burnt mound spreads (heat-shattered stone, charcoal and so on) and associated activity (Cuffsborough 1–3). Only one site, a 17th-century smithy (Cuffsborough 5), was not prehistoric in date. (Cuffsborough 1–5 are within a 600 m radius of each other.) The Record of Monuments and Places lists a further three sites in this townland: a church site, a cist burial site and a possible megalithic tomb.

The palisaded structure was circular in shape with an internal diameter of over 16 m. It comprised 23 post-holes interconnected by a shallow slot-trench. Packing stones, which presumably held timbers in place, were evident in both the slot-trench and the post-holes. A 1 m-wide entrance, with post-holes to either side, was located to the south-east. A post-hole over 1 m in diameter and over 1 m in depth was evident in the centre of the structure and was interpreted as a central roof support. An internal arrangement of 16 post-holes located

at an average of 1.6 m from the external post-holes would have offered further roof support. They formed a roughly circular pattern, but were discontinuous and not sufficiently uniform to suggest the presence of an internal wall. A hearth was located near the centre of the building and was surrounded by the probable remains of a spit structure. The remains of internal slot-trenches suggest that the structure may have been sub-divided into three rooms. A flint flake recovered from a post-hole was the only stratified find from the structure.

The oval-shaped house/hut, measuring 8.6 m east–west by 7.4 m, was evident to the north-east of the palisaded structure. It was constructed of 14 post-holes, some with packing stones. There were no internal features or associated finds.

The horseshoe-shaped hut structure, which measured 3.4 m east–west by 3.3 m, consisted of a slot-trench with 10 post-holes at its base. This building was evident further north. The C-shaped hut structure measured 6 m north–south by 5 m and comprised a slot-trench with post- and stake-holes.

Further activity was identified to the east of the site, where two bowl furnaces containing a large amount of iron slag were evident. Some fragments of Bronze Age pottery were also recovered from this site. Other features, including ditches, proved to be post-medieval in date upon excavation.

Settlement at this site has been dated to the Middle Bronze Age and a radiocarbon date of 1880–1520 BC was obtained from a charcoal sample taken from a post-hole of the large palisaded structure. A programme of post-excavation analysis is currently being undertaken.



Fig. 1: The large palisaded structure excavated at Cuffsborough.



Fig. 2: Aerial view of excavated features at Cuffsborough 4, Co. Laois. (ACS Ltd)

PARKNAHOWN 5: An Extensive Cemetery at the River Goul

Tara O'Neill, an excavation director with Archaeological Consultancy Services Ltd (ACS Ltd), describes the excavation of significant prehistoric and medieval remains at Parknahown, Co. Laois.

The large site at Parknahown 5, south-west of Cullahill village on the route of the proposed M7 Portlaoise–Castletown/ M8 Portlaoise–Cullahill motorway, is located south of the River Goul and north of Cullahill lane. Topsoil-stripping at Parknahown revealed a large number of archaeological features, including a double-ditched enclosure that cut an earlier enclosure (Fig. 1), a large burial ground, settlement evidence in the form of pits and post-holes and two *fulachta fiadh*.

The double-ditched enclosure was roughly circular and curved northwards, where it has been disturbed by modern activity. The inner ditch measures over 3 m wide and more than 2 m deep. It had a V-shaped profile and was found to contain a large quantity of animal bone, an infant burial and a human skull fragment. A penannular bronze brooch dating to the late seventh century AD was also recovered from the inner ditch. This brooch originated from Northumbria, England, and

comprised an almost complete ring portion decorated with a zoomorphic design of bird heads. The inner ditch of the double-ditched enclosure cut an earlier ditch that had been backfilled deliberately and appears to relate to an earlier phase of settlement activity. It contained a decorated bone comb (dating to the Early Christian period) and a number of corroded iron knife blades.

The double-ditched enclosure would appear to relate to the use of this site as a burial ground. A cemetery was excavated, located only partly within the roadtake, and revealed the remains of approximately 600 individuals (Fig. 2). The burial ground commenced in the Early Christian period and appears to have continued in use for a number of centuries. All of the burials were orientated east–west and associated finds included bronze ring-pins, bone needles and glass beads, the latter found predominantly with the infant burials.

Settlement evidence within the enclosure took the form of a badly disturbed, circular slot-trench with associated post-holes and pits. No finds were retrieved from any of these features and as yet no radiocarbon dates have been returned.



Fig. 2: One of the 600 skeletons excavated at Parknahown 5. (ACS Ltd)



Fig. 1: Aerial view of Parknahown 5, Co. Laois. (ACS Ltd)

One of the *fulachta fiadh* excavated as part of this site was located close to the River Goul. It measured 10 m by 4 m and extended beyond the western extent of the roadtake. The mound consisted of loose, dark-brown/black silt and heat-shattered sandstone. A simple earth-cut trough was exposed beneath this spread. Additional evidence of possible prehistoric activity was indicated by a number of pits and post-holes excavated towards the southern extent of the site. Artefacts recovered from these features included iron slag and flint debitage (waste material from the process of stone tool production), along with nine flint scrapers.

Environmental samples and the artefacts from Parknahown 5 are currently being analysed as part of the post-excavation programme. Future editions of *Seanda* will feature an update on the results of this work, and a full discussion of the archaeological findings will be published after the completion of the post-excavation analysis.

Fig. 1: View of the remains of Killeany castle, Co. Laois. (ACS Ltd)



A tale of two cemeteries

Ken Wiggins, an excavation director with Archaeological Consultancy Services Ltd (ACS Ltd), relates the stories behind the discovery of two cemeteries at Killeany, Co. Laois.

John Keegan, poet and storyteller, who died at the early age of 33 in 1849, was a native of the townland of Killeany in County Laois. Part of his life was spent at a cottage on the Tougher of Killeany, a road that extends west from the village of Shanahoe towards Gortnaclea bridge, spanning the River Gully. From the bridge, the road continues northwards in the direction of the town of Mountrath.

We have no record of the building of the Tougher of Killeany, but our knowledge of the history of the area has been considerably enriched as a result of the construction of two other roads traversing the townland. Remarkably, these roads have each uncovered significant human remains, and combined they give burial evidence relating to what may be termed ‘the two cemeteries of Killeany’.

The first road, which we shall call Shanahoe Road, dates from the early years of the 19th century and was built by the Queen’s County Grand Jury. It was designed to link the Gortnaclea–Mountrath road, i.e. the Tougher of Killeany with Shanahoe to the south-east, and the intersection of the two is still known as Togher Cross. Queen’s County is the name by which County Laois was known in those days. The Grand Jury was an annually appointed body, drawn from the ranks of the local gentry, which served as the

local authority for the county—the precursor of the present-day County Council.

The second road is the M7 Portlaoise–Castletown/M8 Portlaoise–Cullahill motorway scheme, testing of the proposed route of which was carried out by ACS Ltd between March and May 2005. The planned motorway route extends across the western part of the townland of Killeany on a north-east–south-west axis, entering Killeany over the River Nore to the north and exiting across the River Gully to the south.

Much of what we know about the discovery of the Shanahoe Road cemetery comes from the writings of Laois historian Canon John O’Hanlon, published in 1907. O’Hanlon relates that construction of the road cut through a burial site, ‘with little reverence for the remains of the dead ... leaving *strata* of human remains visible on either side’. The account is supported by the recollections of William Daly, a resident of Shanahoe, who attended the school there and informed Canon O’Hanlon that, as a boy of nine or 10, ‘he and the other boys were accustomed to pull the bones of the dead from the embankments and throw them in sport over the fences into the adjoining fields.’ Local tradition has it that a large, upright limestone slab marks the site of the cemetery. The slab (Fig. 2), which is not inscribed, is set against a field wall just inside a gate on the southern side of the road, less than 500 m south-west of Killeany castle, which is now just a ruinous wall near the southern bank of the River Nore (Fig. 1).

The story of the discovery of the cemetery near Shanahoe slipped from memory until a dramatic event in January 1958 brought it a brief moment of renewed attention. At that time reclamation works carried out under the Land Project Scheme exposed some human bones about ‘100 yards’ (91.5 m) south of Killeany castle. The human remains were reported to the National Museum and to the Office of Public Works (OPW), and an official inspection was carried out. It was noted that the bones were very numerous and ‘were only just below the surface of the ground’. The bones were viewed as ‘miscellaneous’ in nature, and included ‘portions of two skulls’. It was evident to the inspector that the remains had been reburied in the vicinity of



Fig. 2: View of Killeany cemetery slab. (ACS Ltd)



Fig. 3: Burial under excavation at Killeany. (ACS Ltd)

the castle following removal from some other location. The writings of Canon O'Hanlon provided the only feasible explanation for the discovery, and the investigation concluded that the human bone material was the result of an effort to 'dispose of some of the contents of the graveyard' uncovered during the construction of the road to Shanahoe about 150 years previously.

The human remains relating to the second cemetery at Killeany were excavated between February and May 2006 (Fig. 3). The burial ground was found near the centre of a large enclosure (Fig. 5) established around a low hill approximately 1.6 km WSW of the Shanahoe Road cemetery slab. The enclosure, which measured 180 m by 150 m, is delineated by a single ditch, measuring c. 3 m wide by c. 1.5 m deep. About one-third of the whole site, including most of the south-eastern quadrant, lay directly along the proposed route of the M7/M8 motorway and, as this was to be disturbed by the motorway, only this section was archaeologically excavated. The site is contained within three fields used for pasture, and no features related to it were visible before the route of the road was set out. The cemetery was located at the top of the hill, within a smaller inner enclosure that comprised a curvilinear ditch with an excavated length of c. 35 m, and measuring 1 m wide and 0.5 m deep.

A total of 70 skeletons or partial skeletons were recorded within and removed from the excavated limits of the cemetery. The remains accounted for 51 adults, 14 juveniles and five infants. The burials consisted of simple earth-cut graves, aligned east-west, with little or no evidence for stone-lining or any other form of embellishment. The burial ground is considered Christian in style and to date to the early medieval period. The remains have yet to be analysed in detail, but careful study of the bones will tell us a great deal about the population. The majority of the individuals were buried in the supine and extended position, i.e. placed full-length on the back, with head to the west and feet to the east. Six individuals were lying on the left side, facing north. There was one double burial, with two juveniles interred in the same grave. The finds include a spectacular 44-piece, polished, bone-disc necklace (Fig. 4), found with an adult female, a single bone bead from an infant burial, and a flat metal disc associated with another individual.

What does the evidence relating to the two cemeteries of Killeany tell us about the history of the locality? Any appreciation of the history and archaeology of Killeany needs to include consideration of the townland name. Where does the name Killeany come from and what does it mean? The prefix 'kill', from *cill*, meaning 'church', is widespread throughout Ireland.

Take, for example,



Fig. 4: Forty-four-piece, polished, bone-disc necklace found with an adult female. (ACS Ltd)

the parish of Killenny, also located in County Laois, c. 3 km north of Dunamase castle. Authorities consider the name Killenny to be derived from Kill-Eithne, i.e. the church of St Eithne, and the ruins of the church of Killenny can still be seen today. Similarly, the townland of Killeany is likely to be named after the patron saint of a church founded there in ancient times, but unfortunately no trace of a church exists at Killeany. Canon O’Hanlon was of the view that the church of Killeany must have stood near the Shanahoe Road and that the cemetery disturbed by the building of the road was part of its ‘surrounding graveyard’. The proximity of Killeany castle supports the opinion that a church was located in this area. The River Nore was a major line of trade and communication in the medieval period, and Killeany castle, located c. 35 km in the hinterland above Kilkenny city, which stood on the same river, was no doubt built to help maintain control over this vital supply line. A settlement based on the estate attached to the castle would have evolved as a matter of course. Killeany is marked on a barony map from 1657, and according to the 1659 census the village comprised 39 families. It has now vanished without trace, but most likely occupied elevated land well to the south of Killeany castle and would have included a church and graveyard, part of which was destroyed by the road-building activity of the Grand Jury.

If there really was a church in the village of Killeany, one contemporary with the adjacent castle, it would have been a late medieval foundation. However, the possibility exists that the townland takes its name from a church established at a much earlier date. The cemetery excavated in 2006 seems fairly definitely to be of early medieval origin. The Christian burial rite prohibited pagan practices, such as the provision of grave-goods, therefore the burial of a necklace with one of the individuals points to elements of pagan custom lingering on after Christianity was adopted. This suggests that the beginnings of the cemetery must be placed no later than the early part of the sixth century. Early medieval cemeteries were usually associated with churches, with the burials orientated east–west along the main axis of the church. Unfortunately, the excavated part of the Killeany enclosure did not produce evidence for a church. It may well be that traces of a church, the source for the name Killeany, remain undetected directly north of the line of the new motorway, but for the present at least this is a matter of pure speculation.

The enclosure at Killeany is impressive in terms of scale, stretching 150 m or so from one side to the other. Such a large area far exceeds the dimensions typical of the ringforts that were built in vast numbers throughout Ireland in the early medieval period, and seems more consistent with the larger monastic enclosures of the same period. Remarkably, the name Killeany is one that has enormous significance in the history of Irish monasticism. No visit to the Aran Islands, off the coast of County Clare, would be complete without taking in the village and early medieval ruins of Killeany on Inishmore, where in 480 or so St Enda founded what historian D D C Pochin Mould describes as his ‘famous pioneering monastery’. It is believed that other saints who visited the monastery at Killeany went on to make ‘their own foundations elsewhere’. It does not follow from the shared name that a monastery was ever founded at Killeany, Co. Laois, or that there is any direct link between the monastery at Inishmore and the large enclosure excavated at Killeany in 2006, but it is food for thought.

It is fascinating to consider the ups and downs that shaped the lives of the people of Killeany in former times. The archaeological record suggests that the large enclosure above the River Gully was abandoned, levelled and eventually forgotten with the passing of the early medieval period. Many years after, on the southern side of the River Nore, another settlement, stimulated by the construction of



Fig. 5: Post-excavation aerial view of the early medieval enclosure at Killeany. (ACS Ltd)

Killeany castle, developed into a village with a church and graveyard. Both communities failed to thrive and endure; everything they lived and worked to build was gradually erased from the landscape.

John Keegan, one of Ireland’s foremost storytellers, would be quick to point out that ‘A Tale of Two Cemeteries’, like any other story, needs a good ending. For the present, the best that can be offered is to conclude with the words: to be continued. There can be no doubt that the excavation of the Killeany enclosure in 2006 is a giant step forward in unlocking the mysteries of Killeany’s past, opening up exciting avenues of conjecture, but more work needs to be done before the full picture finally becomes clear. We can be sure the answers are waiting to be found in the rich earth of Killeany—to use Keegan’s own words—somewhere between the ‘classic vale of Gurtinaclea’ and the ‘silver waters of the river Nore’.

Permission to quote from material contained in the files of the National Monuments Archive is gratefully acknowledged.

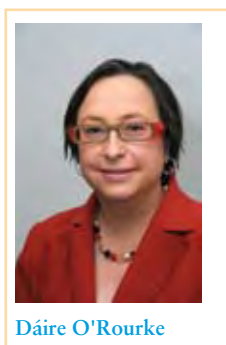
Q & A

Archaeologist in the hot seat

Sean O'Neill talks to Dáire O'Rourke, head of archaeology at the NRA, about her background in archaeology and the NRA's policy on archaeology.

Q. Sean O'Neill: What is your own background and how did you first get involved in archaeology?

A. Dáire O'Rourke: I think I was one of those precocious children who always wanted to be an archaeologist and I got my first archaeology book when I was about 10. I was watching *Blue Peter* and they advertised *The Young Archaeologist's Handbook*, so my mother sent off for a copy and I got the book and that was that: I was hooked! I was always interested in various modern cultures and anthropology, I still am, and that just developed over the years into an interest in archaeological cultures. So I decided to go to college to study archaeology.



Dáire O'Rourke

Q. Sean O'Neill: What exactly fascinated you about archaeology that made you want to pursue it as an academic exercise?

A. Dáire O'Rourke: Well, I suppose I was always interested in history; how people lived and what makes up societies. And I was very interested in my surroundings—in streets and buildings and how they came about and how people developed from living nomadic lifestyles into sedentary lifestyles, then into building towns and building cities. So I was always aware of and very interested in the historical aspect of things.

Q. Sean O'Neill: Where did you study archaeology and what did you study specifically?

A. Dáire O'Rourke: I went to University College Dublin (UCD) in the 1980s. I studied Archaeology and History for my Bachelor degree, I then completed a Masters degree in archaeology, also at UCD.

Q. Sean O'Neill: Would you encourage people to study and join the archaeological field today, and why?

A. Dáire O'Rourke: I think there's an awful lot of work at the moment for archaeologists, which is really as a result of the Celtic Tiger and the development boom. However, I think if you really want to be an archaeologist you have to be interested in

archaeology and archaeology as a subject is not for everyone—some people can see it as quite dry or quite academic. I think you have to be somebody who is fascinated by history and by the way the world around you works in a historical sense to last in this profession because it's a very tough profession.

Q. Sean O'Neill: You mention how archaeology could be perceived as dry and somewhat academic for some people. But at the moment there seems to be a resurgence in interest in archaeology in pop culture. What do you feel is causing that new interest?

A. Dáire O'Rourke: I think people have a fascination with the past and I think the modern medium of television is very good at disseminating that kind of information about the past and historical drama, or historical 'who done it', which is the kind of 'Dan Brown genre' of dealing with history. I think the reason it's popular is because it's always been popular, but it's just that we now have the popular medium of television that can jazz things up a bit and make it more fascinating and interesting maybe for the general punter, who mightn't normally be fascinated or that interested in history. Programmes like *TimeWatch*, which reconstruct the past in a very convincing way, they are bringing something that can be hard to picture very much to life for the television audiences, and people love to see that kind of thing because it's easy to understand and it's very interesting, not at all dry or academic.

Q. Sean O'Neill: Is this a trend that's going to pass, do you think? When do we find everything and say 'that's it' for archaeology?

A. Dáire O'Rourke: I don't think you are ever going to hear us say, 'We've found it all and we never have to find it again'. Now in this country, in relation to archaeology, we are finding out more and more information about different aspects of archaeology that have never been found out before, largely due to the amount of developments in the country and the amount of archaeological explorations, but also due to the level of research being carried out. For instance, we're finding all sorts of different aspects about Bronze Age and Iron Age settlement. When I was in college our knowledge of the Irish Bronze Age was largely about the artefacts, but now, from the excavations that have taken place, particularly in the last five to 10 years, there's an abundance of

Bronze Age settlement found throughout the countryside. I think what is happening now is that we are identifying new aspects of archaeology, which is allowing us to be more focused in our post-excavation analysis and research. The State is currently developing a research agenda, a kind of broad research agenda for the entire country in relation to archaeology. I think that's something that's very exciting, very innovative; it's about time that that occurred with these new initiatives developing in relation to archaeological research and thought that would allow all the new information that's coming up to be fed into more focused research and more focused information as to what it is we are finding and maximising that research.

Q. Sean O'Neill: So, today you're head of archaeology with the NRA. Now what exactly does that mean? What do you do everyday when you come into your office in Dublin?

A. Dáire O'Rourke: Well, I suppose before the NRA started employing archaeologists there was no real archaeological programme. In 2000 the NRA agreed a Code of Practice with the then Minister for Arts, Heritage, Gaeltacht and the Islands, the idea being to ensure that the archaeological work carried out on national road schemes was carried out efficiently and to the best archaeological standards. There had been a problem prior to introducing the Code of Practice in relation to trying to quantify the amount of archaeological work required, the costs involved and also there was little or no publication or dissemination of the information. The NRA, along with the Minister, decided to rectify that situation and one of the initiatives that came out of the Code of Practice was the employment of archaeologists by the NRA. The NRA now directly employs five archaeologists, with a further 21 project and assistant archaeologists in the National Roads Design Offices (NRDO) nationwide. This means the NRA now has its own in-house expertise. It has archaeologists on its staff and on the staff of the local authorities who inform the design process, who are part of the road-planning team and who are also involved in procuring the services of archaeological contractors to carry out the on-site archaeological work prior to construction. So there has been a huge sea change in the way the NRA deals with archaeology.

Today, I suppose my work is different from my early days. Nowadays my role is primarily in relation to archaeological policy with the NRA: defining archaeological policy for the NRA, looking at how and why we do archaeology, where we are going with archaeology, I suppose, really, looking at the big picture in relation to dealing with heritage issues in an environment that is pro-development. Basically I'm an archaeologist working for a developer, so it's a tightrope at times, trying to balance out all the needs, to ensure that archaeology gets a good deal while at the same time facilitating development in the country.

Q. Sean O'Neill: And what would you say is your favourite part of your job, your favourite part of being an archaeologist?

A. Dáire O'Rourke: I enjoy the 'cut and thrust' of life working for the NRA. It is never dull, sometimes frustrating and stressful but always rewarding. I get to be involved at a very exciting time in the history of archaeology in Ireland. The massive infrastructural work currently being undertaken gives a unique and exciting opportunity to be involved in uncovering Ireland's past. From the moment of planning a road scheme to the final publication or dissemination of the archaeological results of that process, my archaeologist colleagues and I are involved. I see it as an immense privilege to be involved in this process. There are new techniques to be explored. There are new and exciting archaeological finds, sites and site types being discovered. The archaeological work associated with the roads programme is changing the way we look at archaeology. Major archaeological sites that previously lay undiscovered are now being excavated in their entirety to the highest standards. We have the time and resources, which we never had before, to really interrogate landscapes, interrogate

sites, carry out specialist studies, fund research. It is an amazing time to be in Ireland and to be working in the job I am working in. I think this time will go down in history as one of our greatest periods of archaeological exploration and I feel extremely lucky and privileged to be part of that.

Q. Sean O'Neill: You mentioned the NRA's Code of Practice and the fact that you must preserve the past but be pro-development. Is the Code the point where these two factors meet, the thing that makes sense of two sometimes conflicting agenda?

A. Dáire O'Rourke: I suppose development and archaeology have always been uneasy bedfellows, but I think it's important that they are not at odds with one another. I think development and archaeology can work very well together once both are cognisant of each other's needs. As part of the roads programme the archaeologist is carrying out the work because development is taking place. But prior to development taking place the archaeology has to be catered for. And once everybody knows this and respects each other's position it's easy enough to ensure that the work is carried out to a high standard and is carried out properly for the benefit of all.

Q. Sean O'Neill: Some people would say you are on the wrong side of the road, so to speak, and they would be critical of your role. Others in the construction industry would say that this work is all a waste of time and money and it doesn't get practical application. How do you find being caught between these two worlds?

A. Dáire O'Rourke: You walk a tightrope all the time. People who think that, as an archaeologist, you shouldn't work for a developer are somewhat antiquated in their way of looking at the world. If you don't work for an organisation such as the NRA or a local authority, Bord Gáis or the Railway Procurement Agency, then how are you ever going to influence the way archaeology is dealt with by these organisations? Also, these organisations look to employ archaeologists because they want to ensure that the work they carry out is done to the best standards. It's not in anybody's interest for archaeological work or any other environmental work not to be done to the highest standards possible because nobody gains in that situation, nobody wins. To my mind, the very best way to manage both our heritage and our future plans is to work together on it to ensure we all get the best of both worlds.

Q. Sean O'Neill: So what you are saying is that it's more practical to change something from within, to drive that change from within. Would you say that is one of your personal codes of conduct?

A. Dáire O'Rourke: Absolutely! I mean, it's very easy to sit on the fence, or be critical of others. That said, I actually don't think there are that many people who are critical of the archaeological work of the NRA. We've looked at and developed procedures; we have raised the bar in relation to development-led archaeology. Prior to the NRA employing archaeologists, we would never have succeeded in developing our profession and our professional policies to such an extent—trying to find and avoid or to excavate archaeological sites in advance of construction while working within the parameters of the roads programme, developing research frameworks in relation to road schemes and funding research into archaeology. Our whole mindset and philosophy in relation to archaeology has changed, and that has a lot to do with the archaeologists working in organisations like the NRA and pushing the archaeological point of view. I find that once people understand archaeology and the concerns of the archaeologist, they are very accommodating and willing to find ways to facilitate avoidance, or excavation and subsequent development.

Sean O'Neill is head of communications with the NRA.

A theory on Boiled Bull and Burnt Mounds

Niall Roycroft, project archaeologist with Meath County Council National Roads Design Office, offers his view on the function of fulachta fiadh/burnt mounds.

There are several problems with cattle: they eat too much, they excrete too much and they weigh too much. This article concerns the first and last of these problems. How do you feed a herd of cattle over winter and how do you eat a whole cow before the meat goes off? The answers are: you kill the cows you cannot feed and you preserve the meat to prevent it rotting. So, what do cattle have to do with burnt mounds?

Burnt mounds/*fulachta fiadh* commonly contain over 20 tonnes of burnt stone, spread over areas 10 m or so in diameter. Excavations of such mounds rarely reveal any stratigraphy (distinct layers of archaeological material) to indicate breaks or resumptions in work, and the size of a typical heap of discarded stone indicates the trough needed to be filled between 50 and 100 times. This is clearly many weeks' work, perhaps completed in several intensive bursts over the short lifetime of the site.

In an Iron Age grain-storage pit excavated at Hazells Farm on the Channel Tunnel Rail Link in Kent, England, the jointed skeletons of at least six juvenile (domesticated) calves and at least three decapitated juvenile (wild) red deer were found. Beside the pit was a large, charred smoke-box and it seemed the meat had been jointed, smoked and then stored in the pit, along with the grain. Perhaps, then, most burnt mound sites were used for curing meat through boiling, possibly in salted water?

Speculation aside for a moment, all indications point to boiling meat being the main function of a standard burnt mound site. If this was in fact the case, it raises several questions:

1. What Irish animal occurs in such large quantities it would take weeks to cook?
2. If one of the site functions was cooking meat, what other activities were undertaken?
3. If animals were slaughtered and eaten on site, as evidenced in early medieval *fulachta fiadh* historical references, where are the discarded skulls, hooves and other bones?
4. Why do burnt mounds fade off after the Bronze Age but reappear in the early medieval period?

The only animals that occur in great quantities in Ireland are domesticated animals. A single cow produces a vast amount of

meat—more than a family can reasonably eat before it rots. During the affluent Irish Bronze Age, each autumn a typical extended family with several small herds may have had a surplus of 10–20 beasts that were not worth feeding, or that could not be fed through the winter. These animals needed to be traded, or killed and stored.

Domesticated animals are easy to slaughter under controlled conditions and such conditions would have occurred at any main settlement. Primarily, there would have been enough people to process the carcass—a labour-intensive business that involved breaking down the animal into the many usable components, including blood and offal, hide and horn. The major component is meat, of course, and this was needed to feed the families for perhaps six months to a year.

Bronze Age sites in Britain are often marked by *briquetage* (a crude pottery designed for reducing salt-rich liquid to salt crystal), and salt is the key to preserving meat. If salt were involved in meat preservation on Irish sites, that would lead to two burnt mound possibilities: meat was cooked in salty water to preserve it, similar to hams being 'cured' in salt vats today; or meat was preserved in so much salt that the joint had to be boiled in large quantities of water to make it edible, as with sealed barrels of meat in 19th-century shipping. The former idea is more economical, but there could easily be an element of both with regard to medium- and long-term storage.

The preservation process would have involved large pieces of carcass being transported to the boiling site, where they could be cut up further into trough-sized portions. Boiling the joints could take a couple of days per cow, and perhaps up to 10 trough-loads for a single animal. Troughs are often positioned to cut through the water table, which may mean they filled naturally, but it is far more likely that this positioning simply ensured that water did not drain out. Access to copious water sources (streams, springs or wells) for repeated trough refilling is a key feature of burnt mound sites. Trough linings, in the form of planking, wicker, stone or animal hide, meant the meat was kept relatively free of gritty sediment and also facilitated emptying of the trough. Also, as water in a wide, shallow trough will lose heat rapidly, the provision of trough lids may be considered.

A small group of people would need to live on or near the boiling site to operate the trough—gather wood, make charcoal, collect stone, cook the meat, empty the trough, guard the site. Almost certainly there was associated hunting to help fill the larder, so the burnt mound site would necessarily have doubled as a base camp for expeditions. Evidence for temporary occupation is often found near or under burnt mounds.



Fig. 1: Large burnt mound under excavation by Valerie J Keeley Ltd on the N3–N55 Link, Cavan Bypass Stage 2.



Fig. 2: Preserved wooden hearth base on burnt mound, M1 Dundalk Western Bypass, excavated by Irish Archaeological Consultancy Ltd.



Fig. 3: Excavation of a burnt mound on the N2 Carrickmacross Bypass by Irish Archaeological Consultancy Ltd.



Fig. 4: Large burnt mound on the Cavan Bypass Stage 2 under excavation by Valerie J Keeley Ltd.



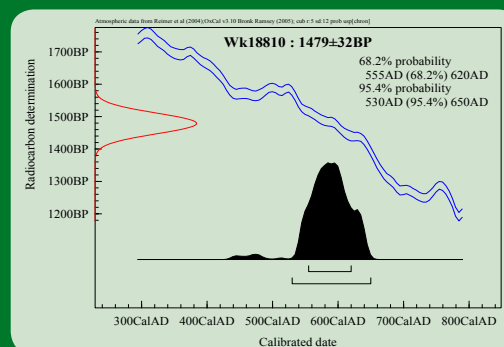
Fig. 5: Discussing a sampling strategy on burnt mound excavated by Irish Archaeological Consultancy Ltd on the N2 Carrickmacross Bypass.

Boiled, perhaps salted, meat would need to be air-dried and stored; it could be hung from roof trusses, like salami, with hearth smoke helping to cure it (medium-term storage), or it could be further salted and kept in an anaerobic (airtight) pit (long-term storage). The technique of storing grain in a pit is well known. Grain is put into a deep pit cut into clayey soil and the top sealed with clay. As some of the grain germinates, it absorbs the trapped oxygen and creates an anaerobic environment. The grain stops growing and the entire pit contents are preserved. Meat placed with grain in such a pit, as at Hazells Farm in Kent, should keep for the whole winter.

If burnt mounds do represent annual or bi-annual events attended by all extended families in Ireland for more than 1,000 years, it is not surprising there are so many of them. We view the Irish Bronze Age as a period of extraordinary archaeological richness. It is therefore likely that it was also agriculturally and livestock rich. If burnt mounds are connected with extensive cattle surpluses, this may be the reason they fade off during the Iron Age, when there is less evidence for a rich and affluent society.

When the occurrence of burnt mounds increases again, it is in the cattle-rich early medieval period, perhaps again employed to deal with domestic surpluses. On these sites the water is often brought to the meat rather than the meat to the water. With all this ‘cooking’ of domestic animals on-site, this left the associated hunting. Viewed in this way, the early medieval *fulachta fiadh* tales of hunting in the countryside and boiling up the catch of the day forms part of a long tradition, as much connected with stocking the winter larder as the heroic expeditions of the *Fianna*.

In Brief RADIOCARBON DATING



Radiocarbon dating is the single most useful method of dating for the archaeologist. Radiocarbon dating, also known as Carbon 14 or C^{14} dating, is a scientific method of dating by measuring the decay of the radioactive isotope Carbon 14 (C^{14}), which is present in all organic material. All plants absorb C^{14} from the atmosphere. When a plant dies, is burnt (as charcoal) or eaten, the intake stops. When a plant is eaten, the C^{14} transfers to the bones of the animal that ate the plant. Once the intake has stopped, each atom of C^{14} starts to decay at a known rate (50% after 5,730 years). The date from when the living thing died can therefore be measured by determining how much of a C^{14} atom is left. Samples used for dating usually consist of organic materials found on archaeological sites, such as charcoal, wood, seeds and other plant remains, and human or animal bone. It is not possible to be absolutely precise, so by taking measurements from all the decaying C^{14} atoms in the sample, a probability of age can be estimated. This statistical probability is given as a plus or minus number of years ‘before present’ (BP), with present being determined at 1950. Thus if a bone produces a date of 1479 ± 32 BP, that means that 1479 ± 32 ‘radiocarbon decay years’ have elapsed since the death of the sample.

The amount of C^{14} in the atmosphere has not been constant through time, however. If a sample was exposed to more C^{14} when it was alive, there is increased activity in the decaying sample. When some C^{14} dates were compared to absolute tree-ring (dendrochronological) dates, errors were found. (Tree-ring dating provides calendar dates and can even date wood to specific seasons within a particular year.) The solution was to use tree-ring sequences dating back to 7,000 BC to calibrate the radiocarbon years onto a graph or ‘curve’. By comparing the C^{14} ‘before present’ years to the tree-ring/ C^{14} graph, we can achieve corrected, or calibrated, results in real years. Thus, if we take our example above with a date of 1479 ± 32 BP, once calibrated that date would be given as: AD 530–650.

Niall Roycroft, project archaeologist, Meath County Council National Roads Design Office.

Construction of Stonehenge.
Construction of the Pyramids.Neolithic
c. 4000 – c. 2200 BCFirst farmers. Megalithic tombs e.g. passage tombs, portal tombs & court tombs. Bru na Boinne - Newgrange, Knowth and Dowth.
First use of pottery.
Communal burial.Invention of the wheel.
First Olympic Games are held.
Birth of Buddha.Bronze Age
c. 2200 – c. 600 BCFirst use of bronze tools & weapons, gold jewellery.
Earthen barrows, stone cairns & flat cemeteries.
Individual burial.
Fulachta fiadh, Stone Circles, Cremation burials.
Emergence of Kingships.The birth of Christ.
The rise of the Roman Empire.Iron Age
c. 600BC – c. 400 ADLarge ceremonial sites.
Use of iron for tools & weapons.
Ring barrows.
Contacts with Romanised world.

Archaeological Discoveries on the N2 Finglas–Ashbourne Road Scheme



by Maria FitzGerald

Maria FitzGerald, project archaeologist with Meath County Council National Roads Design Office, provides an overview of the sites excavated on the N2 in counties Dublin and Meath.

The new N2 Finglas–Ashbourne road opened ahead of schedule in May 2006 and commuters and local residents are now enjoying all the benefits of the new road. In terms of archaeology, the journey began well in advance of road construction, with investigations for the scheme commencing in 2001. At the outset there was little evidence for upstanding or known archaeology on the route, but a multi-faceted and multi-phased approach, incorporating desk-top survey, aerial survey, geophysical survey, test excavation and excavation, revealed approximately 20 new sites. These sites were fully excavated in 2004 by the staff of Cultural Resource Development Services Ltd.

The new road, which is 17 km long, extends from the M50 junction at Finglas and bypasses the thriving town of Ashbourne along its western side before rejoining the old N2 just north of the town. As you drive along, the new landscape of the road can seem both familiar and unfamiliar because of the inevitable changes in boundaries and topography. The archaeological investigations have also given us a tangible sense of the past: what were once green fields are now places where we know people lived, were buried, practised their rituals or carried out the daily grind of work and subsistence. The new sites uncovered reflect the diversity of human activity in this area over the past 5,000 years and range from short-term, dispersed occupation pits and features, such as burnt mounds, small-scale kiln and industrial sites, to extensive habitation complexes, as well as sites of ritual, burial or ceremonial significance.

The excavation phase of the project is now complete. Archaeologists spent 12 months meticulously excavating and recording features, collecting animal

bones, soil samples and various artefacts. On completion of the excavations a large archive of hand-drawn plans of features and structures, section drawings showing the inter-relationships between the layers and features, photographs, notebooks, registers of finds and samples and context sheets was taken away by the archaeologists. By doing this, they have ensured that the site is fully scientifically recorded for future generations. It is now the task of the archaeologists to interpret and assimilate all of this data in order to build up as comprehensive and as accurate a picture as possible of past human behaviour on each site and in the Finglas/Ashbourne area.

The post-excavation phase of this project is ongoing, but is largely complete. Specialists have analysed the human bone, the charred seeds, the animal bones and the pottery from the N2. Artefacts have been sent off for conservation and suitable organic materials have been sent for dating. It is the task of the director of each site to draw together all this diverse information into a comprehensive narrative of the site. On a large-scale project such as this, it is fascinating to witness the evolution of the director's site interpretation from first thoughts, throughout the excavation and to the final, assimilated interpretation that includes all of the specialist results and scientific dates. The post-excavation analysis often confirms or refines the director's interpretation of the site, but it can also reveal some surprises—and occasional disappointments.

Most of the new sites were either prehistoric or had important phases of prehistoric activity. Activity in the area was already known from the presence of two burial ring-ditches but the new sites add greatly to our knowledge. In general, archaeological evidence for the Iron Age period in Ireland is enigmatic and elusive, but the extensive investigations on new road schemes are expanding and illuminating our understanding of the period. Considerable evidence for Iron Age activity was

<p>Reign of Charlemagne. Bayeux tapestry depicting the Battle of Hasting.</p>	<p>Spread of Black Death. Invention of the printing press. Christopher Columbus travels to America. The Reformation.</p>	<p>Spanish Armada. The Tudor Reign. Construction of the Taj Mahal.</p>	<p>Captain Cook travels to Australia. The Industrial Revolution. The French Revolution. The rise and fall of Napoleon.</p>
<p>Viking Age 790 – 1169 AD</p> <p>Viking raids. Development of High Crosses, Round Towers. Foundation of towns. Battle of Clontarf.</p>	<p>Medieval late 12th century – early 16th century AD</p> <p>Anglo-Norman invasion. Development of stone castles and manors. Church reform.</p>	<p>Post-Medieval early 16th century – late 17th century AD</p> <p>Gaelic Wars. The Plantation of Ulster. Flight of the Earls. Battle of the Boyne.</p>	<p>Industrial 18th century – 19th century AD</p> <p>Penal Laws. 1798 United Irishmen Rebellion. 1801 Act of Union. Industrialisation begins.</p>



Fig. 1: Elevated view of irregular enclosure at Kilshane, Co. Dublin. (Hawkeye)



Fig. 2: Animal bone layer undergoing excavation at Kilshane Neolithic henge, Co. Dublin. (Hawkeye)

recorded from the N2, although much of this emerged in the post-excavation process. Many features that had been identified tentatively as Neolithic, Bronze Age or early medieval on-site upon analysis yielded dates from the Iron Age period.

The earliest site was a Neolithic ritual enclosure, or henge (37 m by 27 m), at Kilshane, Co. Dublin, dating from the period 3200–2800 BC (Fig. 1). This site also saw a period of intense Early Bronze Age activity. The enclosure ditch, formed

by a series of intersecting and overlapping ditch segments, produced a unique deposit of cattle bone all around its circumference (Fig. 2). To date, this deposit represents the largest assemblage of Neolithic animal bone from Ireland and, as a result, should contribute much to this field of study. Its deposition may reflect some form of community ritual activity in this region. Approximately 40–50 immature cattle are represented, which were deposited into the ditch in both a disarticulated and articulated state sometime in the middle of



Fig. 3: Burial with Food Vessel pot at Harlockstown, Co. Meath. (CRDS Ltd)

the Neolithic period. The Kilshane site may have served as a community meeting place for ceremony and/or burial during the Neolithic and Bronze Age periods. It has not yet proved possible to scientifically date the animal bone from Kilshane, so it is currently dated by its association with a pot of Neolithic date.

Most of the other prehistoric sites were Bronze Age and/or Iron Age in date. Large burial and habitation complexes were recorded at Harlockstown, midway along the scheme, and at Rath at its northern end, where the new road rejoins the existing N2 (both sites are located in County Meath). Harlockstown was a burial site in the Early Bronze Age period, as evidenced by a circular enclosure with two burials within its interior accompanied by Food Vessel pots (Fig. 3) and a cremation. Iron Age activity on the site was manifested by a rectangular enclosure, where metalworking activity took place, and by a small, poorly preserved burial ring-ditch.

Rath was also an extensive prehistoric complex and its main features are a possible sweathouse (Fig. 5), four burial ring-ditches, an area of industrial activity and some very large, deep,



Fig. 4: Close view of Rath toe-rings. (CRDS Ltd)

waterlogged pits or wells. This site produced an assemblage of high-status and unique finds, including a woman buried wearing toe-rings (Fig. 4), an unusual copper-alloy La Tène or high-status Iron Age fibula brooch of British type, tiny segmented faience beads and some prehistoric wooden vessels.

The faience beads were retrieved from one of the burial ring-ditches. Faience is a green, glass-like substance that is made from simple elements but can be very difficult to make. Such beads were often worn as talismans in life or in death. Faience dates to the Early Bronze Age in Britain and Ireland (1900–1500 BC), but the ring-ditch has produced an Iron Age date (550–350 BC). According to faience specialist Dr Alison Sheridan, these beads appear to be of European form but may have been made locally.

In relation to the woman buried wearing toe-rings, this also appears to be a unique find in Ireland. Male and female burials with toe-rings have been found in Britain, so this find initially suggested that this woman had come from Britain, or had strong connections with Britain. In order to determine her origins, analysis of the lead, strontium and oxygen isotopes in one of her teeth was carried out by Bradford University. These isotopes are incorporated into dental enamel in childhood. Strontium and lead can link a person to the rocks in the region where they obtained their food and drink, while oxygen can be an indicator of the climatic region in which an individual obtained his/her drinking water. Unfortunately, there is currently no published data from other Irish burials against which to compare the results. However, the results were consistent with origins on the limestone

in eastern Ireland and suggest that the woman from Rath probably originated in the area where she was buried.

Other Bronze Age sites include Muckerstown, Co. Meath, where two very large and deep pits, or wells, produced an assemblage of enigmatic wooden artefacts comprised of bundles of twigs bound with withies (twisted wooden ropes). During the excavation there was little firm indication of the date of the site. However, the first date from one of the withies returned a Middle Bronze Age date (1600–1210 BC). The function of these objects is unknown, but the early date and the lack of comparable material from Europe highlights the unique nature of this assemblage. (These objects are discussed in detail elsewhere in *Seanda* by the excavation director Cairtriona Moore and environmental specialist Dr Ingelise Stuijts.)

Prior to the N2 excavations early medieval settlement in the area was known from the presence of ringforts, souterrains and early church sites. Geophysical survey identified a new ringfort at Cookstown, Co. Meath, which was partially located inside the roadtake. Ringforts are interpreted as defended farmsteads and the presence of an extant 18th-century farmhouse within the site reflects considerable continuity of settlement and tradition. In addition to the site at Cookstown, a very large and extensive early medieval settlement and burial site was discovered at Raystown, Co. Meath, midway along the scheme. This site was discovered during the geophysical survey and the subsequent excavation revealed that it was used between the early fifth century and the 11th century and comprised



Fig. 5: Sweathouse at Rath, Co. Meath: a circle of post-holes within

multiple enclosures, a burial site, souterrains, settlement areas and numerous watermills. Ninety-three people, the majority of them adults, were buried at the site. It was also a very important centre for food production, as evidenced by the remains of eight horizontal watermills (Fig. 6) and five cereal-drying kilns. Despite the extensive nature of the site and its obvious importance, it appears to have been forgotten over the course of time.

The human bone found at Raystown was analysed by Linda Fibiger, a specialist in the study and analysis of human and animal skeletal remains, and her analysis has shed light on the lives of the community of people buried here and, in some instances, on their deaths. She has deduced from bone isotopes that the community lived on a diet mainly derived from the land and supplemented by small amounts of fish. She also noted that there was evidence for diseases, such as tuberculosis, probably resulting from the physical contact between the community and their animal herds. Other degenerative diseases of the bone joints were noted, reflecting the physical hardship of daily activities on the site and indicating the division of labour in the community on the basis of biological sex. The men had suffered from spinal joint disease, pointing to the fact that they had carried out repetitive lifting over the course of their lives; the women had more non-spinal joint disease, possibly resulting from food-preparation activities. Fibiger's analysis of two of the adult men buried at the site revealed they had been involved in serious conflict, in which blades were used: a reminder to us that the Raystown settlement was not always a peaceful agrarian idyll and may have come under threat at some stage.



a narrow enclosing ditch. (CRDS Ltd)



Fig. 6: Millhouse at Raystown, Co. Meath. (CRDS Ltd)

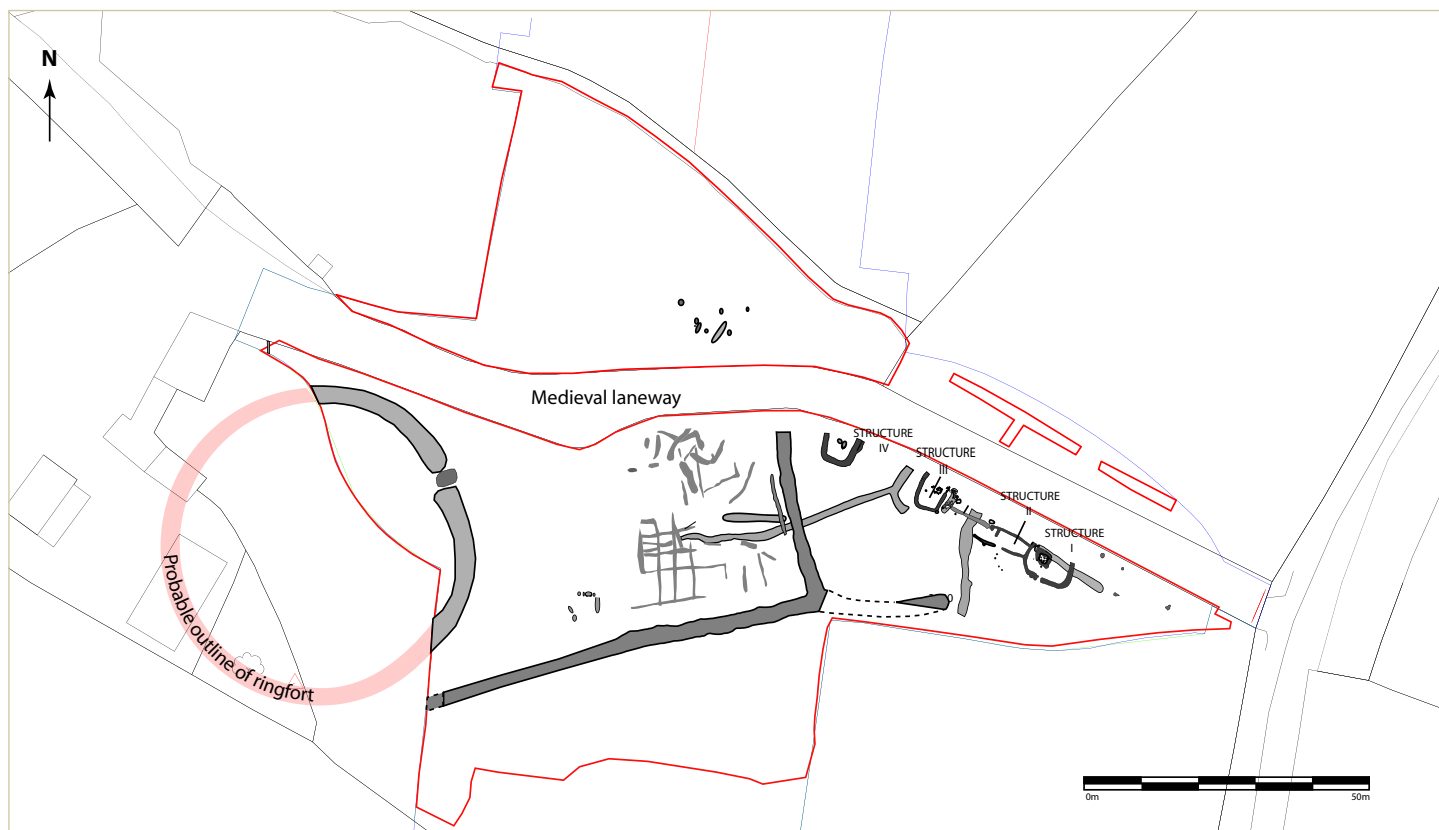


Fig. 7: Schematic drawing showing the early medieval ringfort and row of medieval buildings at Cookstown, Co. Meath. Structure 1 is the building interpreted as a forge. (CRDS Ltd)

The medieval period in the area is well represented by high-status, defensive mottes and castles, but the evidence at Cookstown augments this picture with support for a rural settlement community. Other medieval farms were identified at Baltrasna and Muckerstown and these add further to the suggestion of rural settlement in the region. Cookstown was multi-period, but it had a primary phase of medieval settlement. The site preserved a row of medieval houses, one of which was a forge, as well as the kitchen

gardens of the houses (Fig. 7). The forge probably produced the iron tools required by the community. Also preserved were the remains of a small, late 18th- or early 19th-century cottier's cabin, which had been constructed in a ditch beside a narrow lane leading to the house. This cabin is discussed elsewhere in *Seanda* by the excavation director Richard Clutterbuck.

All of the sites discussed above were unknown in advance of the road scheme and

indicate that human activity in the area was more extensive than previously understood. Additionally, many of these were new site types that had never been recorded and they now demonstrate that there was greater social diversity and complexity than we were able to infer previously. The post-excavation phase of the project is well underway and it is intended to publish the results of the excavations in more detail in due course.

A Bronze Age Enigma:

Some Unusual Artefacts from County Meath

Caitríona Moore, an excavation director with CRDS Ltd, and Ingelise Stuijts, an environmental specialist with the Discovery Programme, discuss their analysis of unique prehistoric artefacts discovered at Muckerstown, Co. Meath.

The Site

From February to May 2004 excavations in Muckerstown townland, Co. Meath, were carried out by Caitríona Moore of Cultural Resource Development Services Ltd (CRDS Ltd). These excavations were completed as part of the N2 Finglas–Ashbourne road scheme and they yielded a cache of intriguing wooden objects, all recovered from the base of a large pit, or well. The site consisted of a central, semicircular slot-trench within which were two post-holes. This feature has been interpreted as structural, but it produced no datable artefacts or other material. External to this, to the south-west, were two very large pits, or wells, almost identical in form. Teardrop-shaped and measuring 10 m by 6 m, on average, both began as very shallow cuts, which gradually increased to an average depth of 2.5 m.

The pits were filled with heavy, waterlogged clays rich in organic remains, including plant material and worked wood. Given the scale and, in particular, the depth of the pits, it is likely they were used to access and/or retrieve groundwater. The gradual incline into both also supports this suggestion, however a definite function remains uncertain. The artefacts that form the basis of this article were all retrieved from the bottom of one pit and were deposited randomly throughout 13 separate layers. A fragment of one artefact has been radiocarbon-dated to 1520–1310 BC.

The Artefacts

Unparalleled in the archaeological record, each artefact consists of a bundle of c. 20 twigs with diameters of 20–40 mm. The bundles are approximately 170 mm long by 50 mm wide and taper from one end to the other. The widest end is referred to as the splayed end, partially due to the fact that the tips of the twigs at this end retain their natural shape and fan outwards. At the opposite end of the bundle, which is referred to as the bound end, the twigs have been cut with a metal tool, frequently along the same plane (Fig. 1).

Within a large number of the bundles is a piece of brushwood, referred to as a brushwood spine (Fig. 2). These average 10 mm in diameter and most have been worked at one end, occasionally at both ends, with a small, flat, metal tool. These central spines are almost as long as the twigs and would have provided an overall rigidity to the objects.

The bundles of twigs are held together by withies (twisted wooden ropes) that spiral around the length of the bundle and are fixed securely at the narrow or bound end. Frequently the withies are looped around this end up to three times and tied in a simple knot. In many instances they are clearly incorporated within the bundle and emerge from the splayed end to spiral around the length of the artefact before being tied.

These objects were manufactured by first gathering a small bundle of twigs and then tying them with a withy rope spiralled around the length and knotted securely at one end. Given that the toolmarks on the twigs are often aligned similarly, it can be assumed that this trimming or cutting was the final action in their manufacture. It cannot be ascertained when the brushwood spines were inserted into the bundles: they may have been gathered in conjunction with the twigs and withy, or have been inserted following the knotting. However, the cutting of many of the spines to a point could be seen as a way in which to facilitate insertion into the already tied bundles.

Four artefacts consist of a withy only and one artefact of a loose spine. The remaining objects are brushwood bundles of which almost half (57 objects) have a central spine. In most cases both the withies and the central spines are made of hazel, but there are also withies made of alder (six), holly (one) and ash (one). Other wood species were used for the spines, including willow (nine), elder-type (five), ash (five) and alder (five). The loose spine was made from apple-type wood.

The brushwood bundles can be roughly divided into three groups. The majority are made of elder-type wood (91 artefacts). A second group is formed of willow artefacts (10). A third group includes wood from a mixture of species, including two artefacts made exclusively of alder and one exclusively of ash. A portion of this group contains elder-type brushwood mixed with alder and hazel. Loose pieces of wood include rose and sloe, which were probably gathered accidentally. It can be concluded, therefore, that although the elder-type was the preferred wood species for the artefacts, no strict regime was followed in making the bundles. The wood species identified can be found in scrub, hedges and in woodland margins and was readily available.

The willow bundles retain their bark and are made of the thin, woody spray. The ash bundles are stiffer, while the brushwood is slightly larger in diameter. The bundles made of the elder-type are thin, hollow and often flattened. A yellow/greenish layer of cells indicates the presence of the outer skin. Based on the presence of the outermost cell layers, there are no indications that any of the wood was used. In addition, there are no abrasion marks or cuts visible, apart from the finishing cuts at the bound end.

The wood species identifications were problematic for approximately half of the artefacts made of the elder-type. This was due primarily to the fragility of the material. Another reason is the fact that the brushwood consists of woody material in part only. Whereas the brushwood bundles are woody at the bound end, they are herb-like at the splayed end. Therefore all characteristics of the wood type in question are probably not yet fully developed.

The Function

It does not appear that these were difficult objects to manufacture, however their uniformity, the numbers involved and their location at



Fig. 1: A partial artefact made of willow brushwood and hazel withy, cut at bound end. (CRDS Ltd)

the base of a large, water-filled pit suggests deliberation and intent on several levels. As stated previously, these objects have no known parallels in the archaeological record, but research into later folklife traditions has provided information regarding a number of, if not identical, at least similarly constructed items.

Besom/broom

One such object is a besom, or broom, used for sweeping. Although large, besoms are traditionally made from a bundle of twigs tied at one end with a withy. Into this end is inserted a handle, which has the effect of tightening the bundle further. Research at the National Museum of Ireland, Museum of Country Life at Turlough Park, Co. Mayo, found several examples of hand besoms and water sprinklers (smaller versions of that described above), which had also been trimmed at the bound end.

Traditionally, the best wood species for besoms in the historical past was broom, but at present most besom heads are made from birch or heather. The basic pattern for twig brooms is quite similar: a bundle of fine twigs c. 900 mm long, giving a finished broom of about 1,500 mm. The handle was made of a straight pole, about 40 mm in diameter. Most besoms have two bonds, or laps, binding the head and these are often cleft brushwood of various wood species, or a hazel withy 6 mm, in diameter.

Firewood

Another suggestion for the function of these artefacts is that they were used as firewood. The most common fuel was a bundle of sticks or twigs bound together, made from those sticks with no other craft use. Traditional words associated with firewood are faggot, bavin, pimp and kid. The term 'faggot' first shows up in English around AD 1300, but probably derived from Old French. Originally, it came from the Greek word *ó phakelos*, or the Latin word *facula*, meaning torch. A faggot can be described as a bundle of sticks. A slender branch, twisted to form a withy, forms the usual band to hold the bundle together. A traditional faggot is 900 mm long and 610 mm in circumference.

Smaller wood was made into bundles called bavins, held together by withies that formed two or three twists around a bundle. Bunce, or kids, was a term used for bundles of the smallest wood and rubbish. A pimp is a type of firelighter made on the borders of Sussex and Surrey, England. Pimps were usually made during summertime, using birch spray cut during the winter months in a flat trough called a boy. A pimp is made of a small bundle 150 mm long by 75 mm across, to which is added two cleft sticks of hazel, all bound together with a withy. A bundle of 25 pimps are bound together to form a kid.

It seems the firewood-makers were creative in their language, creating families out of their leftovers. All the above-mentioned firewood terminologies, especially the terms 'faggot' and 'pimp', are often associated with other meanings nowadays, including heretics and homosexuals. (The latter association has its origin in the USA.)

Drainage and defence

The term 'fascine' is still used for bundles of brushwood used to secure revetment for defence purposes in coastal or river situations. Fascines are basically bundles of long faggots, about 20 rods, with a diameter of 25 mm and a total length of 2.4–3 m, bound in three places to give a final diameter of about 260 mm. Such bundles of brushwood were also used in ditches instead of pipes, to allow for drainage. These ditches were called 'faggot-drains'.

Other parallels

Research into folklife traditions and artefacts has revealed several customs involving the twisting and fashioning of organic material, such as rushes or straw, into playthings or tokens used or bestowed at certain times of the year. Objects such as harvest knots and rush or straw hats and masks may have had both practical and ceremonial value, and while the Muckerstown artefacts do not really emulate such items, the act or art of fashioning objects from twisted plant or wood fibres, however meaningful, is certainly echoed by these artefacts.

Conclusion

The brushwood artefacts from Muckerstown are unique finds in Ireland, having no obvious parallels. Their manufacture is reminiscent of a number of traditional woodland crafts. All such crafts have their basis in woodmanship and the knowledge of how to work with existing woodlands. In Ireland there is no real woodcraft tradition that can be traced back hundreds of years. The main reason for this is that history does not indicate the presence of large-scale managed forests before the Plantation period, and compared to Britain, for example, knowledge of ancient woodlands and woodmanship is limited. Information can, however, be gleaned from folklife traditions and medieval literature. Of course, as the artefacts date to the Bronze Age, we might expect that immediate parallels would be difficult to find.

Of the woodland crafts described above, some comparisons seem more likely than others. Whilst the similarities between besoms and the Muckerstown artefacts are notable, several aspects of the latter prevent their definite interpretation as besoms. The presence of a central spine, almost the same length as the entire object, would have rendered the artefacts rigid. In addition, there is no evidence of a bushy, brush-like end on the recovered material. Coupled with evidence from the wood species identification programme, this suggests that the twigs were without leaves and were not damaged or utilised in any way. Nevertheless, the functional explanation of the artefacts as besoms or brooms with a sweeping function cannot be excluded.

Based on the argument above, it seems unlikely that the artefacts were fascines, in that this function would not require such an elaborate manufacturing procedure; a mere bundle of brushwood would suffice. The size of the bundles also seems rather too big, although the Bronze Age measurements do not need to coincide with present-day opinions and techniques.

The firewood option has been described in detail because there are many variations on the same idea. Size matters with regard to firewood bundles, and the present-day options of faggots, bavins, pimps, kids and bunces have been discussed. According to wood technology expert Damien Goodburn, historically a faggot was bound with two twists of the withy, and the smaller bavin with one twist of the withy. The artefacts from Muckerstown are thus very reminiscent of what in traditional woodland crafts is called a bavin.

This leads to a final suggestion, that these artefacts may be ritual in nature. The votive deposition of objects in wet places is well documented throughout prehistoric times. Given the Bronze Age date of the Muckerstown artefacts, it can be reasonably suggested that these may be meaningful, symbolic objects, perhaps representing an individual person or group of people, which were deposited deliberately at the base of the deep pit. It is possible these bundles of twigs could have held both a practical and ritual significance.



Fig. 2: A complete artefact made of elder-type brushwood with hazel withy and spine. (CRDS Ltd)

Wretched Beyond Description:

A Cottier's Cabin from Cookstown, Co. Meath

Richard Clutterbuck, an excavation director with CRDS Ltd, describes the unexpected remnants of a humble cottier's home on the route of the N2.

The discovery of a cottier's cabin, dating to around the turn of the 19th century, during archaeological excavations in advance of the N2 Finglas–Ashbourne dual carriageway provides a stark reminder of a time when Ireland was a far poorer country, when the Irish countryside was a densely settled landscape of small farmers, cottiers and labourers and when the majority survived in conditions of abject poverty. Excavations on a rural site in the townland of Cookstown, 1 km west of Ashbourne in County Meath, unexpectedly discovered the cabin within a ditch, beside a narrow lane leading to an 18th-century farmstead.

The structure measured over 7 m by 4 m externally and appears to have been built as follows. A partially silted-up ditch flanking the farm lane was chosen as a site. One side of the ditch formed the cabin's back wall; three low walls of stone, 0.5 m wide, formed the remainder; two walls spanned the breadth of the ditch and a third extended along its brow, facing onto the lane. Once the walls had been built the interior was deepened to create more space within the structure, making the interior floor level lower than that of the ground outside. Soil taken from within appears to have been deliberately banked up against the outside of the walls for extra support or insulation. The structure's entrance was at the lowest point of the ditch. Although no indication of the roof survived, presumably it extended across the ditch, resting upon the edge of the ditch and the low walls to form a lean-to.

The cabin would not have been a pleasant place to live. A bare earth surface served as its floor. Two small hearths in scooped-out hollows—one in the centre of the cabin and the second set against the wall opposite the entrance—provided light and heat, but must have created a very smoky environment. The cabin's situation within the ditch would also have made it damp and a shallow drain extending down the centre of the cabin can have provided only partial relief from recurring flooding. Potatoes formed the major staple of the Irish diet at this time. A series of parallel furrows, shallow open drains and pits—all of broadly similar date to the cabin—were exposed in the field behind the cabin, evidence perhaps of potato cultivation by the cabin's inhabitants.

The structure's marginal situation, small size and poor construction suggest it was a cottier's cabin. Glass and ceramics recovered from the ditch fills underneath suggest a date in the decades surrounding the turn of the 19th century; no artefacts were found within the cabin dating to its occupation. Whilst the cabin is not depicted on the

first edition Ordnance Survey maps, it is questionable whether the surveyors would have considered such a temporary structure worth recording.

By 1841 two-fifths of all families in the country dwelt in cabins, the majority presumably of not dissimilar scale and construction to that described above. A brief sketch is given in Arthur Young's *A Tour in Ireland* from 1780:

... a great many cabins, usually by the roadside or in a ditch [where] a wandering family will fix themselves under a dry bank and with a few sticks, furze, fern, etc. make up a hovel much worse than an English pigstye [sic], support themselves how they can, by work, begging and stealing ...

Conditions in cabins in Meath in 1802 were described in Robert Thompson's *Statistical Survey of the County of Meath*:

... [the cabins were] wretched beyond description ... often not sufficiently covered in to keep out rain ... [The cabins are constructed from clay] taken to build the walls from the spot, on which they are raised, leaving the surface of the floor, and the ground immediately about the walls, the lowest part.

Thompson also recorded that the family slept on the damp floor, sharing the space with their pigs and fowl. Cobbett describes a similar dwelling in 1834; the dimensions given compare closely with the excavated cabin at Cookstown:

... They consisted of mud walls, with a covering of rafters and straw. None of them so good as the place where you keep your little horse. I took a particular account of the first place that I went into. It was twenty-one feet long and nine feet wide. The floor, the bare ground. No fireplace, no chimney, the fire (made of potato-haulm) made on one side against the wall, and the smoke going out a hole in the roof. No table, no chair; I sat to write upon a block of wood. Some stones for seats. No goods but a pot, and a shallow tub, for the pig and the family both to eat out of.

The cottier class of this period worked on the larger farms, sub-letting small patches of ground (conacre) for raising potatoes. The cottiers' tenure was fixed by verbal agreement on a yearly basis, often dictating the size and permanence of their dwellings. Living conditions of the cottier class were examined by the Royal Commission on the Condition of Poorer Classes in Ireland in 1836. The Vicar of Ratoath, Rev. Robert Torrens Boyle, was questioned about the conditions of the poor in Ratoath Barony, which contained Cookstown. Boyle speculated that about 500 labourers lived in the barony, only

three-quarters of whom were in constant employment. No support existed for these people beyond their meagre seasonal earnings and their own savings. Rev. Boyle stated that their employment consisted of planting and digging potatoes and saving the hay; May, June, July and winter being the periods of least employment. Women and children usually spent their time finding fuel from the stubble and hedges of the farms, coal and turf being in short supply in this area.

The cottiers in Cookstown lived a marginal existence. They, and millions like them, formed the lowest tier of the rural society. Despite, or perhaps because of, its marginal location, the cabin at Cookstown did not last long. Some time around the turn of the 19th century, possibly only months after its construction, a substantial new bank was built flanking the lane. To make way for the new field boundary the walls of the cabin were thrown down and its interior backfilled. Perhaps the cottier's employment had expired and they simply moved on. Perhaps they were ejected and the bank was created to prevent further such dwellings. Whilst there is no direct evidence that the occupants abandoned the cabin due to famine—a fairly common occurrence around the turn of the 19th century—it was the disaster of the great potato famine of 1845–50, with its economic, social and demographic consequences, that eventually destroyed the cottier class. The cabin in the ditch at Cookstown is a poignant reminder of these people and their unremittingly hard lives.



Fig. 1: Cottier's cabin at Cookstown, Co. Meath, looking east. (CRDS Ltd)

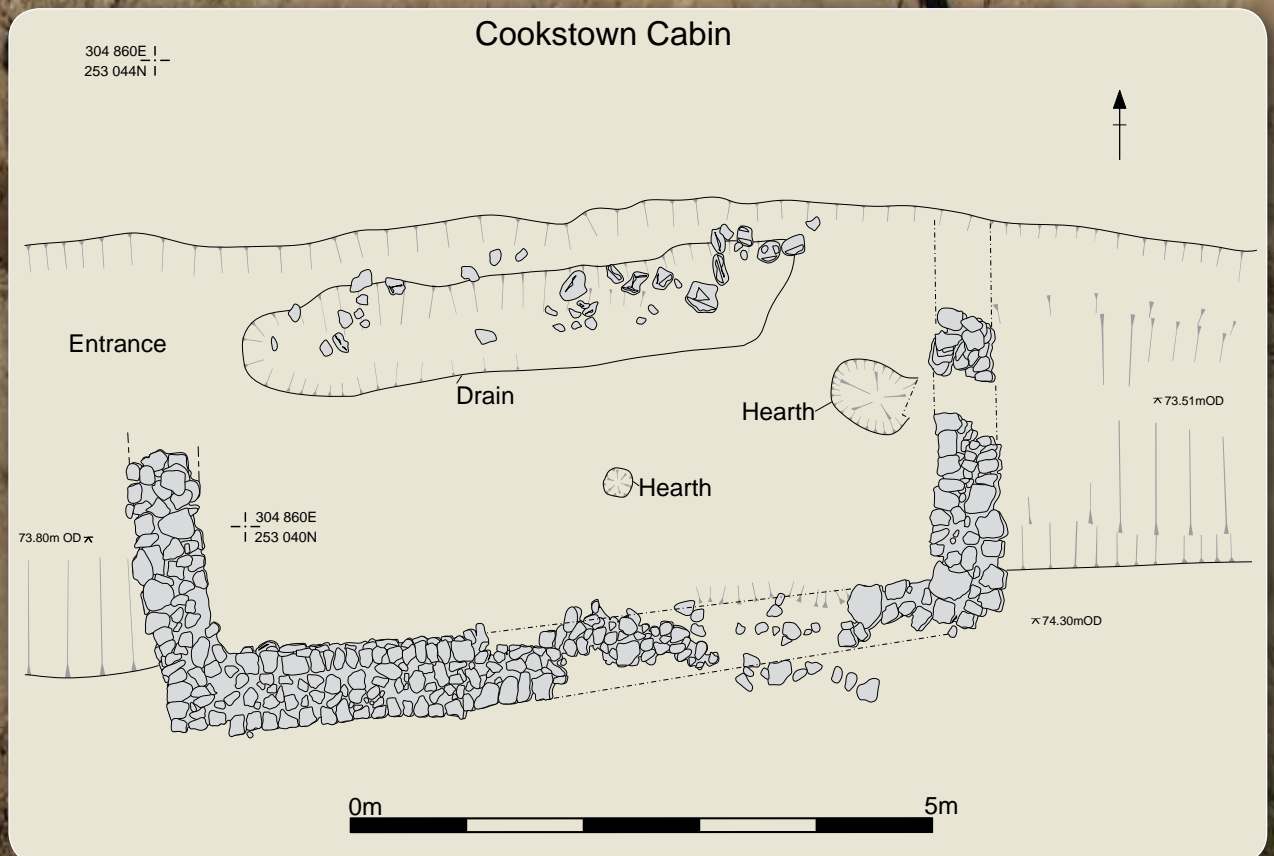


Fig. 3: Plan of cottier's cabin. (CRDS Ltd)

Team Effort on the N8

Cashel – Mitchelstown

Margaret Gowen, director of Margaret Gowen & Co. Ltd, reports on the success of the first Early Contractor Involvement road scheme.

The Project Structure

As archaeological excavation draws to a conclusion on this scheme, the review of the results is taking place against the backdrop of the project's unique Early Contractor Involvement (ECI) contract structure. Essentially a 'design and build' contract, ECI seeks to achieve efficiency and cost management from design stage through to construction. From this archaeologist's experience, the integration between the client, the NRA/South Tipperary County Council, the designers, multi-disciplinary consultants and builders provided an opportunity for an unusually well-informed progression through all aspects of route assessment and Environmental Impact Assessment (EIA) and a level of integrated project management that allowed archaeological resolution to be planned in partnership with the contractors. Early presentation of archaeological information (aerial survey, full field inspection, full geophysical survey and test excavation of over 60% of the 41 km route) facilitated a risk-assessment process that provided all concerned with the confidence to consider a construction programme that could progress rapidly from the grant of approval for the scheme in December 2005 to commencement of construction in March 2006. Notably, the project had no large, 'show-stopper' archaeological sites along the tested portion of the route. As a consequence, the archaeological resolution works took place hand-in-hand with the project's Phase 1 earthworks.

The benefits of integration have been considerable for all concerned. The project has seen unique programme acceleration and most of the archaeological excavation is now nearing successful completion, ahead of schedule. This early completion is in no small part due to the way in which the archaeological teams were assisted and resourced on the civil works side by the contractors, Roadbridge-Sisk, and by the significant support on the paperwork and fieldwork side provided by the local authority project archaeologist Richard O'Brien and the assistant project archaeologist Mairead McLaughlin, who ensured the timely receipt of Ministerial Directions from the National Monuments Section of the Department of the Environment, Heritage and Local Government. (All archaeological works on approved road schemes must be sanctioned by the Minister for the Environment, Heritage and Local Government, in consultation with the National Museum of Ireland and the National Monuments Section, through the issuing of Ministerial Directions.) Attention to communications on the ground and at project management level enabled an approach that 'placed' the archaeological teams under excavation directors (Bernice Molloy, Melanie McQuade, Colm Moriarty and Martin Doody) in the locations most urgently required for the commencement of the earthworks programme.

Fig. 1: Mould pieces for making a knife or dagger, from Ballylegan.





Photos: Margaret Gowen & Co. Ltd

Fig. 2: Excavation of burial urn at Shanballyduff.



Fig. 4: Smoothing stone from Ballylegan.

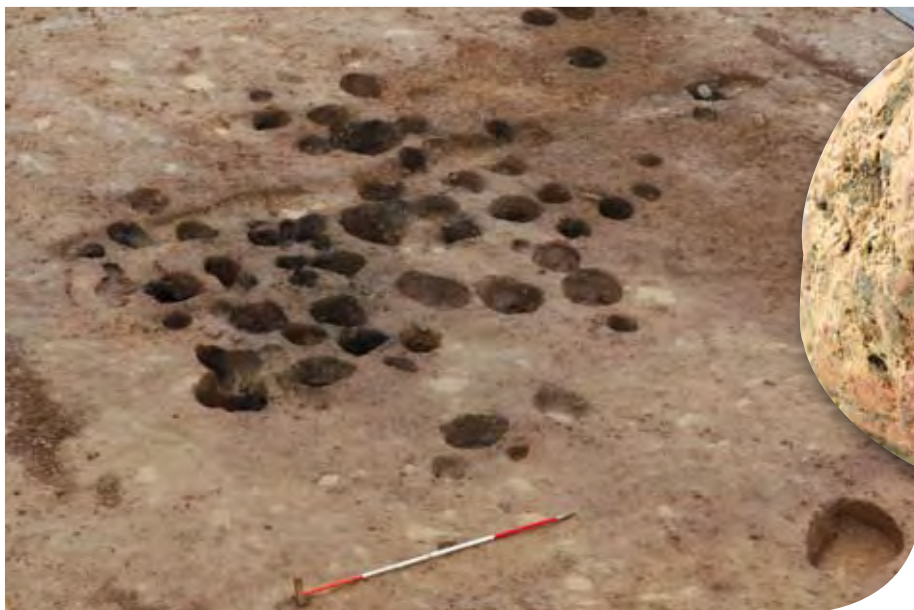


Fig. 3: Unenclosed cremation pit cemetery at Templenoe.



Fig 5: Possible ceramic macehead from Knockgraffon.

The Route

The 41 km N8 Cashel–Mitchelstown route reaches across two different landscapes. From the north it runs through rolling agricultural limestone lowlands from Cashel to Cahir, taking in a portion of the N24 that is being realigned, east of Cahir. This portion of the N24 route runs through undulating land, cut through by shallow north–south valleys. Having crossed the River Suir, the N8 travels towards Mitchelstown along very flat, sometimes poorly drained land below the break in slope of the great Galtee Mountains block. Armed with a significant prior knowledge of the route and its archaeology from route selection to Environmental Impact Statement (EIS) to the test excavation (which was undertaken by the directors responsible for resolution), the project focused on the wider landscape context of the route and the known archaeological sites in the Record of Monuments and Places (compiled by the State archaeological service) adjacent to it. At the outset of the resolution project this

approach suggested that a landscape-focused project design might best serve the results. The approach was supported by the timely publication of the North Munster Project by Dr Eoin Grogan and the imminent publication of another Discovery Programme project, the Ballhoura Hills Project by Martin Doody. Furthermore, a landscape-focused approach to the analysis of the many sites excavated during the Gas Pipeline to the West 2002 project has been completed successfully under the editorship of Dr Grogan.

The Archaeology

The results of testing on over 60% of the route (Cashel–Cahir/the N24 and Cahir–Tincurry) indicated that the majority of archaeological sites (70) were likely to be prehistoric in origin and could be Bronze Age in date. Influenced by shallow karst limestone bedrock, only poor geophysics definition was available for the portion of the route from Tincurry to Mitchelstown, but drawing on the research of the

Discovery Programme, the proximity of sites like Curraghatoor and the results of the Mitchelstown bypass archaeological project, it was supposed that the south-facing slopes of the Galtee block could be quite rich in prehistoric archaeological sites. This has been proven not to be the case, however, with only 20 features and sites revealed in recent testing, some of which are very ephemeral in nature. The testing also revealed that the topsoil is extremely thin and is a very poor (sometimes improved) peaty podzol, suggesting that environmental factors are likely to have influenced the sparse archaeological presence along the route in this location. Even at this early stage—and without the paleoenvironmental analysis that will be undertaken in time—it seems likely that the area was covered in dense primeval scrub woodland.

Excavation of the sites to the north of the Galtee block and along the N24 revealed an array of settlement (roundhouses/structures and burnt mounds), burial (unmarked cemeteries and ring-ditched enclosures) and ritual activity (hengiform(?) post-circles enclosing backfilled pits). The excavated sites date from the late Neolithic period through to the later Bronze Age together with one well-presented Iron Age ring-barrow, one early medieval settlement site (an enclosed kiln and associated rectangular structure) and some limited evidence for medieval land use and settlement activity. The prehistoric sites, without exception, were disturbed, but their plan form survived remarkably well in most instances. Individually some of the sites may not be exceptional, nor were they artefact rich, but some have produced a number of unusual artefacts, and overall the project has yielded a range of ceramics dating from the Neolithic through to the later Bronze Age.

The greatest interest was generated by the position and relationships these sites have with one another and with the landscape. The post-excavation analysis will incorporate a significant emphasis on the landscape and topographic context, site location and distribution and the chronology and inter-relationships of the sites revealed. Intensive control survey and topographic survey, undertaken where appropriate, can be ‘dovetailed’ with the road designers’ detailed contour surveys of the route corridor and, from there, back to base mapping.

To date, focal areas of archaeological activity between Cashel and Cahir can be identified at a number of locations. At Shanballyduff a number of sites with burnt mound activity were revealed close to a site with an urn burial (Fig. 2), which had a decorated rim and much of its cremation deposit surviving. It was found along with two unmarked cremation pits. At Templenoe (Fig. 3) an unenclosed cremation pit cemetery of 74 unmarked pits was found and is remarkably similar to one excavated at Killoran, Lisheen, Co. Tipperary. Not far from the site were two further sites that provided both structural and burial evidence, one yielding a fragment of a Food Vessel pot (a type of Bronze Age funerary pottery). At Cloghabreedy and Knockgraffon a range of sites was revealed that includes two circular enclosures of posts enclosing backfilled pits. No finds of any sort were forthcoming from these pits, apart from a very tiny, barbed-and-tanged, flint arrowhead (Fig. 6). At Caherabbey investigation of an area of burnt material and post-holes revealed in testing eventually uncovered two well-preserved, round structures, one of which may be a workshop. The structures are notable for the depth and content of their discontinuous circular foundation slots, which are characterised by fill with quite large packing stones. A copper-alloy, ring-type object was retrieved from one of the structures, which (at this early stage) may suggest a workshop rather than domestic function. At Lissava a remarkable burnt mound site revealed two circular settings of very large post-holes with packing stones, which to some extent ‘enclose’ the mound material. Later settlement evidence occurred at Marlhill, where a fine copper-alloy pin with a ‘watch-winder’ head was found in association with an enclosed corn-drying kiln. Found on one side of the road at a point where a bridge structure is to be placed, it was found

in association with a rectangular house(?) structure and associated pits and settlement activity. At Dogstown, on the site where the Food Vessel was found, there was also evidence for land division associated with a nearby deserted medieval village, and at Loughfeedora, near Cashel, a 19th-century weaver’s cottage was revealed.

On the south-west-facing slopes along the new N24 road alignment clusters of Bronze Age sites occurred at Killemlly, Suttonrath and Ballylegan, including circular structures, some in association with ring-ditches, and an assortment of pits and other settlement activity.

Results from the stretch between Cahir and Cashel extend the trend of Bronze Age activity noted elsewhere, but the sites are more sparsely distributed. Several well-preserved burnt mounds were revealed, one of which is overlooked by a ring-ditch with associated cremation burial.

Assisted by prehistoric pottery experts Dr Eoin Grogan and Helen Roche, early examination of the ceramics confirmed a date range from the late Neolithic through to the later Bronze Age, with Beaker, Food Vessel, Urn and coarse later Bronze Age pottery represented. Only three flint artefacts were recovered (Fig. 6). All are Early Bronze Age in date and very finely made. One, a tanged arrowhead, which is very tiny and is burnt, was recovered during processing of one of the Templenoe cremation deposits. A sieving station has been set up on the project and processing of cremation deposits for the extraction of bone and environmental material has already commenced. The burnt state of the arrowhead is notable because it is possibly the result of being embedded in the body of the deceased at the time of cremation. This, of course, suggests in turn that it might have been the cause of death of the individual in question.

Another very enigmatic find is a highly fired, perforated ceramic object found at the Knockgraffon ‘hengiform’ post-circle site, which is shaped like a macehead and is of similar size (Fig. 5). The object appears not to be a net or loom weight; there is no wear in or around the perforation. If it is a ceramic macehead, it clearly had a ceremonial function. Helen Roche mentioned comparative finds of perforated ceramic objects from Bronze Age ritual contexts, notably at Knowth, Co. Meath, and other sites she has studied. Further analysis and comparative study is obviously needed before a confident identification can be made, but we may have identified a new artefact type, which would be a hugely satisfying outcome. Other finds include a finely made spindle whorl decorated with concentric circles and recovered from what appears to be a Bronze Age context. On a similar site nearby a smoothing stone (Fig. 4) was recovered along with fired clay, which appears to be related to metalworking, and fragments of a mould for a knife or dagger (Fig. 1).

Fieldwork is still ongoing, but these early days are nonetheless exciting, even though very little detailed analysis has taken place. The findings have presented a very particular and interesting picture that will adapt well to the landscape-focused project design and will undoubtedly yield much further definition and information as the post-excavation project progresses.

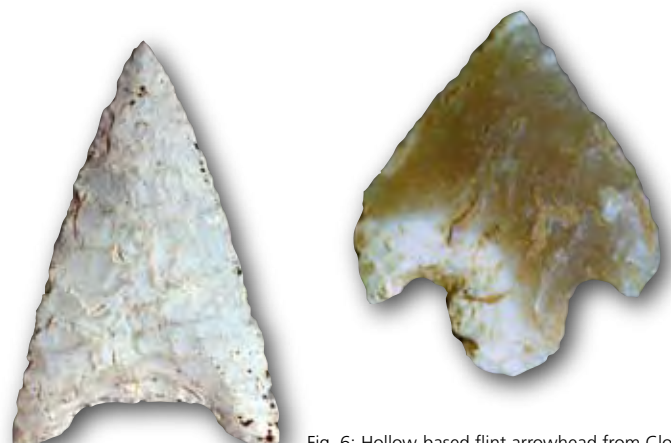


Fig. 6: Hollow-based flint arrowhead from Clonmore North and barbed-and-tanged arrowhead from Knockgraffon.

a SCHOOL TOUR with a *difference*



by Richard O'Brien

Richard O'Brien, project archaeologist with Tramore House Regional Design Office, reports on a primary school tour to a site on the N8 Cashel Bypass.

In May 2003 excavations on the N8 Cashel Bypass were in full swing, with over 100 archaeologists on-site working busily. New sites were being discovered every day, stretching back to the very earliest times in Cashel's history—right back, in fact, to the early Stone Age almost 9,000 years ago.

In the middle of all this the RTÉ television programme *Ecoeye*, led by well-known presenter Duncan Stewart, recorded some of the digs and this programme aired in January 2004. *Ecoeye* spent all day in Cashel, starting at the Rock of Cashel where local historian John Knightly outlined Cashel's rich and varied history. The crew then visited various excavations and recorded interviews with the archaeologists. The highlight of the day was the visit of the third and fourth classes from nearby Loughmore National School, who were embarking on their first ever visit to a 'live' dig. One of the schoolchildren and her teacher have kindly written accounts of what followed.



Fig. 1: Carefully now—excavation of a cremation burial at Monadreela, under watch. (Richard O'Brien)

Following the Golden Road: a Teacher's Perspective

Mary O'Brien, a national schoolteacher at Loughmore National School, offers her account of the school tour.

On Thursday, 29 May 2003 third and fourth classes—boys and girls—from Loughmore National School, Co. Tipperary, had the opportunity of visiting an archaeological dig in Cashel. I accompanied them on this exciting adventure, along with special needs assistant Bridget Cashin.

Excavations were being carried out in fields near the Golden Road in preparation for the Cashel Bypass. The children were led around the excavation by archaeologist Liam Hackett. They saw first-hand the archaeologists at work, the tools they used and the types of excavation

being carried out. They had an opportunity to observe and question Liam about the work. Archaeologist Joanne O'Brien showed them artefacts, including animal bones, that had been found during the excavation work.

The children met Duncan Stewart, presenter of the RTÉ programme *Ecoeye*. The RTÉ crew filmed the children listening to Liam and asking him questions. It was a very exciting day for the children: to see an archaeological dig up close, meet the archaeologists, observe the artefacts found *and* meet Duncan Stewart and be filmed by RTÉ—all in one day!

Fig. 2: Recording a house inside a ringfort—new discoveries at Hughes'-Lot East. (Richard O'Brien)





Fig. 3: Getting down and dirty—Bronze Age timber under a *fulacht fiadh* in Owen's and Bigg's-Lot. (Richard O'Brien)

My name is Caitríona Maher
 I went to Cashel with 3rd and 4th
 to see the dig. The men and
 women were digging. I saw Duncan
 Stewart. The R.T.E camera crew were
 there. I got to ask a question. I asked
 "Did you find anything today?" It was a
 fun day.

The next day was very wet in Loughmore. The children were surprised to learn that archaeologists would be working in Cashel, even if it was as wet as that! The class made a large 'Thank You' card with greetings for the archaeologists. They painted their favourite aspect from the dig and spoke about their paintings. Oral work involved the game, 'I went to the dig and I saw ...'. The children composed a class poem based on the dig; individual poems, reports, and illustrations about the day were also completed.

I video-taped the *Ecoeye* programme based on the archaeological dig. The class were delighted to see themselves and their classmates on television. The video is now in the classroom for posterity.

Many thanks to project archaeologist Richard O'Brien, North Tipperary County Council and all those in the NRA for making our visit to the dig so enjoyable and informative.

Prehistoric settlement on the M8 Rathcormac/ Fermoy Bypass

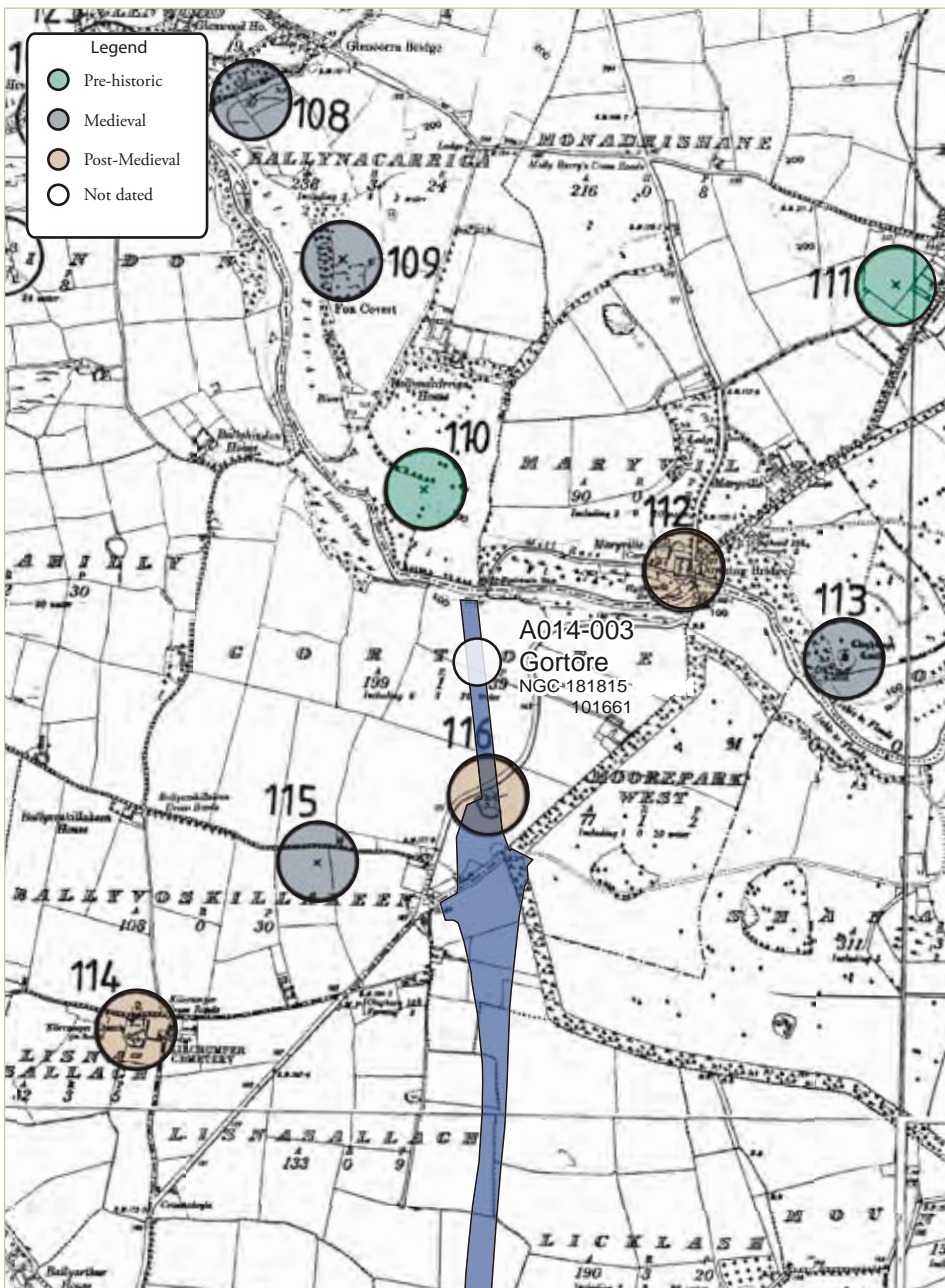


Fig. 1: Extract from the Record of Monuments and Places map showing the site at Gortore in relation to known sites in the area. (Eachtra Archaeological Projects, based on the Ordnance Survey Ireland map)

Jacinta Kiely, excavation director and partner in Eachtra Archaeological Projects, describes prehistoric remains from Gortore, Co. Cork, including one of the oldest houses in the county.

Introduction

Following a programme of testing and excavation on the route of the M8 Rathcormac/Fermoy Bypass, Eachtra Archaeological Projects was appointed by the PPP (Private Public Partnership) company Direct Route (Fermoy) Construction Ltd to monitor internal works within a stretch of over 1 km of untested roadtake and to monitor external works associated with road construction. In the course of these works a number of archaeological sites were recorded and excavated in the townlands of Ballybrowney, Ballyoran Bog, Gortore, Fermoy and Scartbarry. An Early Neolithic house site and an Early Bronze Age pit were excavated at Gortore in April 2005.

Site Location

The M8 Rathcormac/Fermoy Bypass is c. 17.5 km long. It will extend from the northern end of the new N8 Glanmire–Watergrasshill road, passing west of Rathcormac and east of Fermoy, towards its convergence with the existing N8 Cork–Dublin road at Moorepark West, to the north. The site at Gortore lies on a north-facing slope at an altitude of 30 m above sea level (Fig. 1). It is situated c. 165 m south of the River Funshion. The Funshion rises in Galtymore Mountain and drains into the River Blackwater, south of Kilworth.



Fig. 2: The Neolithic house excavated in Area II. (Eachtra Archaeological Projects)

The site was divided into two areas: in Area I an Early Bronze Age pit was discovered; in Area II, 70 m to the north, an Early Neolithic house and associated features were excavated, along with a post-medieval agricultural ditch. This area is known for its rich agricultural soils and this type of land, with good potential for arable farming, is a typical location for an Early Neolithic house.

Phase I

The earliest phase of activity at the site was the construction of a rectangular building (Fig. 2) in the Early Neolithic period. The internal dimensions of the house were over 6 m in length by 5 m in width, occupying an area of c. 33 m². The structure was defined by main posts set within foundation trenches. Survival of the foundation trenches was discontinuous, perhaps because the archaeological features were disturbed as a result of modern agriculture. Charcoal associated with the house has been radiocarbon-dated by Queen's University, Belfast, to 3928–3655 BC.

The walls

The walls of the building were represented by foundation trenches. Two post-holes packed with clay and stones were located in the eastern and western wall trenches, and the western corner of the southern wall was defined by two post-holes. Twenty-six pottery sherds were recovered from the eastern wall trench and a flint flake, weed seeds and cereal grains were found within a post-hole connecting the southern and western trenches.

Internal features

A probable floor surface comprised of a thin, compacted layer of redeposited clay extended into the centre of the structure and contained charcoal, a fragment of hazelnut shell and a flint flake. A large post-hole south of this may mark the entrance. A substantial post-hole was located to the north of the clay floor, probably representing a roof support. This was the only potential indicator of internal sub-divisions. No evidence of a hearth was recorded.

External features

Four closely set post-holes and a stake-hole were located c. 4 m to the north-west of the structure, while a post-hole and a possible stake-hole were located 7 m and 5 m respectively to the north of the house. A possible post-hole was also located 2.3 m to the east of the house. Although these features are likely to relate to activity at the house, they do not appear to have served a specific structural function.

Phase II

The next phase of archaeological activity in the area was identified as an Early Bronze Age, stone-lined, circular pit and a possible stake-hole excavated in Area I, 70 m to the south. The pit (Fig. 4) contained five distinct archaeological layers. Twenty-five pieces of worked flint and 75 sherds of pottery were recovered from one of the layers. The flint artefacts included flakes, cores, blade fragments and split pebble fragments. The bulk of this assemblage probably represented one short episode of flint knapping, using small flint pebbles as a raw material. The majority of the worked flints show signs of burning, but there is no evidence that this occurred prior to knapping and it is likely that these represent unwanted knapping residue that was discarded in a fire. No evidence of *in situ* burning was recorded in or around the pit, which indicates that the burnt material was discarded from a hearth into the pit. Charcoal from the pit has been radiocarbon-dated by Queen's University, Belfast, to 2458–2151 BC.

PHASE III

The final phase of archaeological activity at the site was represented by a probable post-medieval field boundary. Two clay pipe stems were recovered from the base of the ditch.

Plant remains

Environmental archaeologist Penny Johnston examined the plant remains from the site. Nine samples were taken from the Early Neolithic house, which included hazelnut shell fragments, wheat grains, cereals, weed seeds, apple/pear pips and the charred endocarp (core and flesh) of an apple. The recovery of apple endocarp and hazelnut fragments demonstrates the way in which the inhabitants exploited the resources of the surrounding countryside.

Three samples were taken from the Early Bronze Age pit. The plant remains from the pit included hazelnut shell fragments, barley grains, wheat grains, cereal grains, apple/pear pips, possible flax bolls and weed seeds.

Pottery

Prehistoric pottery experts Helen Roche and Dr Eoin Grogan examined a total of 113 pottery sherds from the site. Two Early Neolithic carinated bowls (Vessels 1 & 2) were recovered from the house. Vessel 1, a surface find within the building, is represented by an out-turned, rounded rim sherd displaying a short neck. Vessel 2 is a fine, thin-walled carinated bowl. The thin fabric is of poor

quality and crumbly, with a high content of quartzite and mica inclusions. The remains of this vessel were recovered from slot-trenches along the east wall and at the south-east corner of the house.

Sherds representing three Beaker vessels (Vessels 3–5) were uncovered within the Early Bronze Age pit. Vessels 3 and 4 are fine Beakers and can be classified as European Bell Beakers, or Wessex/Middle Rhine types. The domestic Beaker (Vessel 5), with its flat, open rim, is larger in size than Vessels 3 and 4. The decoration on Vessel 5 consists of an overall herringbone motif arranged in horizontal rows, which is atypical on Irish domestic Beakers. The presence of both fine and domestic Beakers have been widely recorded in Ireland, but occur on only a limited number of sites in south-west Ireland.

Flint artefacts

The flint assemblage consisted of 47 pieces and was examined by flint expert Farina Stevneke. The majority of these finds were recovered from the Early Bronze Age pit (Fig. 3). Most of the worked flints have evidence of exposure to intense heat. Five flakes were recovered from the Neolithic house. Two of these came from the topsoil, one from the fill of the slot-trench at the south-west corner of the house, one from the possible floor and one from a burnt spread to the north of the house.

Conclusion

The excavation at the M8 Rathcormac/Fermoy Bypass revealed the remains of a disturbed rectangular house with a possible entrance to the south, a small, intact internal floor surface and one post-hole, which was interpreted as an internal roof support. There were no definite indications of internal sub-divisions and no evidence of a hearth. Entrances to rectangular Neolithic houses are often located off-centre in one of the end walls and usually to the right, but while the possible entrance at Gortore is off-centre,



Fig. 3: A selection of flint pebbles, flakes and blades from the Early Bronze Age pit in Area I. (Eachtra Archaeological Projects)



Fig. 4: Early Bronze Age pit with stone packing excavated in Area I. (Eachtra Archaeological Projects)

it is situated towards the left instead of the right. The presence of several external post-holes immediately outside the house walls suggests that the roof extended beyond the walls and was supported by external uprights. These may mirror other examples, such as Tankardstown South, Co. Limerick, where the roof ridgepole extended beyond the house walls at the gable end, providing shelter for an exposed wall.

A number of different architectural traditions are evident in the record of Irish Neolithic houses, including plank-built houses, where split uprights were placed edge-to-edge in foundation trenches, and post-framed houses, where the walls were made up of a single or double row of posts. At Kishoge, Co. Dublin, good preservation of structural materials, including planks burnt *in situ*, enabled the identification of four different construction methods within the same structure: linear plank walls, staggered plank walls retaining a wall core, horizontal planking held in position by upright posts and post-built walls. At Gortore, although preservation did not match that at Kishoge, it is possible that a combination of construction techniques was also used. Foundation trenches were excavated where there was no evidence for uprights or large post-holes suggesting plank-built walls. In other areas it was clear that post-holes had been dug into the foundations and these may represent either post-built walls or planks that were supported by upright posts. The house at Gortore is one of the smaller examples of Neolithic rectangular houses that have been excavated and, in terms of size, it compares closely to excavated examples at Enagh, Co. Derry, Kishoge, Co. Dublin, Ballynagilly, Co. Tyrone, Barnagore, Co. Cork, Coolfore 2, Co. Louth, Corbally II 5 & 6, Co. Kildare, Tankardstown 1 and Lough Gur, Co. Limerick.

The assemblage of flint artefacts from the Early Neolithic part of the site was small and contained no finds characteristic of the period. In fact, this is not necessarily unusual for a small structure; the assemblages from sites such as Kishoge and Enagh were also small. The plant remains included the typical range of Early Neolithic cereals, with emmer wheat (*Triticum dicoccum*) being the main type identified—similar results have been retrieved from several other Neolithic house sites. The most unusual aspect of the assemblage was the retrieval of fragments of charred apple; the only known Irish parallels were at Tankardstown South, Co. Limerick.

Despite the distance between the Neolithic house and the Bronze Age pit, there were no discernible differences in either the plant remains or the flint artefacts retrieved from both areas. The Early Bronze Age date from the pit therefore demonstrates an element of continuity in the area over an extended period of time. The flint-knapping technology showed evidence that there had been repeated use of small cores and pebbles. The use of small pebbles for flint knapping at both areas may indicate a limited supply of suitable raw materials. The Early Neolithic and the Early Bronze Age plant remains included emmer wheat and barley. Other Neolithic house sites have also been located close to evidence for later activity, e.g. at Kishoge, Co. Dublin, there was a pit external to the Neolithic house that was dated to the Middle Bronze Age. These sites provide evidence for the continued presence of people in these areas of rich agricultural potential after the houses were abandoned.

Recent infrastructural development has increased the amount and the geographic distribution of Neolithic house sites in Ireland, but this site is important on a regional level given that the only other excavated example of this site type in County Cork is at Barnagore (discovered on the route of the N22 Ballincollig Bypass). Both of these Cork examples produced similar radiocarbon results—3940–3620 BC at Barnagore and 3928–3655 BC from Gortore—and they represent the oldest known houses in the county.

Megaloceros giganteus on the loose



Fig. 1: Distribution of Giant Irish Deer find spots in Ireland. (Eachtra Archaeological Projects)



Fig. 2: Chop-marked antler from Ballyoran Bog. (Eachtra Archaeological Projects)

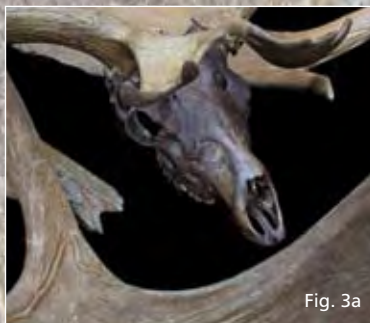



Fig. 3a



Fig. 3b



Fig. 4: Wooden trackway/platform. (Eachtra Archaeological Projects)



Penny Johnston, Bernice Kelly and John Tierney of Eachtra Archaeological Projects report on the discovery of Giant Irish Deer on the M8 Rathcormac/Fermoy Bypass.

In August 2004 skeletal remains of Giant Irish Deer (*Megaloceros giganteus*) were discovered on the route of the M8 Rathcormac/Fermoy Bypass in lacustrine (lake) deposits approximately 1–1.5 m beneath peatlands at Ballyoran Bog, Co. Cork. This is a small fen bog that formed in a narrow pass in the foothills of the Nagles Mountains. The deer remains included two complete skulls, significant portions of two more skulls, three almost complete antlers and four post-cranial bones (bones situated behind the skull). Together these represented at least six individual Giant Deer, all adult males.

The recovery of several deer skeletons in one location is relatively common: over 100 individuals have been found at the most famous find spot, in Ballybetagh Bog, Co. Dublin. Most examples of Giant Irish Deer from lake deposits beneath peat bogs date to the period between 11,750 BP (Before Present) and 10,950 BP and the Ballyoran Bog examples fit into this date range; antler from the collection had a radiocarbon age of 11,139–10,962 BC (11,124 ± 61 BP).

Distribution

There is a concentration of Giant Irish Deer find spots in the Limerick region and the recovery of skeletal remains from Ballyoran Bog extends this distribution pattern slightly. The distribution map of Giant Irish Deer finds indicates a range associated with fertile soils, and it is suggested that access to suitable grazing was crucial to the survival of the deer populations. Current theories

suggest that c. 11,000 BP there was a stadial (an even colder period during an ice age) that affected climate and vegetation and depleted the deer's food resources, eventually leading to their extinction.

Worked Antler

While the deer pre-dated the earliest human settlement of Ireland by several thousand years (the earliest recorded sites from the area are Mesolithic flint scatters c. 15 km away), their remains were later found and used by humans. At Ballyoran Bog a fragment of Giant Irish Deer antler with a chop-marked edge was found near the interface between the peat and underlying clays. The chopped antler was found at the very lowest layer of a deposit of brushwood, located several metres away from the Giant Irish Deer find spot, which occurred 1.5 m below the bog surface and directly above the grey clay underlying the peat. The wood was deposited in the context of growing fen peat and it was interpreted as a possible trackway, or platform.

Wood

Wood samples from the possible trackway/platform were identified as alder (*Alnus glutinosa*) and willow/poplar (*Salix/Populus*), both of which are trees that generally grow in damp places and can tolerate intermittent waterlogging. The wood probably grew at the site, or very close by. Radiocarbon dates from the wood were returned as 8280–7965 BC for wood from the lower layers and 3012–2761 BC for the upper layers. These dates are very early, and while the wood in the trackway/platform may have been old natural wood preserved in the bog, the early dates also beg the question of whether the site was formed naturally.



Ballyhanna Research Project



Fig. 1: Catriona McKenzie examining skeletal remains from Ballyhanna at the Institute of Technology, Sligo. Inset: Róisín McCarthy conducting analysis. (studiolab.ie)



by Michael MacDonagh

Michael MacDonagh, project archaeologist with Donegal County Council National Roads Design Office, describes the background to an important research initiative.

In late 2003 an archaeological excavation commenced on a site outside Ballyshannon, Co. Donegal, where test excavations a few months earlier had revealed the presence of human bone. The work carried out at Ballyhanna over the next six months by Irish Archaeological Consultancy Ltd led to the discovery of a substantial medieval cemetery and the foundations of a stone building, thought to be the remains of Ballyhanna Church. The last recorded mention of church lands at Ballyhanna was in a 17th-century audit—the Enniskillen Inquisition—but since that date its location had been lost from local memory. In the 17th century land in Ballyhanna was leased by the ex-military Folliott family, granted to them for services to the Crown.

It may be that it was then that the ruined church was levelled and its stone used to build the Folliott residence, Rockville House, which was burned out in the 1920s. In the 17th/18th century garden landscaping over the church site would have removed any physical trace of the church and its graveyard. The general passage of time and the specific 19th-century decimation of Ballyshannon through Famine mortality and emigration would have removed the last vestige of any folkloric knowledge of the church's existence. This was the case until 2004, when the church was rediscovered during the works connected with the N15 Bundoran–Ballyshannon Bypass.

The landscape of Ballyhanna in the 13th century would have been very different from what we see today. The church and graveyard would have sat close to the southern bank of the River Erne. That wide watercourse, cascading down from the upper reaches of Lough Erne, served as a formidable boundary. A ford of the river at Ballyshannon was of huge strategic importance throughout history, and indeed back into prehistory. Located close to the tumbling rapids of St Cathaleen Falls, the ford of Atha Seanaig offered the only safe passage across the Erne at Ballyshannon until the 16th-



century bridging of the river. Twentieth-century construction of the hydroelectric plant utterly changed the Ballyshannon/Erne landscape. Both falls and ford were removed and the Erne was channeled into a deep, narrow, rock-cut channel, tailracing its way from the dam to the sea. That work, undertaken in the 1940s, unearthed a number of Bronze Age swords, retrieved by Lucius J Emerson of Ballyshannon. These weapons suggest that control of the fording point was fought over long before the 12th century when the O'Donnells, the O'Connors and, in subsequent centuries, the British and others recognised this natural link between Connacht and Ulster and struggled to maintain control of it.

We know that during, or shortly after, the reign of Edward I (1272–1307), bodies were being interred at Ballyhanna graveyard on the banks of the Erne. A silver penny found with one of the burials is evidence of this. Other coins from the reign of Henry IV, in the early 15th century, indicate the graveyard, if not the church itself, was still in use at that time. A fragment of a bone comb, a small brass bell, pottery and beads—sentimental treasures left in graves by loved ones—discovered with a number of the burials all confirm that the

burial ground was in use between the 13th and 15th centuries. Men, women and children were buried at Ballyhanna, laid to rest in a sub-circular graveyard that measured no more than 40 m in diameter. Most were buried in the Christian style, that is laid supine (on their backs) in shallow graves set around the church, with their bodies set east–west. Over 1,000 burials were recorded within this small area during the excavation. Such density of burial led to the severe disturbance of many earlier burials during the digging of later graves, leaving many of them disturbed or cut through. Fortunately, due to the favourable soil conditions on site, the skeletal remains, though in cases disturbed, were extremely well preserved.

Following the excavation it was clear that the large amount of skeletal material, with its excellent state of preservation, could provide a wealth of information on the lifestyle, diets and causes of illness and death within a medieval Irish population. The science of osteoarchaeology (analysing skeletal remains) enables us to draw this information from the dead. At an early stage some fascinating information on the Ballyhanna burials had already come to light, such as illnesses and diseases displayed on skeletons and the traumatic

ending to one man's life: an iron arrowhead embedded deep in his spine. Accordingly, a cross-border research team was established with the aim of identifying the areas of scientific research that would glean the most information from the Ballyhanna material. The result of that collaboration is the Ballyhanna Research Project, funded by the NRA through Donegal County Council.

The project's academic partners are Queen's University, Belfast (QUB), and Institute of Technology, Sligo (ITS). Over the next three years, sharing facilities, expertise and resources, these two institutions will produce three significant bodies of research on the Ballyhanna material through two Masters of Science (ITS) and a doctorate in osteoarchaeology (QUB). In addition, QUB will carry out specific osteoarchaeological analysis of the juvenile skeletons, with specialist assistance and management of the project provided by an osteoarchaeological research assistant.

The results of the research project will be published upon its completion and it is hoped that this multi-disciplinary approach will add greatly to our understanding of medieval Ballyshannon and, more generally, of medieval Ireland.

The N15 Bundoran–Ballyshannon Bypass opened in April 2006 and as you drive off it at the Ballyshannon exit, heading north-east, a small parcel of land to the west marks the location of Ballyhanna Church. Its conserved foundations are now adjacent to the junction, which was redesigned to ensure the church would not be lost again.

To the memory of Mr Lucius J Emerson (RIP), Ballyshannon, who graced the excavation with his enthusiasm and energy and became a friend of all involved.



Photos: studiolab.ie

In Brief OSTEOARCHAEOLOGY

Osteoarchaeology is loosely defined as the specialised study of human behaviour through skeletal remains. These are not simply 'dry bone' but represent the end product of a complex series of interactions, some genetic, some environmental, that record bio-cultural information about life history. As such, they tend to inform about the life of an individual rather than the manner of their death. Osteological analysis can provide us with information about the biological sex of an individual, their age at death, how tall and well-built they were, what diseases they may have suffered from, their ancestry and the geographical region of their upbringing and, very rarely, the manner or cause of their death.

Patrick Randolph-Quinney, osteoarchaeologist, ODK Resources.



The Ballyhanna Research Project at Queen's University, Belfast

Eileen Murphy, lecturer in palaeoecology, and Colm Donnelly, manager for the Centre for Archaeological Fieldwork, School of Geography, Archaeology and Palaeoecology, describes QUB's involvement in the project.

The Queen's University, Belfast (QUB), component of the Ballyhanna Research Project involves the osteological and palaeopathological analysis of the human skeletal remains recovered during the excavation. The results of this skeletal analysis will provide a thorough understanding of the health of the Ballyhanna adults. A biocultural approach will be adopted, meaning the skeletal data will be studied in combination with the available archaeological and documentary evidence for the period. This multi-disciplinary approach will allow a thorough reconstruction of the health and lifestyles of the Ballyhanna people. Furthermore, the Ballyhanna discoveries will be compared to osteological information obtained from other Irish and British medieval populations to place our understanding of their lives and deaths within a broader medieval context.

This important programme will be carried out under the supervision of Dr Eileen Murphy and Dr Colm Donnelly. Ms Catriona McKenzie MSc has been appointed to undertake doctoral research on the adult remains, and she will determine each person's age-at-death, sex and stature, and any evidence for past diseases or injuries. Dr Murphy will study the children's skeletons and the information retrieved will undoubtedly provide new insights into the lives and deaths of Irish children in the past. Finally, Ms Róisín McCarthy MA has been appointed to assist with the management of the project and to help with some aspects of the osteological analysis.

One extremely interesting skeleton has already come to light. Skeleton 331, a 25–35-year-old adult male, displayed the genetic condition diaphyseal aclasia, or hereditary multiple exostoses. Although this condition is quite common today, there are only around six cases known from the archaeological record worldwide and the Ballyhanna example would appear to be the first archaeological case to have been discovered in Ireland. The condition probably first appeared when the individual was a child and would have got progressively more debilitating as he got older. Numerous bony projections were present at the ends of his long bones, particularly those of his lower legs, which had become fused together. He would have been knock-kneed and would have had limited use of his left arm and left ankle. In addition, he would have suffered pain and tenderness at the sites of the abnormal bone growths. As a physically disabled individual he would probably have been at quite a major disadvantage compared to other members of his contemporary society, but we might hope that he was cared for by his family and friends and that he was a valued member of the community in which he lived.



Multi-element Analysis of *Human Bone*



Ted McGowan, lecturer in the School of Science, Institute of Technology, Sligo, describes one aspect of the analysis being conducted.

Trace element concentrations in archaeological bone facilitate insights into the dietary, social, environmental and toxicological influences on ancient populations. This MSc research being conducted on the Ballyhanna skeletal assemblage will aim to analyse samples and discover what they can tell us about the people who lived and died in this medieval community. Representative samples of male, female and child bones from the Ballyhanna population will be studied, and it is hoped this will lead to information that will supplement the other areas of research. The MSc research project is being carried out by Ms Tasneem Bashir MSc, based in the Institute of Technology, Sligo, and led by Dr Ted McGowan.

Strontium, calcium, barium, magnesium, manganese, iron, zinc and copper concentrations in bone have all been found to correlate with diet. A diet rich in seafood and marine resources generally tends to show high levels of strontium and magnesium, but low barium concentrations; more terrestrial diets generally result in low concentrations of strontium and magnesium, but high concentrations of barium. A herbivorous diet is high in strontium, barium and magnesium, but low in concentrations of zinc, while the opposite applies to a carnivorous diet. This research will also search for toxicologically significant elements, such as lead and cadmium. Elevated concentrations of these elements may reflect specific environmental and health indicators within an archaeological population.

A variety of analytical techniques will be employed to conduct and complete this analysis. These will include Graphite Furnace Atomic Absorption Spectrometry, Flame Atomic Absorption Spectrometry, Flame Atomic Emission Spectrometry and the modern Multi-element Atomic Spectrometry techniques of Inductively Coupled Plasma-Mass Spectroscopy and Inductively Coupled Plasma-Atomic Emission.

Amplification of Ancient DNA and Sex Determination in Human Medieval Skeletal Assemblages

Jeremy Bird, senior lecturer in the School of Science, Institute of Technology, Sligo, describes another aspect of the analysis being conducted.

Determining the sex of pre-adolescent skeletons by standard morphological methods is not possible because these skeletons have little sexual dimorphism, in other words, the skeleton of a young male will not differ substantially from that of a young female. However, a number of studies have demonstrated the importance of DNA analysis for sex identification in pre-adolescent or juvenile skeletons. This element of the research project aims to perform DNA-based sex identification in juvenile assemblages from Ballyhanna. This MSc research is being carried out by Ms Sheila Tierney BSc, based in the Institute of Technology, Sligo, and led by Dr Jeremy Bird.

The advent of the Polymerase Chain Reaction (PCR) in the field of molecular biology has allowed us to detect and analyse the DNA from ancient remains. This can provide a unique tool for archaeologists to investigate issues in society and culture that could not be addressed previously.

This study aims to use PCR to amplify DNA from the amelogenin gene found on the X- and Y-chromosomes. Initially, it will be used on adult skeletons, the sex of which has already been determined by standard morphological means. It will then be applied to a number of juvenile skeletons from Ballyhanna. The DNA amplification is an extremely sensitive form of analysis and can be used in an archaeological and forensic context to identify sex in human remains. It relies on the fact that the amelogenin gene is slightly smaller on the Y-chromosome than the X-chromosome due to the deletion of DNA near the centromere of the Y-chromosome, but not of the X-chromosome. The results of this study will be related to current post-excavation information from the burial site and osteoarchaeological data on the skeletal assemblage.



Showcasing the Finds

Gráinne Leamy, assistant project archaeologist with Donegal County Council National Roads Design Office, previews a forthcoming exhibition of the N15 Bundoran–Ballyshannon Bypass finds.

Archaeological works carried out in advance of the construction of the new 10.5 km-long N15 Bundoran–Ballyshannon Bypass in south Donegal revealed some unexpected discoveries. A range of sites was found, dating from the Neolithic (4000–2500 BC), Bronze Age (2500–500 BC), Iron Age (500 BC–AD 500), medieval (AD 500–1500) and post-medieval (1700 and later) periods. Archaeologists working on the scheme with Irish Archaeological Consultancy Ltd found some ancient sites that were previously unknown, as well as rediscovering the location of sites that had long fallen from memory in the local area. An exhibition of the artefacts found during the excavations opened on 7 December 2006 in Donegal County Museum in Letterkenny. Donegal County Council National Roads Design Office co-ordinated the exhibition in conjunction with Judith McCarthy, curator of the museum, who liaised with the National Museum of Ireland regarding the loan of artefacts.

Artefacts from various sites are on display at the County Museum, including: a British Army issue ‘Brown Bess’ musket dating to around 1800, a large quern-stone and pottery from a 17th-/18th-century house at Rathmore and Finner; flint tools from an area of prehistoric activity at Ballynacarrick; and medieval pottery, glass beads and metal artefacts from the site of a church and cemetery at Ballyhanna.

The exhibition aims to place the artefacts within the scientific context of archaeological excavation and post-excavation analysis, rather than simply presenting a display of finds. In particular, it focuses on the Ballyhanna skeletons. Dr Eileen Murphy of Queen’s University, Belfast, conducted the osteoarchaeological examination of a sample skeleton from the assemblage and assisted Donegal County Museum technical staff in displaying it.

Display panels and photographs have been used to outline the various stages of the N15 Bundoran–Ballyshannon archaeological project, from the Environmental Impact Assessment through to post-excavation analysis. Local schools will be invited to visit the museum and learn about some of the wonderful archaeological sites and artefacts discovered on the N15 project.



Fig. 1: Late 12th-/early 13th-century Anglo-Norman arrowhead. This was found embedded in the spine of one of the skeletons in Ballyhanna cemetery.



Fig. 2: Cross-inscribed strap handle from a medieval everted-rim ware or crannóg ware vessel, found within the foundations of a church at Ballyhanna cemetery.

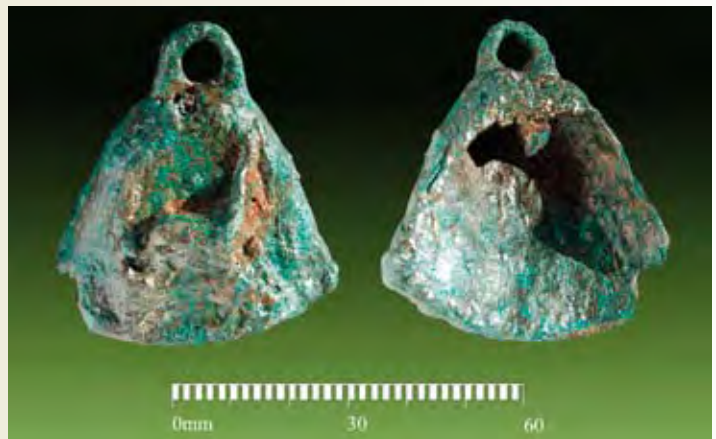


Fig. 3: Medieval copper-alloy bell from Ballyhanna. The bell was probably made locally but was miscast; it is unlikely that it was ever used.



Fig. 4: English silver ‘long cross’ penny of Edward I or II, minted in Canterbury sometime after AD 1302. This coin has been clipped around the edges, an illegal practice that incurred very heavy penalties. Found within grave deposits at Ballyhanna.

From the Euphrates to the Suir:

an Eighth-Century Islamic Coin from Woodstown, Co. Waterford



James Eogan, project archaeologist with Tramore House Regional Design Office, details the remarkable story behind one of the smallest and most exotic objects discovered at Woodstown.

Archaeological test excavations by Ian Russell and a team from Archaeological Consultancy Services Ltd in advance of construction of the proposed N25 Waterford City Bypass uncovered a previously unknown site in Woodstown townland, on the southern bank of the River Suir, which had been used by Viking traders. One of the smallest objects found during the excavation was a fragment of a silver coin decorated with swirling designs and weighing c. 0.3 grammes.

It was immediately recognised as an unusual and exotic find. Initial examination by Mr Michael Kenny of the National Museum of Ireland confirmed its Near Eastern origin, however it was only after examination of photographs of the coin by Mr Gert Rispling, Curator of Islamic Coins in the Royal Coin Cabinet, Stockholm, that a definite identification could be made and the remarkable story of this coin's long journey from the valley of the River Euphrates, in modern-day Iraq, to the banks of the River Suir, upstream from Waterford city, can be told.

The coin is fragmentary, but examination of the script and decoration thereon and comparison with more complete examples found elsewhere in Europe has allowed Mr Rispling to identify the coin as 'an Islamic dirham issued by the Umayyad dynasty. The most characteristic part of an Umayyad dirham is sura 112 on the reverse, and part of it is clearly visible.'

While the name of the place where the coin was minted is not recorded on the surviving fragment, the distinctive annulet pattern on one side suggests it was minted in the Umayyad mint of Wasit, in the southern part of modern Iraq. According to Mr Rispling, it is most likely that this coin was minted between AD 741 and 743.

Umayyad dirhams were circulated widely in the Near East in the eighth century AD, and it is clear from finds of coins in hoards in eastern and northern Europe that the Vikings' trade network extended as far south as the Black Sea and the eastern and western Mediterranean. It is likely that amber, furs and slaves were exchanged for silver. Looking at the distribution of hoards containing Islamic coins, it would seem that the main trade route was across the Caucasus (modern-day Armenia, Georgia and Azerbaijan) and up the river systems of western Russia, such as the Volga and Dneiper, to the Baltic. In the context of Viking trade it seems that these exotic coins were used according to their weight of silver. As a result, the coins were often cut into fragments; this is probably the reason why the Woodstown example is incomplete.



Fig. 1: The Umayyad dirham from Woodstown, Co. Waterford, which measures 9 mm by 7 mm by 1 mm. (studiolab.ie)



Fig. 2: Reverse of Umayyad dirham. (studiolab.ie)

How much time elapsed between the minting of the coin in southern Iraq and its loss at Woodstown is not known. However, based on the evidence of Scandinavian coin hoards, coins such as this could have circulated for up to 150 years, being passed from one trader to the next, progressively making their way northwards from the mint in the Euphrates valley. By the time it reached the site at Woodstown, it was probably in the possession of and lost by a Scandinavian or Irish trader who had come to sell or purchase goods on the banks of the River Suir.



Who Are The Archaeologists In Your Neighbourhood?

Orlaith Egan, assistant project archaeologist with Westmeath County Council National Roads Design Office, gives an account of an archaeological school project at Gainstown National School, Mullingar.

An archaeological school project, organised by Westmeath County Council National Road Design Office (NRDO), was held at Gainstown National School in Mullingar in January 2006 to introduce primary schoolchildren to archaeology and history in their locality (Fig. 1). The project focused on the work of the archaeologist, the osteoarchaeologist and the museum curator, with a series of presentations given by archaeologists Rónán Swan and Orlaith Egan of Westmeath County Council NRDO, by Dr Patrick Randolph-Quinney of Valerie J Keeley Ltd and by museum education officer Sarah Cummins from the National Museum of Ireland.

During the course of the project the children had an opportunity to visit an archaeological excavation at Rochfort Demesne, which was being excavated by Valerie J Keeley Ltd as part of the N52 Mullingar–Belvedere Realignment. The visit enabled the students to experience first-hand how archaeologists excavate a site and the exciting evidence that had been uncovered at this site (Fig. 2).

The National Museum of Ireland also introduced the children to the many wonderful artefacts found in their local area and throughout County Westmeath. They had a chance to experience what people wore in early medieval times, what implements they used everyday and how they used them (Fig. 4). The children also participated in a workshop held by Montague Heritage Services, which recreated life in early medieval society (Figs 3 and 5).



Fig. 2: Fourth-class children learning how to survey at the Rochfort Demesne excavation.



Fig. 3: Student and Alan Montague dressed as medieval noblemen.



Fig. 4: Sarah Cummins, National Museum of Ireland, with the children dressed in Viking costumes.



Fig. 5: Montague Heritage Services workshop.

The Ancient and the Modern:

Using 21st-Century Technology to Record a 4,000-Year-Old Burial Urn

James Eogan, project archaeologist with Tramore House Regional Design Office, reports on the novel use of three-dimensional laser scanning technology to record a Bronze Age pottery vessel.

Excavations by Joanna Wren and a team of archaeologists from Headland Archaeology Ltd in advance of construction of the N25 Waterford City Bypass in Newrath, Co. Kilkenny, uncovered a previously unknown ring-ditch (c. 4 m in diameter) in June 2004. Ring-ditches are one of the simplest prehistoric burial monuments in Ireland, comprising a small ditch dug to enclose a circular area that can range from 3 m to 20 m in diameter. Sometimes the earth dug from the ditch was used to form a mound in the central area, or a bank on the outer edge of the ditch. Excavation has shown that ring-ditches were constructed from the Early Bronze Age to the Iron Age; burials have been found in the area enclosed by the ditch, the mound (if one were present) and in the ditch itself.

Centrally located within the ring-ditch was a large, flat slab of rock that originally would have been covered by a mound of the soil dug from the surrounding ditch. When this slab was lifted, a small, stone-lined pit was revealed and it contained an inverted burial urn of a type known by archaeologists as a Vase Urn. The urn was excavated carefully and was found to contain the cremated bones of an adult male, who was probably in his mid- to late thirties when he died, of unknown causes, almost 4,000 years ago.

The urn is just under 290 mm high and has a maximum diameter of just under 300 mm. It was adorned with three 'zones' of decoration, which were incised onto the surface of the pot using a pointed tool while the clay was still wet: the neck is decorated with six horizontal lines; the belly is decorated with a series of opposed triangles (80 mm high) filled with alternating oblique lines, below which are three horizontal lines; the lower body is decorated with an irregular criss-cross pattern.

Three-dimensional laser scanning is normally used for the modelling of components in the automotive industry and for other precision engineering applications. The scanner can be used to scan an object of any size in any accessible location, from small archaeological objects in a conservation laboratory to large, sculpted architectural features outdoors. The low-powered laser safely recorded the surface of the object—without the need for any physical contact between the object and the scanner. The scanning results in a model that can be accurate to ± 0.05 mm of the original. The technology records fine detail and relief marks that could easily be missed by the naked eye or ordinary photographs. Using the free, viewing software, scanned objects can be 'handled' in 3-D, i.e. viewed from any angle and measured with precision.

The full potential of this relatively new technology is still being explored, but the following benefits have been noted. Laser scanning facilitates the detailed examination of fragile artefacts without the necessity for repetitive handling. Dimensions can be measured and the decoration on the pot can be examined in detail. As laser scanning generates a digital model, it makes it possible for specialists in different locations to examine artefacts in detail, without the physical transportation of either artefact or specialist. This technology enables the depiction of objects 'in the round'; in the particular instance of recording the Vase Urn from Newrath, this provided a significant benefit over traditional methods of representing decorated pottery vessels, where typically only one-quarter of the decorated surface is shown. Images of the digital model can be animated to allow the model to be displayed on websites and in video presentations. The digital model can also be used to make accurate replicas of the vessel for public display, which minimises the amount of transportation and handling required of the original object.



Fig. 1: Laser scan of Vase Urn.



Fig. 2: Laser scan of Vase Urn interior.



Fig. 3: Laser scanning in progress.

Archaeological Publications

available from the NRA

Michael Stanley, assistant archaeologist with the NRA, outlines the range of archaeological literature currently available from the NRA Archaeology Section.

A significant aspect of the NRA's responsibilities is to finance and manage the appropriate protection of the archaeological heritage while facilitating the national road-building programme. The Archaeology Section and the local authority-based project archaeologists oversee this important work. A major obligation in undertaking the necessary archaeological works is to communicate the results to the general public and the archaeological profession. In pursuing the public information component of its work, the Archaeology Section has made freely available a number of documents in both hard copy and electronic formats. These include:

- *A guide to NRA archaeology;*
- *The NRA, the M3 and Archaeology: the Facts;*
- *M3 Archaeology Information Series;*
- *The M3 Clonee–North of Kells Road Scheme Archaeology Research Framework.*

Recent initiatives also include the development of the *Archaeological Discoveries* brochure and poster series. To date, 20 information leaflets and three posters have been published and winter 2006 welcomes a further 11 brochures, two new posters and updates to seven previously issued brochures.

In 2003 the NRA initiated its Archaeology and the National Roads Authority Monograph Series, which presents papers given at the annual NRA archaeology seminar held in Dublin. In common with the seminars, the monographs are presented in an informal, jargon-free and easily understood format. To date three monographs have been produced:

- *Archaeology and the National Roads Authority.* Archaeology and the National Roads Authority Monograph Series No. 1;
- *Recent archaeological discoveries on national road schemes 2004.* Archaeology and the National Roads Authority Monograph Series No. 2;
- *Settlement, industry and ritual.* Archaeology and the National Roads Authority Monograph Series No. 3.

The Archaeology Section also ensures that all archaeological work on national road schemes is conducted according to

best-practice procedures and in line with legislative/regulatory requirements. In order to ensure the highest archaeological standards are met during the planning process, in 2005 the NRA launched *Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes* and *Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes*. The aim of these publications is to provide guidance on the treatment of the archaeological and architectural heritage during the planning and design of national road schemes. Wetland archaeology was also addressed in 2005 with *Guidelines for the Testing and Mitigation of the Wetland Archaeological Heritage for National Road Schemes*. This document is intended to assist the project design team, project archaeologist, archaeological consultants and contractors working on testing, field survey, excavation and post-excavation phases of archaeological mitigation in wetlands on national road schemes.

These guideline documents form part of a suite entitled *Environmental Assessment and Construction Guidelines*, which deals with the myriad of environmental impacts caused by major road development. It is proposed to issue new guidelines in 2007 in relation to cultural heritage and the use of geophysical survey on road schemes. It is hoped that these guidelines will promote a standardised approach to the production of comprehensive reports that employ all available sources.

The various brochures, posters and guidelines mentioned above can be obtained from the Archaeology Section, National Roads Authority, St Martin's House, Waterloo Road, Dublin 4. Electronic versions of all the featured publications can also be downloaded from the NRA website: www.nra.ie/Archaeology/.

Settlement, industry and ritual (Archaeology and the National Roads Authority Monograph Series No. 3) and *Recent archaeological discoveries on national road schemes 2004* (Archaeology and the National Roads Authority Monograph Series No. 2) are available through bookshops, or directly from Wordwell Ltd, PO Box 69, Bray, Co. Wicklow (tel: 01 2765221; email: helen@wordwellbooks.com). Unfortunately, *Archaeology and the National Roads Authority* (Archaeology and the National Roads Authority Monograph Series No. 1) is currently out of print.



GLOSSARY

Anglo-Norman

The Anglo-Normans were the descendants of the Normans, who ruled England following the conquest by William of Normandy in AD 1066. In AD 1169 Ireland was invaded by the Anglo-Normans.

Archaeological feature

Any component of an archaeological site, such as a post-hole, pit, wall, ditch, or any deposit that may have accumulated on site.

Archaeological site

A term used to refer to places of archaeological interest or potential.

Artefact

Any movable object that has been used, modified or manufactured by humans.

Beaker pottery

A type of pottery introduced from the Continent and associated with the Beaker Period, from the later Neolithic to the Early Bronze Age.

Bowl furnace

A small, open-air, bowl-shaped furnace, in which the flames are fanned by bellows. Used for heating minerals and metals, or for making glass.

Bronze Age

The period (c. 2400–600 BC) that succeeded the Neolithic and saw the introduction of bronze in the making of tools and weapons.

Bronze Age Funerary Vessels

Pottery vessels associated with Bronze Age inhumation and cremation burials. Categorized into four main types: Collared Urn, Cordoned Urn, Encrusted Urn and Food Vessel.

Carinated Bowl

A type of Neolithic pottery vessel with a hemispherical bowl that has a distinct shoulder, or carination, generally having a curved neck.

Cremation

The practice of burning the bodies of the dead. In prehistory the ashes were commonly placed in a pottery vessel and buried in a pit.

Debitage

Detached pieces of stone from larger stone cores that are discarded during the process of stone tool production.

Fill

A term used to describe the individual layer(s) of material contained within archaeological features, such as post-holes, pits or ditches.

Fibula

A decorative brooch, like a safety-pin in design, that was used to fasten a cloak or other garment. Irish examples are generally dated to the Iron Age.

Fulacht fiadh

A site, generally dating from the Bronze Age, consisting of a horseshoe-shaped mound of burnt stones, a hearth(s) and a trough(s). These sites were used to heat water for a variety of possible purposes. Also known as ancient cooking places.

Geophysical survey

Geophysical survey is the most effective way to see beneath the ground surface without having to disturb the ground. The survey instruments measure anomalies or changes in the soil's properties, such as magnetic susceptibility and electrical resistivity. These anomalies can be caused by the presence of iron artefacts, kilns, ditches, stone walls or hard-packed floor surfaces.

Global Positioning System

A Global Positioning System, or GPS, provides a longitude and latitude for a position on the ground by reference to satellites. It thus allows for the accurate and rapid survey and mapping of surface archaeological features.

In situ

Archaeological artefacts are said to be *in situ* when they are found in the location where they were last deposited, i.e. undisturbed and unexcavated.

Inhumation

The name given to the burial custom of laying a body in a grave.

Iron Age

Final period of prehistory, beginning around 600 BC. In this period iron superseded bronze for the manufacture of tools and weapons.

Jet bracelet

A bracelet made from polished jet, a compact form of lignite. Lignite, or brown coal, is soft, brownish-black coal in which the alteration of vegetable matter has proceeded further than in peat but not as far as in bituminous coal.

Medieval

Period succeeding the Iron Age, which in Ireland is dated from the advent of Christianity in the fifth century up to the 16th century AD.

Mesolithic

The Middle Stone Age, c. 7000–4000 BC, when Ireland was first settled by early hunters and foragers.

Moated site

An Anglo-Norman defended homestead consisting of a square or rectangular enclosure defined by a bank and a broad, flat-bottomed ditch. These features date to the 13th and 14th centuries and were often built in damp land so that the moat would fill with water.

Neolithic	The New Stone Age, c. 4000–2400 BC, preceded the introduction of metalworking and is characterised by the beginnings of farming.
Omega pin	A type of ring-pin in which the ring is not fully closed but has looped or scrolled ends facing inwards. Typically dated to between the seventh and 10th centuries AD.
Quern-stone	A large stone used for grinding grain into flour. The four main categories of quern found in Ireland are the saddle, beehive, disc and pot querns.
Record of Monuments and Places (RMP)	A list of archaeological sites with accompanying maps recorded on a county-by-county basis by the State. Inclusion in the list affords archaeological sites certain legal protections.
Radiocarbon dating	Also known as Carbon 14 or C ¹⁴ dating. A scientific method of dating by measuring the decay of the radioactive isotope Carbon 14, which is present in all organic material. Samples used for dating usually consist of organic materials found on archaeological sites, such as charcoal, wood, seeds, other plant remains and human or animal bone.
Ring-barrow	A barrow is an earthen burial mound, generally dating to the Bronze Age and Iron Age. Ring-barrows are the most common form and consist of a low, circular mound of earth, 15–20 m in diameter, surrounded by a ditch with an external bank.
Ring-ditch	A small, circular enclosure defined by a ring-shaped ditch and often associated with prehistoric burials. Many have been discovered to be ploughed-out barrows.
Ring-pin	An early medieval dress- or cloak-fastener, usually of copper alloy, with a swivel ring inserted through a perforation or loop at the top of the pin. The ring of the pin is sometimes decorated.
Ringwork	An Anglo-Norman fortification consisting of a defensive circular earthwork of bank and ditch.
Post-hole	The void or soil-filled hole where a post once stood.
Post-medieval	The period after the medieval period, often taken to be the period after the dissolution of the monasteries in the mid-16th century.
Prehistoric	Any period for which there is no contemporary documentary evidence.
Souterrain	A long, narrow, stone-walled subterranean passage, usually with a slab roof. Some have small chambers off the main passage.
Spindle whorl	A small, perforated disc of stone or pottery used as a weight attached to the end of a spindle (a metal rod or wooden stick) for spinning yarn or thread from wool, cotton, or other material.
Stick-pin	A straight pin of metal, bone or wood, often with an ornamented head. Worn as a dress accessory and typically early medieval in date.
Vase Urn	A type of Bronze Age pottery consisting of small, hand-made well-decorated vases.

ACKNOWLEDGEMENTS

The National Roads Authority would like to express its appreciation to the following individuals and organisations for contributing to the magazine and for their involvement in the featured road schemes:

Róisín Barton-Murray, Nora Bermingham, Jeremy Bird, Lydia Cagney, Neil Carlin, Linda Clarke, Richard Clutterbuck, Clare Crowley, Ed Danaher, Mary Deevy, Sylvia Desmond, Colm Donnelly, Orlaith Egan, James Eogan, Maria FitzGerald, Margaret Gowen, Irial Glynn, Liam Hackett, Ken Hanley, Penny Johnston, Bernice Kelly, Jacinta Kiely, Gráinne Leamy, Michael MacDonagh, Caitriona Maher, Ted McGowan, Chris McWilliams, Caitriona Moore, Deirdre Murphy, Eileen Murphy, John Nicholls, Aidan O'Connell, Richard O'Brien, Mary O'Brien, Sean O'Neill, Tara O'Neill, Dáire O'Rourke, Jerry O'Sullivan, Patrick Randolph-Quinney, Niall Roycroft, Dan Shiel, Michael Stanley, Ingelise Stuijts, John Tierney, Gerry Walsh, Ken Wiggins, Archaeological Consultancy Services Ltd, Arup, Cavan County Council, Cork County Council, Cultural Resource Development Services Ltd, Direct Route (Fermoy) Construction Ltd, Donegal County Council, Eachtra Archaeological Projects, Fingal County Council, Galway County Council, Halcrow-Barry, Headland Archaeology Ltd, Institute of Technology, Sligo, Irish Archaeological Consultancy Ltd, Kildare County Council, Kilkenny County Council, Laois County Council, Leitrim County Council, Longford County Council, Louth County Council, Margaret Gowen & Co. Ltd, Mayo County Council, Meath County Council, Monaghan County Council, Mott MacDonald Pettit, North Tipperary County Council, Queen's University, Belfast, Roadbridge Sisk, Roughan & O'Donovan, Roughan & O'Donovan Faber Maunsell, RPS Consulting Engineers Ltd, SIAC Wills JV, South Tipperary County Council, Target Archaeological Geophysics, TVAS Ireland Ltd, Valerie J Keeley Ltd, Waterford City Council, Waterford County Council and Westmeath County Council.



Locations of road schemes (red lines) discussed in this issue of *Seanda*.