

**Caherconnell Cashel,
Caherconnell, Carron, Co. Clare**

Final Archaeological Excavation Report

**07E0820
&
07R0167**

J07/16

**Graham Hull
and
Dr Michelle Comber**

24th July 2008

NGR 123618 199502

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Final Archaeological Excavation Report

Licence Nos:

07E0820

and

07R0167

by

Graham Hull
TVAS Ireland Ltd

and

Dr Michelle Comber
NUI Galway

Job J07/16

Summary

Site name: Caherconnell Cashel

Townland: Caherconnell

Parish: Kilcorney

Barony: Burren

County: Clare

SMR/RMP Number: CL009-03010

Planning Ref. No: N/A

Landowner: John Davoren, Caherconnell, Carron, Co. Clare

Grid reference: 123618 199502

Naturally occurring geology: Karstified limestone

TVAS Ireland Job No: J07/16

Licence Nos: 07E0820 and 07R0167

Licence Holder: Graham Hull

Report authors: Graham Hull and Dr Michelle Comber

Site activity: Excavation

Site area: 1m by 5.4m (5.4m²)

Date of fieldwork: 25th August to 4th September 2007

Date of report: 24th July 2008

Summary of results: A hand-dug trench was targeted at the vestigial remains of a rectangular stone-built structure in the northern quadrant of the cashel. The excavation produced evidence of a wall, door and floor associated with the rectangular structure that was sealed by tumble. Beneath the floor, stratigraphically earlier archaeological deposits were located. These deposits were rich in faunal and floral remains and a number of artefacts were also recovered. The artefacts included an iron arrowhead, pieces of two quernstones, a stone-mould for the manufacture of dress-pins from precious metal, iron slag, a sandstone possible metalworking anvil, a number of nail like objects, an as yet unidentified conical iron object, a bone comb, the point of a bone pin, hone-stones, a poor quality chert tool and pieces of flint.

Radiocarbon dating indicates that the cashel was constructed between the early 10th and mid 12th centuries AD. Occupation deposits indicate usage of the cashel between the early 10th and early 13th centuries. The rectangular structure was probably built and used between the early 15th and mid 17th centuries.

Monuments identified: Medieval and post-medieval deposits, artefacts and structures.

Location and reference of archive: The primary records (written, drawn and photographic) are currently held at TVAS Ireland Ltd, Ahish, Ballinruan, Crusheen, Co. Clare.

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By Graham Hull and Dr Michelle Comber

Report J07/16b

Introduction

This report documents the final results of an archaeological excavation within a rectangular stone-built structure in the northern quadrant of Caherconnell Cashel, Caherconnell, Carron, Co. Clare (NGR 123618 199502) (Fig. 1).

The National Monuments Act 1930 (as amended) provides the legislative framework within which archaeological excavation can take place and the following government publications set out many of the procedures relating to the conduct of archaeological excavation:

Framework and Principles for the Protection of the Archaeological Heritage (DAHGI 1999a)

Policy and Guidelines on Archaeological Excavation (DAHGI 1999b)

Project background

Discussions relating to a limited archaeological research excavation at Caherconnell cashel (CL009-03010) took place between the landowner (John Davoren), licensed archaeologist (Graham Hull) and NUI, Galway lecturer (Dr Michelle Comber) on 14th June 2007.

The excavation, reporting and publication are funded jointly by TVAS (Ireland) Ltd, Michelle Comber and the landowner John Davoren through Burren Forts Ltd. All fieldwork labour was given free. Tools, equipment and logistics were provided by TVAS (Ireland) Ltd. Post-excavation processing of finds and samples was undertaken by TVAS (Ireland) Ltd. and together with specialist reporting has been financed, where needed, by The Heritage Council through the Burren INSTAR project. Radiocarbon dating has been provided by Queen's University Belfast and the provision of four gratia radiocarbon dates have been agreed by Dr Emily Murray through the CHRONO Ringfort Dating Project. Conservation of artefacts has been funded by Burren Forts Ltd.

The excavation was timed to coincide with 'Heritage Week' 2007 and, through the facility of the visitor's centre owned by the Davoren family, ensured maximum public engagement with archaeological fieldwork.

Location, topography and geology

Caherconnell Cashel is located in the townland of Caherconnell, Kilcorney parish, Burren barony, Co. Clare (NGR 123600 199500) (Figs 1 & 2). The landscape in the immediate vicinity is part of the 'High Burren' and is karst limestone. The land is used as pasture.

The cashel lies at approximately 130m above Ordnance Datum.

The site is located to the immediate west of the R480 road that links Leamaneh and Ballyvaghan.

The geological deposit observed in the excavation trench was karstified limestone bedrock.

Archaeological background

The distinctive karst landscape of the Burren, Co. Clare provides a rare opportunity to examine the preserved remains of past agricultural settlement. Occupation sites and associated field systems can be found throughout this area of north Clare, reflecting human activity from the Neolithic to modern periods. The most visible and plentiful settlements from the past date to the second half of the first millennium AD, the Early Historic or Early Medieval period. These settlement enclosures mostly comprise stone cashels, with a much smaller number of earthen ringforts or ‘raths’. Their numbers reflect relatively dense occupation of the Burren in the Early Medieval period, and many are surrounded by preserved field systems, some quite extensive.

Caherconnell (CL009-03010) is a well-preserved example of a Burren cashel that has been neither studied in detail nor excavated.

The Cashel

The enclosure at Caherconnell is a circular, drystone ringfort or ‘cashel’ that measures 42m in external diameter, with walls up to 3m wide at the base and up to 3m high externally (Plate 1). The quantity of stone tumbled from the walls suggests at least another metre in original height. The original walls are composed of rough horizontal courses of local limestone blocks and slabs, with smaller stones used to fill the gaps between them. Occasional vertical seams are visible along the external face of the wall. The inner face of the wall has been rebuilt in several places – as evident in the vertical and angled setting of the replaced stones. Although Westropp (Comber 1999) noted the lack of any internal wall terraces or steps, it is possible that some of the rebuilding and tumble may mask such features. A narrow ledge, approximately 0.5m wide, does run along the inner face of the wall to the south (see Plate 2). The entrance gap is situated on the east of the site, with Westropp (ibid) recording vertical jamb-stones defining its external edges at the end of the 19th century. Modern timber access stairs currently fill this gap and few, if any, traces of the original entrance can be discerned.

The modern interior of the cashel is clearly raised above that of the external ground surface, an average of 0.9m in the difference. Excavation has proven that this is due to a build-up of occupation material within the enclosure. The interior surface is now somewhat uneven, marked by relatively frequent grassed-over stones and other features. The partially grassed-over wall tumble around the circumference of the interior gives it a somewhat ‘dished’ appearance. A number of features are visible above the surface.

Internal Features

Dividing Wall

The interior is divided in two by the remains of a partly grassed-over drystone wall running roughly east – west across the site in a slightly curving fashion. Though the edges of this wall are masked by collapse, it is possible to identify a double-faced wall with a rubble core, approximately 1.0–1.3m wide where the original width is visible (see Plates 3 and 4). A maximum of four courses is discernible, though the tumble on both sides would suggest a greater original height. This wall is probably quite late in date, perhaps contemporary with Structure A (the subject of the current excavation, see below).

Structure A

One of two visible internal structures, Structure A is situated just inside the north wall of the cashel, and is the partial subject of the current excavation report. Rectangular in plan (with its long axis running east–west), it is defined by a partly grassed-over drystone wall still visible to the west and south, but hidden by cashel tumble to the north, and almost completely denuded to the east. Stretches of original, *in situ* walling are visible amongst the collapse, particularly along the south side wall.

Here, the wall has an internal and external facing of contiguous limestone slabs set on edge (see Plates 5 and 6). The grassed-over nature of the area between the faces prevents the positive identification of a rubble core or horizontal coursing. The original width of the wall reaches a maximum of 1.2m, and it is up to 0.25m high. Internally the structure measures roughly 10m by 5m. Prior to excavation the relationship between the building and the cashel wall was uncertain. A possible entrance was identified in the collapsed stone near the eastern end of the south side wall.

Structure B

Structure B is built up against the west wall of the cashel. The structure is sub-rectangular in plan, with its interior divided in two by a rather flimsy drystone wall (see Plates 7 and 8). Internally it measures approximately 7.5m by 5m. The north wall of the structure forms part of the dividing wall running across the site and it is difficult to separate the two visually as this section of the wall is covered with vegetation. Up to six horizontal courses are extant on this side. The remaining eastern wall does not appear very substantial. The walls are much collapsed and partly overgrown, perhaps explaining the difficulty in positively identifying an entrance or entrances. The most likely position of such is along the eastern length of wall. The entire structure appears rather late.

Collection of horizontal slabs

Four or five partly grassed-over large limestone slabs are situated in close proximity to each other in the south-western quadrant of the interior (see Plate 9). These are flat slabs, measuring up to 1m in maximum exposed dimension. As a group they cover an area measuring 2.5m by 2.6m.

Possible souterrain?

The eastern end of the dividing wall does not run cleanly up to the cashel wall. Rather, roughly 5m from the cashel wall there is a gap followed by the apparent splitting of the wall into two raised 'banks' with a sunken area between (see Plate 10). It is uncertain which of these might represent a continuation of the dividing wall. The hollow between them measures roughly 4m by 1.5m, and is up to 0.5m deep. Within the hollow are partially grassed-over large stones and slabs, some of which are in a horizontal position with voids visible beneath them. It is impossible to determine whether or not this represents a possible souterrain or an area of collapse from the adjacent cashel wall.

Sunken area and slabs inside entrance

The surface immediately inside the entrance is marked by a sunken area or hollow that measures roughly 2m by 3m, and is 0.3m deep. Leading towards it from the west is a discontinuous line of slabs set on edge. Only their tops are visible above ground today so it is possible that, below the modern surface, the line is continuous.

External Features

A number of ancient features can be seen in the immediate vicinity of Caherconnell cashel, particularly to its south and south-east. Closest to the cashel (just east of its entrance) is a small, partially grassed-over cairn of large stones. This measures approximately 2.5m in diameter and 1m in height. The possibility of a prehistoric burial mound cannot be ruled out.

To the south-east, and slightly downhill from the cashel, are the remains of a subterranean drystone structure, the roof of which has collapsed into the interior. This has exposed a curved section of drystone walling with three small wall-niches partially visible, each approximately 0.5m wide and 0.3m deep (see Plate 11). This walling is situated along one side of a circular hollow now almost filled with collapsed stone work and low vegetation. Immediately north-east of this chamber are the remains of a partly grassed-over drystone wall. This is composed of large boulders or slabs set end-to-end, and is probably related to the chamber. Both are set in a deliberately quarried D-shaped area,

approximately 0.65m below the surrounding ground level. A collapsed souterrain chamber seems a likely, though not definite, explanation.

Farther south are more extensive remains, comprising at least two cashel-like enclosures with ancient field walls emanating from them, and smaller house-like enclosures scattered about the area (see Plate 12). An old route-way also skirts Caherconnell and runs off to the south-south-west.

Descriptions of Caherconnell

Extract from www.Burrenforts.ie, website of the Caherconnell visitor centre:

‘The fort is in its original state. Its position, overlooking virtually all-surrounding areas suggests a defensive settlement. This may not have been defensive in a military sense, but rather for personal security from raiders or wild animals which were among the most common foes at the time.

Ringforts such as Caherconnell are thought to have been inhabited from 400-1200 A.D. However a description of the site at Caherconnell, in the early 20th century by local historian the late Dr McNamara of Corofin Co. Clare suggests that the entrance to the fort may have been re-built in the 15th or 16th century. This suggests that this fort may have been inhabited up to the late medieval period.’

Extract from: *Archaeology of the Burren: Prehistoric Forts and Dolmens in North Clare* by Thomas Johnson Westropp (Comber 1999):

‘Caherconnell (O.S. 9, No. 4) is a large and perfect fort, 140 feet to 143 feet in external diameter, nearly circular in plan, and girt by a wall with two faces and large filling; it is 12 feet thick, and from 6 feet to 14 feet high, being most perfect towards the west. The masonry consists of fairly large blocks, many 3 feet long and 2 feet 6 inches high, with spawls in the crevices, and a batter of 1 in 5. The inner face is nearly perfect, and had neither steps nor terraces. The gateway faced the east; it was 5 feet 8 inches wide, and had external side-posts. The garth is divided by a long wall running north-west and south-east; at its northern end are two house sites, one 30 feet long, and at its southern an enclosed hollow, possibly a hut or souterrain.’

Research framework

The excavation at Caherconnell was designed to both reveal information on the site itself, and also to integrate the monument into a wider study of the archaeological landscape currently being undertaken in the Department of Archaeology, NUI, Galway.

The study of archaeological landscapes is becoming increasingly popular in Ireland and elsewhere. Recent work by Billy O’Brien, Liam Hickey and Nick Hogan on the Beara peninsula, Co. Cork, has revealed the potential of such work in an Irish context (pers. comm., not yet published). The Beara studies (at the Barrees Valley, Cloontreem and Ardgroom) mapped extensive archaeological landscapes that survived in the valleys and along the lower slopes of an upland region. These surveys, and some excavation at Barrees, revealed much about past human activity in these areas, and suggested what the landscape may have looked like in other areas where such remains have not been preserved. The Burren, with its more extensive preserved remains, should, at the very least, provide similar information for the west of Ireland.

Some landscape survey has been undertaken in the Burren. The first attempt at landscape mapping was completed by Blair Gibson as part of his doctoral thesis studying the chiefdom of Tulach Commain and the archaeological remains in the area of Cahercommaun, to the south-east of Caherconnell.

Gibson's survey, however, was not an electronic one and did not record the same density or detail of surviving remains (Gibson 1990). A more recent digital survey in the area was carried out by Dr Carleton Jones of NUI Galway, at Roughan Hill to the south-east. This work had a prehistoric focus, but did incorporate all archaeological remains in its survey. Not yet published, the results of this project (which included excavation) should compliment and expand the current work.

Dr Elizabeth Fitzpatrick of NUI Galway has recently commenced a study of the later medieval estates, residences and schools of the Gaelic professional classes, including those of the Burren. One of the main foci of her work is the Cahermacnaghten estate of the O'Davorens, a minor gentry family who were keepers of legal manuscripts and teachers of law in the lordship of Burren. In addition to mapping the archaeological remains in the area, the project has undertaken a 6-week excavation in the summer of 2007 in the vicinity of Cahermacnaghten in a search for chronological and functional evidence (funded by the Royal Irish Academy).

Also relevant to this excavation at Caherconnell, is the work of one of the current authors (Michelle Comber); a study of the cashels and associated remains in a study area extending south from Caherconnell as far as Kilfenora, east to Carran and Cahercommaun, and south-east to Leamaneh. This project, *Ringforts and the Settlement Landscape of the Burren in the First Millennium AD*, commenced in 2005 and has been funded by the Heritage Council of Ireland (Comber 2005 and 2006). It marks the start of a study of the settlement landscape of the first millennium AD in a chosen study area within the Burren, Co. Clare. The area in question incorporates the shifting political boundaries of Coru Mruad territory. The first year saw the analysis of data from all relevant monuments within the study area, numbering approximately three hundred extant sites (mostly cashels, raths, enclosures and ecclesiastical remains). This analysis revealed that many of these settlements were deliberately sited to best exploit the most fertile farmland in the area, a not uncommon tendency in this period. It also suggested, however, that perhaps some settlement may have been strategically positioned with regard to communication strategies and territorial politics. Caherconnell is one such site, positioned as it is at one end of a major north-south pass through the Burren mountains (still used today by the two modern roads, the N67 and R480).

More recent work has seen the detailed digital survey and mapping of a preserved archaeological landscape located between the large cashel of Ballykinvarga to the south of Caherconnell, and Leamaneh castle to the south-east. Extensive field systems and enclosures were recorded in this area, with the area of study expanded through the examination of vertical aerial photographs. Elements from various periods of the past were identified, reflecting the continued use of this zone throughout prehistory, the Early Medieval period, and the medieval periods. These included at least ten different forms of field wall, individual fields, small enclosures, larger settlement enclosures, tracks and roads, cairns, tombs and castle remains. Most of the extant material, however, *appears* to date from the Early Medieval period.

The next, logical step in this study is the acquisition of scientific dating evidence from as many parts of this landscape as possible, from cashels, small enclosures, ancient field walls etc. Only then can the mapped remains be interpreted in any truly meaningful way. The excavation at Caherconnell provides both chronological and functional evidence vital to the interpretation of the site itself, and very relevant to the landscape study described above. The detailed mapping of such remains to the area immediately south of Caherconnell cashel will be extended with a survey grant from the Heritage Council in 2007/2008.

Excavation aims and methodology

Aims

The excavation was intended to provide evidence for the date and function of a rectangular stone-walled structure (Structure A) within the cashel and to examine the relationship between the structure

and the cashel. Prior to excavation, a detailed topographic survey of the rectangular structure and its immediate surrounds was made by Liam Hickey, surveyor, NUI Galway using a total station (Figs 2 & 3 and Plate 13). Based in part on this information, a small trench (5m long and 1m wide) was decided to best fulfil the excavation aims. The location of the trench was chosen to maximise the potential for obtaining a stratified archaeological sequence that addresses continuity of use within the monument (Plate 14). The interior and exterior of the rectangular structure was targeted by the trench. The excavation also aimed to maximise archaeological information while causing as little disturbance to the archaeological integrity of the cashel as a whole.

Fieldwork

Following submission of a method statement and licence application, a licence to excavate was granted to Graham Hull by the National Monuments Section of the Department of the Environment, Heritage and Local Government, in consultation with the National Museum of Ireland, on behalf of the Minister for the Environment, Heritage and Local Government. The licence number is 07E0820.

The archaeological excavation took the form of a single hand-dug trench targeted at the vestigial remains of Structure A in the northern quadrant of the cashel (Fig. 2 and Plate 14). The trench was orientated from north to south and was perpendicular to the northern long wall of the structure. The trench abutted the cashel wall. It was hoped that the excavation would provide evidence for the date and function of the stone-walled structure and the relationship between the structure and the cashel itself

The trench, as excavated, was 1m wide and 5.4m long and had a maximum depth of 0.8m.

Topsoil and archaeological features and deposits within the trench were hand-excavated sequentially. The excavation concluded at the surface of the underlying bedrock. A full written, drawn and photographic record was made in accordance with the TVAS (Ireland) Ltd Recording Manual (First Edition 2003). Copies of this manual have previously been submitted to the National Monuments Section and the National Museum of Ireland.

The fieldwork took place between 25th August and 4th September 2007 and was directed by Graham Hull, and assisted by Edel Barry, Danny Burke, Olive Carey, Evalina Chrobak, Michelle Comber, Kasia Gorczynski, Mirosław Gorczynski, Denise Hennessy, Molly Hull, Kris Kacprzak, Agatka Kolacz, Marta Kolacz, Pawel Kolacz, Mary-Clare Linnane, Clodagh Lynch, Michael Lynch, Adrian McCarthy, Joe McCooey, Paul McCooey, Margaret McNamara, Adam Mrozowski, Astrid Nathan, Jaime Parra Rizo, Elle Parra Rizo, Aisling Parra Rizo, Angie Peach, Kris Pecherzewski, Agata Raclaw, Paul Rondelez, Edel Ruttle, Kamila Sliwka, Kate Taylor and Mariusz Wolny. Of these staff, four were licence eligible, seven were archaeological supervisors and twelve were archaeological assistants (Plate 15 and 16). A core team of Graham Hull, Michelle Comber and Kate Taylor were present on site each day and took responsibility for recording. A minimum of six people were on site each day.

All archaeological contexts were dry sieved, through a 2mm gauze, on site for small artefacts and ecofacts (principally small bone fragments).

Archaeological contexts were bulk soil sampled for ecofacts (charred plant remains). These samples have been wet sieved and floated. This processing took place at TVAS (Ireland) Ltd offices in Ballinruan, Crusheen, Co. Clare during September 2007.

The weather conditions during the 11 day excavation were mostly dry and bright and this inevitably impacted positively on the archaeological results. The provision of on-site facilities by the Caherconnell Visitor's Centre- such as plumbed toilets, hot water and plentiful supplies of hot drinks and food undoubtedly improved morale and this too, no doubt, increased the realisation of the archaeological potential.

Archaeological standards

All archaeological works, including reports, were planned, managed and carried out in accordance with the requirements and standards as identified in: the National Monuments Acts (1930-2004), The Policy and Guidelines on Archaeological Excavation, (DAHGI 1999a), Framework and Principles for the Protection of the Archaeological Heritage (DAHGI 1999b). Excavation was carried out to archaeological best practice and, at a minimum, to the standards of the Professional Codes of Conduct adopted by the Irish Archaeological Institute (IAI 2006). Further, the Codes of Conduct of the Institute of Field Archaeologist were adhered to (IFA 2004).

Metal detection

As part of the archaeological excavation a metal detector was used under licence (07R0167). Unlicensed metal detection on archaeological sites is prohibited by law (National Monuments Act 1930 (1987 amendment)).

The site director operated the metal detector to enhance recovery of metal artefacts. Archaeological features and deposits *within the excavation trench only* were scanned and the location of any 'hits' noted. Topsoil and spoil from individual archaeological horizons was additionally scanned. In the event, no artefacts were identified by use of the metal detector.

Artefact strategy

All stratified and unstratified artefacts were retained. These have been numbered and recorded in accordance with current National Museum of Ireland guidelines. The finds will be treated, stored and conserved in accordance with *Advice Notes for Excavators* (NMI 1997).

Post-fieldwork conservation services were provided by a recognised IPCRA conservator (Susannah Kelly, UCD).

The artefacts will be temporarily stored at the offices of TVAS (Ireland) Ltd, Ahish, Ballinruan, Crusheen, Co. Clare and will be deposited with the National Museum of Ireland in due course.

Backfilling

On completion of excavation, the trench was lined with perforated plastic sheeting, backfilled by hand and was reinstated to leave the surface of the trench flush with surrounding ground. Any subsidence or settling will be monitored and filled as needed. Tumble from the cashel that was cleared at excavation has been replaced and it is intended that once reinstated it should not be apparent that disturbance (archaeological excavation) has taken place (Plate 17). At the time of writing (April 2008), no above ground evidence for the excavation was visible.

Excavation results (Figs 4 to 5 and Plates 18 to 27)

A complete context list is given as Appendix 1.

A stratigraphic matrix (Harris) is given as Appendix 2.

Twenty-seven context numbers were allocated, including numbers for the cashel (70), cashel tumble (51), the topsoil (50) and the bedrock (66).

The description should be read in conjunction with the trench plan (Fig. 4), section drawing (Fig. 5) and the photographed section (Plate 18).

Four archaeological and one geological phase were identified. These are described below in chronological order.

Phase 0: Geological

The limestone bedrock (66) was strongly karstified and was characterised by clints and grykes with fissures orientated approximately north to south (Plate 19). The surface of the bedrock was essentially level and sloped very gradually downwards from south to north. The fissures in the bedrock were filled by a silty clay (65) and this was fully excavated. Deposit 65 is described below in Phase I.

Phase I: Post geological

Immediately above and within the bedrock a silty clay was excavated (65). This deposit was a loose, dark blackish brown silty clay with frequent inclusions of limestone chips derived from the bedrock. Infrequent bone and charcoal was recovered. The deposit was probably partly naturally and partly archaeologically formed. Deposit 65 was noted to continue beneath the cashel wall and therefore presumably pre-dates the construction of the cashel.

Phase II: Medieval

The cashel (70) was constructed of large limestone blocks and these were placed directly onto the limestone bedrock. No foundation course for the cashel was apparent. The cashel wall was of drystone construction.

Abutting the inside face of the cashel and overlying deposit 65, a rich dark brown clayey silt that was between 0.09m and 0.30m thick was recorded. This deposit (62 at south end and 69 at north end) was seen to include large pieces of limestone (maximum dimensions 0.50m by 0.30m by 0.15m). The deposit was darker at the northern part of the trench and this was probably the result of the differences caused by the absence/presence of the overlying floor surface (53 – see Phase III).

The large pieces of limestone seen within deposit 62 (Plate 20) could be interpreted as tumble or collapse from a previously unrecognised early building but the limited scale of the trench prevents a definitive statement.

Two co-joining pieces of a sandstone mould/whetstone probably for making precious metal dress pins were recovered from deposit 62.

Immediately above deposit 62/69 was deposit 55 (recorded as 59 at the north end) (Plate 21). Deposit 55 was a fairly loose, silty clay that was dark brown in colour. Occasional limestone pieces were recorded (maximum dimensions 0.30m by 0.30m by 0.10m). Frequent charcoal pieces were also noted within, and recovered from, deposit 55. Deposit 55 was typically between 0.25m and 0.30m thick. At the northern end of the trench, and outside the area sealed by the Phase III floor surface 53, deposit 55 was darker in colour and recorded as 59.

Archaeological artefacts and considerable quantities of animal bone were recovered during excavation and post-excavation processing of samples from deposit 55. These artefacts included parts of two rotary quernstones, an iron arrowhead, a conical iron object, iron slag, a bone comb and a possible bone pin fragment.

Deposits 62 and 55 (and their north-end equivalents 69 and 59) were perhaps *in situ* archaeological layers relating to early occupation of the cashel or may have derived from other parts of the monument and been used as levelling material for the construction of the overlying Phase III structure. The relatively small and 'keyhole' nature of the single excavation trench did not allow the origin of deposits 62 and 55 to be ascertained.

Phase III: Mid 15th to mid 17th century

An approximately rectangular structure (Structure A) was apparent from observation of above-ground walls and topographic survey. Structure A measures approximately 10m by 5m and is defined on the south side, at the modern ground surface, by a single course of roughly hewn limestone blocks. The walls themselves are in the order of 1m thick. A possible doorway defined by a slight depression in the southern wall is apparent.

The excavation examined the northern wall (54) of Structure A and located a doorway through it and a floor surface (53) within. The removal of cashel tumble 51 and excavation demonstrated that Structure A was free-standing - in that it was not keyed into the cashel wall - and indeed that the north wall was separated by a 1m gap from the cashel. The main excavated features of the building are illustrated in Figure 4.

Foundation Structure A

The foundation (68) for the north wall of Structure A comprised large limestone pieces that measured up to 0.50m by 0.20m by 0.20m (Plate 22). These slab-like stones were placed horizontally and formed a level and secure surface on top of which wall 54 was constructed. The foundation stones 68 also underlay the doorway in the north wall.

North wall Structure A

The north wall (54) of Structure A was of drystone construction oriented, approximately east to west, and was essentially parallel to the cashel wall. The wall was defined on either side by large limestone slabs set on edge. The space between these revetting slabs was filled by smaller limestone slabs and pieces laid in horizontal courses. Three to four courses were apparent on the east side of the doorway. At this point the wall stood 0.42m high and was typically 0.95m wide. The top of the surviving wall on the east side of the doorway was 0.8m above the top of the entrance paving 63.

After recording, part of the wall at the eastern edge of the doorway collapsed. This allowed an opportunity to examine the wall construction. The core of the wall (71) at the east side of the doorway was characterised by a loose matrix of small limestone pieces and a light brownish silty clay.

The wall on the western edge of the doorway was not clearly defined within the small excavation trench.

Doorway in north wall Structure A

The doorway seen in the north wall of Structure A was 0.98m wide and was situated across from the possible doorway noted on the modern ground surface in the south wall, though not directly opposite.

At the threshold of the doorway, both internally (60) and externally (67) a mid to dark greyish brown clayey silt was recorded. This deposit included 2% gravel pieces and 5% small limestone chips. Larger limestone pieces that were smaller than 0.20m by 0.20m by 0.05m made up 10%. Deposit 60/67 had a maximum thickness of 0.10m and had a maximum width, observed in the trench, of 1.00m.

Above 60/67 and isolated beneath the door 'step' (63) was deposit 64. Deposit 64 was a loose, and in places sticky, silty clay that was of mixed hue but mostly mid to pale creamy brown with beige patches. Charcoal and small pieces of floor surface 53 were found within 64. Also found in deposit 64 were pieces of degraded timber. These pieces did not seem to form any recognisable structure.

Deposit 63 comprised paving slabs within the doorway of the north wall of Structure A (Plate 23). Seven to ten limestone slabs were laid flat across the doorway. The stones were not contiguous but laid level with the internal floor surface 53. The stones ranged from 0.16m to 0.48m in maximum

dimension and were up to 0.08m thick. Deposit 63 represents a deliberate paving of the doorway and would have formed a slightly raised threshold or 'step'.

A piece of fragmentary and poorly preserved timber (61) was recorded orientated from east to west across the inner edge of the doorway (Plate 24). The timber was 0.03m across and 0.84m long - although further timber survives in the adjacent sections. The location of this piece of timber suggests its use as part of a wooden door or door frame.

Floor Structure A

A firm but friable, pale yellowish cream coloured lime-mortar (see geological report below) floor surface (53) was recorded across the full extent of the trench to the south of the northern wall of Structure A (Plate 25). This floor was patchy with a maximum thickness of 0.05m and was more worn towards the south (middle of Structure A) and thicker near the north wall. Deposit 53 was made from limestone pieces and small river-rounded gravel set in a lime cement.

Above the floor and in the immediate vicinity of the doorway, a mid to pale creamy grey brown clayey silt was noted (57). This deposit included 1% gravel and 20% small limestone chips.

Immediately above floor surface 53, two small patches of dark soil (56) were observed. These deposits were 0.02m thick and had maximum dimensions of 0.30m by 0.15m. It is likely that deposit 56 is the lower part of deposit 52 (see below).

Phase IV: Post medieval/modern

Overlying Structure A, both internally (52) and externally (58) was a layer of tumble (Plate 26). This deposit was characterised by a dark brown, with hints of grey, humic clayey silt that had 60% inclusions of large limestone pieces. These limestone pieces had maximum dimensions of 0.4m by 0.2m by 0.1m. Smaller gravel and limestone chips made up 2% of deposit 52. It is likely that deposit 52/58 represents collapse of Structure A.

Topsoil (50) was recorded at the south part of the trench (Plate 27). This soft and spongy topsoil was dark brown and rooty and was between 0.02m and 0.25m thick. The topsoil probably derived, in part, from animal manure as it is known that cattle were kept inside the cashel in modern times.

At the north end of the trench and adjacent to the cashel wall, a deposit of limestone tumble (51) from the cashel was recorded (Plate 27). This deposit was up to 0.90m thick at the north and was 1.10m wide, although it clearly continued beyond the limit of the excavated trench. The large stones were in the size range of 0.50m by 0.35m by 0.15m. This tumble, in part, filled the gap between the north wall of Structure A and the inner face of the cashel wall. Three large pieces of unworked sandstone were included in the tumble. These stones, while not of immediately local origin, were not artefacts and therefore not retained. These pieces of sandstone were in the size range of 0.25m by 0.20m by 0.10m, 0.25m by 0.30m by 0.80m and 0.15m by 0.15m by 0.15m.

Finds

A total of 88 artefacts or assemblages (including 47 assemblages of bone) were recovered from the excavation and a catalogue of finds is given as Appendix 3. The iron artefacts include nails, an arrowhead and a projectile point. Stone artefacts include parts of two rotary quernstones, hone and whet stones, a possible anvil and part of a mould probably used for making dress pins. Flint and chert tools were recovered as were pieces of iron slag. Bone was recovered in considerable quantities, and amongst this material, a bone comb, the tip of a pin and a small 'trial piece' were found.

All the artefacts have been numbered and recorded in accordance with current National Museum of Ireland guidelines. The finds will be treated, stored and conserved in accordance with *Advice Notes for Excavators* (NMI 1997). The finds will be deposited with the National Museum of Ireland and it is hoped that, with the permission of the National Museum, the artefacts will be displayed at the Clare Museum, Ennis.

Flint and chert by Dr Steve Ford (Fig. 6)

A collection comprising sixteen lithic items was recovered from two contexts (Table 1). The material was both hand collected and recovered from a sieved sample. Fourteen of these pieces appear to be of flint, with just single examples of chert and hard rock present. Of these sixteen items, eight pieces do not appear to have been used.

The collection includes four flakes, one of which appears to have been made from chert, and two spalls. The division between flakes and spalls is fairly arbitrary but with the two examples here being no larger than 11mm across, whereas the flakes, some of which are broken, are at least 16mm across.

Two small lumps can be considered as cores but with just single removals (bashed lumps). The larger piece has produced a flake 20mm wide and appears to be a deliberate action whereas the second smaller piece has only a single spall-sized removal and is therefore open to doubt.

One apparently unused piece (2g) but with edge damage (accidental) is a fine grained metamorphic or igneous rock but is otherwise unidentified.

One unused flint fragment has been heavily burnt and the chert flake may have been lightly burnt.

Although the collection is small and eight pieces are unused, the density of finds recovered is nevertheless high in comparison to the limited extent of the excavation trench.

Table 1: Catalogue of flint and chert

Find No.	Cut	Deposit	Sample	Description	Weight (gm)
07E0820:55:2	-	55		Chert flake, broken, burnt? 21mm	<1
07E0820:55:8	-	55		Flint, fragment, burnt, not used	5
07E0820:55:9	-	55		Flint, fragment, not used	<1
07E0820:55:10	-	55		Flint, fragment, not used	10
07E0820:55:11	-	55		Flint fragment, not used	1
07E0820:55:12	-	55		Stone (not chert, not flint) accidental flaking	2
07E0820:55:13	-	55		Flint flake, broken 16mm	1
07E0820:55:14	-	55		Flint core/bashed lump (1 spall removed)	1
07E0820:55:16	-	55		Flint fragment, not used	<1
07E0820:55:17	-	55		Flint, spall 11mm	<1
07E0820:55:19	-	55		Flint, fragment, not used	2
07E0820:62:5	-	62	11	Flint flake, intact 32mm	1
07E0820:62:6	-	62	11	Flint flake 21mm	<1
07E0820:62:7	-	62	11	Core/bashed lump (1 removal)	3
07E0820:62:8	-	62	11	Flint spall, 11mm	<1
07E0820:72:1	-	55/62		Flint, fragment, not used	<1

Stone by Dr Michelle Comber

07E0820:51:1 Whetstone (Fig. 7)

Rectangular piece of fine-grained sandstone, rectangular in section. Almost complete, one fragment missing. The broad faces of this piece are relatively flat with occasional bruising or pecking. The two

long sides, however, are polished smooth, probably from use as a whetstone. Their adjacent long edges/angles are rounded and either chipped or work smooth. The two ends are flat, though rough.

132mm x 60mm x 46mm

58mm x 60mm x 13mm missing fragment

07E0820:51:2 Worked stone (Fig. 8)

Sub-rectangular block of fine-grained sandstone, sub-rectangular in section. One side is moderately smoothed, the other surfaces rough and uneven. One broad face may have been deliberately worked or shaped to produce a roughly dished surface. This surface shows signs of burning, being both blackened and heat-reddened. In addition, the smooth side bears faint straight-line incisions or cuts towards one end, running across the entire width of the face. Deeper incisions are visible on the 'dished' surface, roughly parallel with the short axis of the block and running across the entire width of the face. The 'un-carved' or raised surface remaining in the corner of this face bears the deepest cuts on the piece, roughly oriented along the stone's long axis. This block of sandstone was brought into the site for a specific reason, and has clearly been used for sharpening metal blades, and very possibly associated with a fire or hearth of domestic or industrial nature. The piece may constitute a fragment of a larger block possibly used as a hearth-stone and casual whetstone, or possibly an anvil upon which some material, such as metal, was worked.

228mm L x 145mm W x 130mm Th.

18mm max. observed depth of 'dished' surface

60mm L x 1mm W x 1mm D (deepest incisions)

07E0820:51:3 Blackened stone

Fragment of partially blackened stone. Impossible to determine if it has been deliberately shaped or worked. The source of the discolouration is uncertain, possibly proximity to a fire. Similar to 51:8.

66mm x 67mm x 45mm

07E0820:51:4 Worked stone (Fig. 7)

Small fragment of sandstone with flat surface. This surface is blackened and bears a number of shallow, straight scratched lines at varied angles. There is also an area of pecking or bruising near the centre. It appears that the flat surface was used for cutting and/or hammering some material. The blackening may be due to proximity to a fire.

92mm x 59mm x 40mm

47mm L longest scratch

24mm x 18mm area of pecking

07E0820:51:5 Worked stone (Fig. 7)

Fragment of rounded sandstone with one smooth side and adjacent edge/angle. Uncertain whether or not the rounded profile is natural or artificial, or if the smooth surface was deliberate or caused by wear. There are a couple of straight, short incisions or cuts across the rounded angle next to the smooth face. This might suggest that the stone had been used as a whetstone at some point.

102mm x 104mm x 54mm

17mm L x 1mm D longest cut

07E0820:51:6 Stone with accretion (Fig. 7)

Sub-triangular fragment of sandstone, broken along 'base' of triangle. Sub-rectangular in section. Four of its surfaces bear accretions that appear metallurgical in appearance, possibly slag. One side face is possibly fire- or heat-reddened. It is not possible to determine whether or not the stone itself has been deliberately shaped, though it was clearly brought to the cashel for a specific purpose. It appears to have come into contact with metalworking residue.

112mm x 122mm x 66mm

4mm max. Th. of accretion

07E0820:51:7 Whetstone (Fig. 7)

Rectangular piece of sandstone, square with rounded corners in section. Broken at one end. All four faces and long edges are smooth and appear to have been used for sharpening or smoothing some material. Three of the faces have also been used for hammering, each bearing areas of obvious bruising or pecking. The unbroken end is heavily chipped and bruised and may also have been used for hammering.

89mm x 39mm x 37mm

1mm max. D of pecking

07E0820:51:3 Blackened stone

Fragment of partially blackened stone. Impossible to determine if it has been deliberately shaped or worked. The source of the discolouration is uncertain, possibly proximity to a fire. Similar to 51:3.

77mm x 59mm x 28mm

07E0820:55:1 Quernstone (Plate 28 and Fig. 9)

Four co-joining fragments of the upper stone of a rotary quern. Made of coarse, quartz-rich sandstone, ideal for grinding. The grinding surface shows signs of wear from use. The stone is well-shaped along its edges (being gently rounded) and upper surface. Although the latter is not polished, it is flat. Approximately half of the stone is represented by these fragments, including at least half of the central perforation, and two smaller perforations or 'handle-holes'. These latter appear to have been carved out from the upper surface, as they narrow towards the lower surface. The sides of the central perforation are vertical with slightly rounded upper and lower edges. Two broad and shallow lines have been carved or 'pecked' into the upper surface of the stone, concentric with the central perforation. These give the impression of a raised lip and collar around the central hole, purely decorative in nature.

480mm original diameter

75mm diameter of central perforation

17–34mm diameter of intact handle-hole, 27–39mm diameter of cracked handle-hole

40mm max. Th., 33mm Th. at centre

07E0820:55:7 Worked stone (Fig. 8)

Sub-rectangular block of fine-grained sandstone, rectangular in cross-section. Both of the broad faces have been polished smooth, either deliberately or through use. The other surfaces are uneven and rough. Three of the long angles of the piece are also worn smooth. Sandstone is not found in the immediate area, so this fragment has been imported for a specific purpose, either structural or artefactual.

220mm L x 138mm max. W x 73mm Th.

07E0820:62:1 Stone mould/whetstone (Plate 29 and Fig. 7)

Two adjoining fragments of rectangular, fine-grained sandstone, rectangular in section. A carefully shaped piece, though incomplete, being broken at one end. Two of the long faces have been used as a whetstone, with one bearing a straight cut or incision and a much shorter cut or notch. There is a third, short, cut at the top, unbroken, end of this face. One of the narrower faces bears a tapering groove, running from the broken end of the piece and tapering to a point. The groove is D-shaped in section and probably functioned as a mould for making dress-pins. If so, it may have constituted part of a bi-valve mould. A very small accretion near the tip of the groove may be metallurgical in nature?

81mm x 22mm x 18mm

21mm L x 1mm D longest cut

20mm L x 4mm max. W x 2mm max. D pin-groove

07E0820:62:4 Quernstone (Fig. 9)

Three adjoining fragments of the upper stone of a rotary quern. Made from a coarse, quartz-rich red sandstone, ideal for grinding. The surviving fragments stretch from the edge of the central hole to the original edge of the stone. The latter is finely rounded and both it and the working surface of the stone

show signs of wear due to use. The upper surface of the stone is very roughly shaped and remains quite uneven, with no sign of any carved decoration. A relatively thin, light quernstone.

200mm from edge to central perforation

280mm max. L of largest fragment

490mm estimated original diameter of quernstone

90mm estimated original diameter of central perforation

13mm Th. at edge, 38mm max. Th., 28mm Th. at centre

Metal artefacts by Dr Michelle Comber

07E0820:55:3 Iron arrowhead (Fig. 10 and Plate 30)

Finely-made iron arrowhead. A long, slender object, originally barbed and tanged at one end, and tapering to a fine point at the opposite end. The tang is missing, and one of the basal barbs is incomplete. The surface bears some corrosion, but is in relatively good condition.

102mm L x 17mm max. W x 6.5mm max. Th.

7.7mm L x 3.5mm x 2.5mm intact barb

5.5mm W of tang

1.4mm x 1.1mm point

07E0820:55:6 Iron point (Fig. 10 and Plate 31)

Conical iron object. Corroded, though complete. It has a shallow socket at its broad end, and tapers to a point at the opposite end. Very symmetrical despite the corrosion. Possibly a ferrule or point for a goad or javelin-type implement.

62mm L

1.6mm diameter of point

18mm external diameter of socket, 12mm internal diameter of socket

6mm max. D of socket

07E0820:57:1 Iron fragment (Fig. 10)

Small fragment of corroded iron, broken at one end. Trapezoidal in shape, rectangular in section. Possible nail or pin head. Widens and thickens towards top.

13mm L x 4 – 8mm W x 3 – 6mm Th.

07E0820:57:2 Iron fragment (Fig. 10 and 32)

Slightly curving or bent strip of tapering corroded iron. Broken at one end and hammered to a flat point at opposite end. Rectangular in section for most of its length, sub-circular towards the pointed end. May be too flat to be a nail, more likely a hook or part of a clasp or buckle.

35mm L x 1 – 9mm W x 2.5mm Th. (4mm Th. at point)

07E0820:62:3 Iron fragment (Fig. 10)

Three adjoining fragments, probably iron. Broken at both ends and perforated longitudinally. Both ends splay outwards. A piece of a larger, unidentified, object.

21mm L x 4 – 7mm diameter

1mm diameter perforation

Three of these iron artefacts (arrowhead 07E0820:55:3, iron point 07E0820:55:6 and iron fragment 07E0820:57:2) have been cleaned and conserved by recognised conservator Susannah Kelly (University College Dublin). The artefacts were mechanically cleaned, airabraded with 88 micron aluminium oxide powder, dried at 35°C for 96 hours, coated in 5% paraloid B72 in acetone and then sealed in microcrystalline wax.

Bone artefacts by Dr Michelle Comber

07E0820:55:4 Fragments of bone comb (Fig. 11 and Plate 34)

Six adjoining fragments of a bone comb. The surviving stubs of the teeth indicate that the comb was single-sided. It comprised a central tooth-plate sandwiched between two semi-circular sectioned side-plates, all three secured together with small iron rivets. The rivets are evenly spaced every 11mm. Excluding the teeth, the piece is almost complete, with one end missing. There is no obvious decoration as the original surface of the comb is almost completely degraded, though it does appear to have been polished. It is clear that the teeth were carved or cut after the three pieces had been assembled, as the cut marks continue across the bottom surfaces of the side-plates.

138mm L x 9mm W x 8mm Th.

07E0820:55:18 Point of bone pin (Fig. 11)

Slender straight fragment of bone, tapering to a now-rounded point. Circular in cross-section. Probably made from a pig fibula. The original surface, where visible, is polished smooth. There is a vertical cut or scratch running along three-fifths of the length, and represents either decoration or damage.

26mm L x 3mm max. diameter

14mm L x 1mm W x 1mm D cut

07E0820:55:20 Worked bone (Fig. 11 and Plate 33)

Right-angled fragment of a small animal bone with a series of deliberate, roughly parallel nicks or cuts along one side. Reason for cutting is unknown – the piece does not resemble any known artefact type in its current state.

22mm L x 5.5mm max. diameter/Th.

4mm max. L of cuts, 1mm max. D of cuts

Animal bone by Dr Emily Murray

Introduction

A total of 15,685 grammes of bone was recovered from thirteen contexts. This total includes dry sieved, wet sieved and hand recovered bone. The bones were generally in a good condition and well-preserved and the majority were recovered by hand-collection (86%), with a smaller sample retrieved through the sieving of bulk samples (14%). Faunal remains were recovered from contexts dating to all four phases of activity (Table 2) identified at the site but with the largest share, 73%, deriving from the main period of occupation of the cashel during the medieval period, roughly spanning the late tenth to twelfth centuries AD (Phase II). Animal bones were also found in contexts dating to the construction levels of the cashel (Phase I) and from late- (Phase III) and post-medieval (Phase IV) phases of activity.

Methodology

The method of quantification employed follows that used for the Knowth Early Christian animal bone assemblage described in full in McCormick and Murray (2007). In brief, all of the recovered faunal material was examined in detail but only a selective range of clearly defined bone elements or zones were counted ('countable' specimens) and these represent the 'number of identifiable specimens' totals (NISP). The minimum numbers of individuals (MNI) was calculated for the medieval (Phase II) assemblage only and was based on the frequency of the most commonly found bone, taking sides, but not state of fusion, into consideration. Tooth wear stages for cattle and pig follow Grant (1982) and Payne (1973 and 1987) for sheep and ageable mandibles were assigned to the mandibular wear stages (MWS) of Higham (1967). The state of fusion of post-cranial bones was also recorded for all species and measurements were taken on all fused and unburnt bones follow the criteria of von den Driesch (1976). The metrical data is presented in Appendix 5.

Results

Domesticates

The range of species recorded from Caherconnell comprised the usual domesticates found on medieval sites in Ireland namely cattle, sheep/goat, pig, horse, dog and cat (Table 3). Medieval contexts (Phase II) yielded the largest sample of countable animal bones with a NISP of 305 (Fig. 12), of which cattle accounted for 42% followed by sheep/goat 33% and then pig 22% (Tables 2 and 3; Fig. 13). The relative frequencies of these principal species differ in the Phase II sieved assemblage (Fig. 15) suggesting a greater role played by sheep (51%) and pig (32%), and this is also implied by the estimated MNIs for the assemblage (Table 4; Fig. 14). The later medieval assemblages from Caherconnell (hand-collected and sieved – Figs 13 and 15, and Table 3) also suggest a much greater role played by sheep while the post-medieval assemblage (hand-collected) suggests the increased role of cattle (63% NISP) at the expense of sheep (17%). There are many issues associated with the quantification of animal bones from archaeological sites (see McCormick and Murray 2007, 9-11) and assemblages must be of a considerable size to allow any valid assessment. The phased assemblages from Caherconnell are too small to facilitate any detailed analysis. This is demonstrated by the range of possibilities presented in Fig. 14, in which in the results from different quantification and collection methods are compared. The general picture that emerges however, appears to be that cattle and sheep were farmed in fairly equitable numbers and with pig playing a less significant role. A greater frequency of sheep relative to pigs has been noted on other sites located on or near the coast from the earlier medieval period including Dún Eoghanachta on Inis Mór in the Aran Islands, Larrystone Co. Antrim and Rathgurreen Co. Galway (McCormick and Murray 2007, figs. 5.1 and 5.2) as the environments in the vicinity of these sites, and also Caherconnell, are more suited to sheep rearing than for pigs. The nearby stone fort of Cahercommaun, occupied between the fifth and ninth centuries AD, also produced the same range of domesticates and despite the crude methods of quantification employed, it was noted that pig were much less common than on other sites of the period (McCormick and Murray 2007, 203). In terms of meat consumed however, beef would have far outweighed any other meat consumed and indeed pigs may also have contributed marginally more meat than sheep to the diet of the occupants (see McCormick and Murray 2007, table A1:3.3).

For the Phase II assemblage the full range of skeletal elements for cattle, sheep and pig were recorded (Table 4) indicating that the animals must have been killed in or close to the cashel and that all parts of the carcass were brought on site and presumably utilised. Evidence of butchery was largely limited to the cattle bones and included chop and knife marks, indicative of dismemberment and defleshing. Direct signs of cooking were limited to just one countable specimen, a cattle tibia (Phase II), which had been partly singed. Ageing data was very limited (Tables 5 and 6) but indicates that some cattle, probably bullocks, were killed before reaching their second year. This age-slaughter pattern fits within the dairy model and has been widely recorded for Early Medieval sites in Ireland (McCormick and Murray 2007, 51-54). Metrical data was also restricted and included just two distal metacarpals, probably from cows (distal breadth <55mm) and one estimated withers height of 114.6cm which falls within the recorded range of cattle stature from medieval Ireland (*ibid.*, 79-81).

Only one goat element (horncore) was positively identified and it is probable therefore that the majority of sheep/goat bones from Caherconnell derive from sheep. The goat horncore (Phase IV) displayed chop marks at the horncore-skull juncture indicating the removal of the horncore and sheath from the carcass, possibly also with the hide still attached. A sheep horncore found in the same context also displayed cut marks in the same location.

Two minor palaeopathologies, both sheep, were recorded. One was a terminal phalange from a Phase II context which had an expanded articular facet and some pitted extra bony growth along its plantar side. The second specimen was a mature sheep mandible (Phase III), and the three molars in the mandible displayed abnormal coral-like roots. Both pathologies can be classed as typical degenerative lesions of more mature animals, which would have arisen through physical stresses undergone during

the course of the animals' lives. The limited age-slaughter data for sheep (Tables 5 and 6) also indicates the presence of older sheep.

Dog (NISP 1) and horse (NISP 4) were represented almost exclusively by loose teeth and additional evidence for dogs was represented by gnawed bones (5%). Cat bones were marginally more common and included a mandible (Phase II) with a fine knife mark on its buccal aspect indicative of skinning. Cat bones displaying signs of butchery and/or skinning are not uncommon on medieval sites in Ireland though they are relatively more frequent on urban sites (McCormick 1988) and include examples from high medieval contexts in Galway city (Murray 2004, 589). Rural examples have also been recorded including at Raystown and Knowth both in Co. Meath (Murray unpublished; McCormick and Murray 2007, 48-51).

Wild mammals, bird and fish

Remains of wild animals were uncommon (3% NISP) and included red deer, hare, rat and amphibian. A small number of bird bones were also recovered (n. 6) represented by 'non-countable' and fragmentary elements only and of these just one specimen, part of a skull, was identifiable as domestic fowl/pheasant. Two bones from a small, probably commensal, bird species were also recovered. Fish was represented by a single unidentifiable fragment (part of a vertebra) from a Phase II context. Extensive sieving was undertaken at the site which would suggest that this low incidence of bird and fish is real and a low frequency of wild faunal remains is a typical feature of secular Early Medieval sites (McCormick and Murray 2007, 104). The only exceptions to this pattern are coastal sites where marine species, bird, fish and marine molluscs are often found and a fragment of a scallop shell, probably of the great scallop (*Pecten maximus*), was recorded from a Phase II/III context at Caherconnell.

Red deer was represented by a single complete toe bone (proximal phalanx) from a later medieval, Phase III, context. There were no signs of any surface modification and it is probable that it was imported onto the site as part of a deer hide. Hare was represented by two loose teeth, fragment of humerus and metapodial found with other food waste suggesting hare also on occasion trapped and eaten.

Amphibian bones comprised a humerus and pelvis and a couple of vertebrae ('non-countable') and were recovered from the floor surface of Structure A (Phase III). It is probable that these bones are intrusive and the animal may have buried itself in amongst the stones and occupation deposits within the cashel when hibernating. The contemporaneity of the few rat bones is less clear but it is possible that they may also be intrusive.

Conclusion

The animal bone assemblage from Caherconnell indicates that the occupants ate beef, mutton and pork and presumably farmed these animals in the vicinity of the cashel and this pattern of exploitation is similar to other secular sites of the medieval period. Other animals also kept included horses, dogs and cats, possibly just one of each at any time along with a small number of domestic fowl. Hunting was of a low priority and with the exception of the one fragment of scallop shell and possibly the fish bone, it would seem that the resources of the shore and sea, less than ten kilometres away to the north at Ballyvaghan bay, were otherwise ignored. Indeed the single scallop shell may have been kept as a souvenir and therefore not represent food debris. The butchery evidence and range of elements represented would suggest that the main meat animals were butchered within in the vicinity of the cashel, and that most if not all parts of the carcass were utilised. Hides and pelts were also either part processed or at least stored on the site and included skins of cat and cattle, and probably also the occasional goat and deer hide. Horn was also utilised although there is no direct evidence for bone or antler working.

Table 2: Animal bone. Frequency of countable specimens (NISP) for the hand-collected (HC) and sieved (sv) assemblages by phase, context and feature.

Phase		Context	Feature	Description	NISP (HC)	NISP (sv)	Total (NISP)	% <i>NISP</i>
I	pre-Early Medieval	65	pre cashel	layer	6	-	6	1.2
II	Early Medieval	55	cashel	layer -internal	265	15	280	58.1
II	Early Medieval	74	cashel	layer -internal	9	-	9	1.9
II	Early Medieval	62	cashel	layer -internal	28	30	58	12.0
II	Early Medieval	69	cashel	layer -internal	3	2	5	1.0
II/III	E/L medieval	76	structure A		13	-	13	2.7
II/III	E/L medieval	73	cashel		5	-	5	1.0
III	Later medieval	57	structure A	floor surface	5	5	10	2.1
III	Later medieval	60	structure A	layer internal	-	1	1	0.2
III	Later medieval	64	structure A	deposit below doorstep	2	-	2	0.4
III	Later medieval	67	structure A	layer ext threshold	5	10	15	3.1
III	Later medieval	72	cashel	layer -internal	15	-	15	3.1
III	Later medieval	75	structure A		4	-	4	0.8
IV	Post medieval	50	topsoil	topsoil	14	-	14	2.9
IV	Post medieval	52	structure A	tumble internally	7	-	7	1.5
IV	Post medieval	58	structure A	tumble externally	38	-	38	7.9
Total					419	63	482	

Table 3: Animal bone. Frequency of ‘countable’ specimens (NISP) for the hand-collected and sieved assemblages by phase and species.

* = species represented by non-countable specimens only.

	Hand- collected (n. 419)	Sieved (n. 63)						
	10-11thC	Medieval	E/L medieval	Later medieval 15-E17thC	Post medieval	Medieval	Later medieval	
	Phase	I	II	II/III	III	IV	II	III
Cattle	<i>Bos taurus</i>	1	127	5	7	37	6	1
Sheep/ Goat	<i>Ovis/Capra</i>	5	101	5	18	10	24	9
Pig	<i>Sus domesticus</i>	-	68	8	3	8	15	2
Red deer	<i>Cervus elaphus</i>	-	-	-	1	-	-	-
Dog	<i>Canis familiaris</i>	-	-	-	-	1	-	-
Cat	<i>Felis catus</i>	-	4	-	-	-	1	-
Horse	<i>Equus</i> sp.	-	2	-	-	2	-	-
Hare	<i>Lepus</i> sp.	-	3	-	-	1	1	-
Rat	<i>Rattus</i> sp.	-	-	-	-	-	-	3
Amphibian	-	-	-	-	2	-	-	1
Bird	-	-	*	-	-	-	*	*
Fish	-	-	-	-	-	-	*	-
	Total NISP	6	305	18	31	59	47	16
	% NISP	1	73	4	7	14	75	25

Table 4: Animal bone. Frequency by species and element for the medieval, Phase II, hand-collected (HC) assemblage

Phase II (HC)	Cattle	Sheep/ Goat	Pig	Horse	Cat	Hare
horncore	1	2	-	-	-	-
skull	5	2	2	-	-	-
LXT	22	28	14	2	-	-
LMT	35	27	8	-	-	-
LT	-	-	-	-	-	2
mandible	2	2	4	-	1	-
atlas	2	-	2	-	-	-
axis	2	-	-	-	-	-
scapula	-	4	2	-	-	-
humerus	3	3	-	-	-	-
radius	6	5	5	-	-	-
ulna	1	3	2	-	-	-
metacarpal	5	1	2	-	-	-
carpal	1	-	-	-	-	-
pelvis	3	3	4	-	-	-
femur	3	4	1	-	-	-
tibia	5	5	-	-	1	-
patella		1	1	-	-	-
astragalus	6	1	1	-	-	-
calcaneum	5	3	2	-	-	-
metatarsal	5	1	2	-	2	-
metapodial	-	1	5	-	-	1
tarsal	4	1	-	-	-	-
phalanx 1	5	1	1	-	-	-
phalanx 2	3	-	4	-	-	-
phalanx 3	3	3	6	-	-	-
NISP	127	101	68	2	4	3
% NISP	42	33	22	1	1	1
MNI	3	3	3	1	1	1
% MNI	25	25	25	8	8	8

Table 5: Animal bone. Tooth eruption and wear data for ageable cattle (*Bos*), sheep (*Ovis*) and pig (*Sus*) mandibles from the hand-collected assemblage by Phase (Ph) and context (C). Toothwear for cattle and sheep follows Grant (1982) and for sheep follows Payne (1973 and 1987). The mandibular wear stages (MWS) and estimated ages are after Higham (1967).

Ph.	C.	Taxa	dp2	dp3	dp4	P2	P3	P4	M1	M2	M3	MWS	est. age in mths
II	55	<i>Bos</i>	p	p	j	0	0	0	f	H	0	9/10	16-18
II	55/59	<i>Bos</i>	0	0	0	0	0	0	X	b	C	12	24
II	62	<i>Ovis</i>	0	0	0	A	p	14A	15A	9A	11G	17	adult
III	67	<i>Ovis</i>	0	0	0	0	0	X	15A	9A	11G	17	adult
II	55	<i>Sus</i>	x	x	g	0	0	0	b	C	0	11/12	9-11
II	55	<i>Sus</i>	0	0	0	0	0	0	X	X	E	19	19/21
II/III	55/59/ 60/67	<i>Sus</i>	0	0	0	0	0	0	X	X	H	19	19/21

Table 6: Animal bone. Frequency (number) of fused and unfused epiphyses for cattle, sheep and pig for the Phase II assemblage
d. = distal; p. = proximal.

Phase II		cattle		sheep		pig	
		fused	unfused	fused	unfused	fused	unfused
Early fusing	humerus d., radius p.	4	0	5	0	2	1
	phalanx 1 & 2 p.	9	1	3	0	4	2
Middle fusing	tibia d., metapodials d.	3	0	7	0	1	5
	calcaneum p.	0	1	0	1		1
Late fusing	humerus p., radius d., ulna p., femur p., femur d., tibia p.	6	4	3	4	1	3
		22	6	18	5	8	12
		78.6		78.3		40	

Slag by Lynne Keys

Iron slag was recovered from contexts 55, 62 and 55/62 and these deposits are thought to be Early Medieval in date.

A tiny assemblage weighing 52g was examined by eye and tested with a magnet. Most was iron slag except for the fuel slag from 72:2 which is not indicative of any specific industrial activity and may have originated from domestic activity or the accidental burning down of huts. The pieces from 55 and 62 are slightly magnetic.

The iron slag fragments were too small and abraded to reveal whether they were produced by smelting (primary production of iron from ore in a furnace) or smithing.

Table 7: Catalogue of slag

Find No.	Deposit	Sample	Slag identification	No. pieces	Weight (gm)
07E0820:55:5	55		undiagnostic	1	2
07E0820:62:2	62		undiagnostic	1	35
07E0820:62:9	62	11	undiagnostic	1	14
07E0820:72:2	72		fuel ash slag	3	1
Total					52

Samples

A catalogue of samples is given as Appendix 4.

Twenty-one samples were taken on site and these include hand-picked charcoal, wood, snail shell, mortar and bulk soil samples. A sample of possible metal residue was subsequently taken from the surface of find 51:6. Six samples were also taken from the surface of two quernstones (Hardy below).

A total of 593 litres of bulk soil samples, from nine contexts, was taken from the site. These samples have been 100% processed and all has been floated for charred plant remains and wet sieved through a 300micron and then a 2mm gauze by TVAS (Ireland) Ltd staff. Bone and slag were recovered during this processing. Stone was retained from one of the sieved sample for geological analysis.

Sample 12, context 61 was a piece of timber from the doorway of Structure A. The timber, that was very poorly preserved, had a total weight of 1231 grammes and measured 0.03m by 0.84m.

Small pieces of degraded timber were also found in deposit 64 (sample 30) from beneath the doorway and from deposit 57 (sample 29) above timber context 61.

Timber by Susan Lyons

Introduction

Three waterlogged wood pieces were submitted for wood species identification.

Methodology

The wood fragments were washed and visually examined for the presence of bark or any other obvious external features. No root material was identified. Thin slices were cut from the material with a razor blade to obtain the three planes (transverse, radial and tangential sections) necessary for microscopic wood identification.

The thin sections were mounted onto a glass slide with a temporary water medium and sealed with a cover slip. Identifications were conducted under a transmitted light microscope and viewed at magnifications of 4x, 10x, 20x and 40x where applicable.

Wood identifications were made using wood reference slides and wood keys devised by Schweingruber (1978) and the IAWA wood identification manuals (Wheeler et al 1989).

Results

Table 8: Catalogue of timber

Cut	Deposit	Sample	Wood Identification
-	57	29	Taxus baccata (yew)
-	61	12	Taxus baccata (yew)
-	64	30	Taxus baccata (yew)

Carbonised plant remains and charcoal by Lucy Cramp

Introduction

Eighteen environmental samples were obtained. Bulk soil samples were wet-sieved and then floated over a 300micron and a 2mm mesh and the organic flots, along with fragments of hand-picked charcoal, were assessed for the presence of preserved plant macrofossils. Those considered to contain useful and identifiable material were then analysed in detail for information that might aid palaeodietary, palaeoeconomic and/or palaeoenvironmental reconstruction at the site.

Identification

All flots were sorted under a low-power binocular microscope in order to recover preserved plant macrofossils. Seeds, cereal grains and nutshell were identified at x10-x20 magnification. Analysis of charcoal was performed using a low power binocular microscope (x10-x45 magnification) and a high power polarising light microscope (up to x450 magnification) for the further examination of the radial and tangential sections. Where charcoal was particularly concentrated, a representative sub-sample consisting of 20 fragments was taken for identification purposes. Charcoal was identified with reference to a modern reference collection and Schweingruber (1978).

Results

Twelve samples, consisting of nine bulk soil samples measuring between 7 and 425 litres, and three samples of hand-picked charcoal, were considered worthy of further analysis. The material which could be identified mainly comprised wood charcoal; however, carbonised cereal grains and nutshell were also recovered from five deposits. One charcoal type proved unidentifiable.

The plant and tree species that were represented in the environmental samples taken from deposits at Caherconnell cashel are listed in Table 9 (plant remains other than charcoal) and Table 10 (charcoal). Quantification is provided in absolute terms for grains and seeds whilst nutshell and wood charcoal fragments are quantified according to a 3-point scale of + present ++ some +++ much.

Discussion

Cereal grains were recovered in low quantities from five deposits. The cereals comprised wheat, including free-threshing bread or rivet wheat (*Triticum aestivum* or *turgidum*) and barley (*Hordeum* sp.). Oats (*Avena* sp.) were also identified, although these could not be confirmed as the cultivated species and they are known to grow as wild contaminants amongst other cereal crops. The frequency

of cereal grains was relatively low (<0.3 grains/litre) and there is no evidence from cereal chaff or arable weed seeds to indicate the processing or storage of uncleaned grain or ears/spikelets.

Fragments of carbonised hazel nutshell (*Corylus avellana*) were relatively common in the environmental samples and a single hazelnut was also recovered. As an edible nut, these remains may derive from the disposal of waste resulting from the consumption of the nuts. However, it is alternatively equally likely that the burnt shell and nut are simply by-products from the burning of hazel wood as a fuel-type and indeed, hazel charcoal was common in all of the deposits from which hazel nutshell was recovered (Tables 9 and 10). A very small number of weed seeds, including bramble (*Rubus fruticosus* agg.) and an unidentifiable grass seed, were also found.

A mixture of shrubs and trees were identified in the wood charcoal from Caherconnell deposits. The most abundant types were hazel (*Corylus* sp.), ash (*Fraxinus excelsior*) and hawthorn-type wood (Pomoideae). Blackthorn/cherry type charcoal (*Prunus* sp.) was recovered from two samples taken from deposit (55), whilst a single fragment of birch (*Betula* sp.) was also identified from deposit (60), deriving from the internal threshold of the doorway of Structure A.

In addition, a low number of fragments of an unidentifiable charcoal-type were recovered from three different deposits. These fragments carried the majority of characteristics of Pomoideae charcoal but only uniseriate rays were found, without any bi- or triseriate rays which would be expected for wood from this family. The most likely explanation is that these charcoal fragments derive from very young Pomoideae wood.

Conclusions

Twelve samples taken from deposits that were excavated in the trench investigating Structure A at Caherconnell cashel produced identifiable plant macrofossils and charcoal. The low number of wheat, barley and oat grains is consistent with expectations for a background scatter deriving from a site that is medieval in date. The charcoal species that were identified demonstrate a mixed fuel economy utilising scrub and trees such as hazel, hawthorn, blackthorn, ash and birch that were likely to have been growing nearby.

Table 9: Plant remains. Material was represented by grains/seeds unless otherwise specified

+ present ++ some +++ much

Phase		I	II		III							IV	
Deposit		65	62	69	55						67	60	58
Sample		14	11	20	1	2	5	7	10	17	15	16	6
Sample volume (litres)		28	425	14	-	14	-	7	-	7	35	7	7
Cereals													
Free-threshing <i>Triticum</i> sp. (<i>aestivum</i> or <i>turgidum</i>)	Free-threshing bread or rivet wheat										1		
<i>Triticum</i> sp.	Wheat											1	
<i>Hordeum</i> sp.	Barley	1	3								1	1	
<i>Avena</i> sp.	Oat	1	1								4		
Cereal indet.		1									1		
<u>Grains/litre</u>		<u>0.1</u>	<u>0.01</u>								<u>0.2</u>	<u>0.3</u>	
Other plants													
<i>Corylus avellana</i> - nutshell	Hazel nutshell		++	+							+	+++	
<i>Corylus avellana</i> – nut	Hazel nut		1										
<i>Rubus fruticosus</i> agg.	Blackberry	1	1										
Gramineae indet.	Grass		3									1	

Table 10: Charcoal

+ present ++ some +++ much

Phase		I	II		III							IV	
Deposit		65	62	69	55						67	60	58
Sample		14	11	20	1	2	5	7	10	17	15	16	6
Sample volume (litres)		28	425	14	-	14	-	7	-	7	35	7	7
<i>Betula</i> sp.	Birch											+	
<i>Corylus</i> sp.	Hazel	+	+++	++	++	++	++			+++	+++	++	
<i>Prunus</i> sp.	Blackthorn, cherry etc.				+		++						
Pomoideae	Hawthorn, apple etc.		++		+	+	++	+	+			+	+
<i>Fraxinus excelsior</i>	Ash	+	+++	++	+	+		+		+++	+++		
Indet.			+							+	+		

Residue analysis of surface material from two quernstones by Dr Karen Hardy

Six samples were analysed from two quernstone pieces. Three samples were taken from artefact 62:4, samples 23 and 24 from the grinding surface and sample 25 from the exterior surface. Three samples were taken from artefact 55:1. Two samples (26 and 27) were taken from the grinding surface, one sample was taken from the exterior surface (28).

Extraction method

The samples were separated into two parts, one for starch extraction and the second part for phytolith extraction. In the event, the first series of samples for starch extraction were accidentally destroyed and a second sample set was supplied for the starch analysis.

Phytoliths

A phytolith ("Plant stone") is a rigid microscopic body that occurs in many plants. Because they are made of the inorganic substances silica or calcium oxalate, phytoliths do not decay when the rest of the plant decays over time and can survive in conditions that would destroy organic residues. Phytoliths can provide evidence of both economically important plants and those that are indicative of the environment at a particular time period.

Samples were placed in small eppendorf tubes and a small amount of HCl (10%) was added to remove carbonates. These were left for a short time, until all fizzing had ceased. Ultrapure water was then added and samples were vortexed then centrifuged at 1500rpm for 5 minutes. The supernatant was removed and water was added, samples were vortexed and centrifuged. This step was repeated twice to clean samples. Samples were then placed in 5% calgon solution (calgon = sodium hexametaphosphate) for one hour, then the supernatant was siphoned off, water was added and the samples were vortexed. This step was repeated until the samples were clean (3 times). The aim of this step is to deflocculate the sample. Finally the samples were sieved through a 250micron sieve. Once all the preparative steps were complete, samples were placed in 3mls of LST Fastfloat heavy liquid (at 2.38 specific weight). Samples were centrifuged at 1500rpm for 15 minutes then the supernatant was siphoned off. Samples were then washed and centrifuged 3 times with water and finally once with acetone. Samples were then dried overnight.

Starches

A second batch of samples was supplied and the following starch extraction protocol was carried out. Samples were placed in small centrifuge tubes in preparation for the heavy liquid extraction. Three mls of LST Fastfloat heavy liquid (at 1.75 specific weight) were placed in each tube. The tubes were then centrifuged at 1000rpm for 15 minutes. The top 1-2mm of liquid were then extracted and placed in a new tube. This was then filled with 6ml of water and centrifuged at 1500rpm for 5 minutes. The supernatant was removed and the process was repeated 3 times. Finally 3ml of acetone was placed in the tube and the same centrifuge process was carried out twice more. Samples were then dried overnight.

Microscopy (phytoliths and starches)

In each case, the sample was placed on a microscope slide and mixed with glycerin which was used as a mounting agent. All samples were scanned using an Olympus IX 71 inverted light microscope at 10x magnifications and the presence of starch granules and other objects were recorded. One microscope slide was mounted per sample. Starch was checked for presence/ absence on each slide. Photography was done using an Olympus digital system (ColorView IIIu) camera at x20 or x60 magnifications.

Results

Phytoliths were found to be present in all samples (Plate 35).

It was not possible to distinguish any concentrations of phytoliths that could be linked to the working surface however phytolith populations were extensive and may well be useful as a way forward for identification purposes and for paleoenvironmental reconstruction on archaeological sites in Ireland. Identification is currently difficult as there is no local reference collection but two (Plate 35, B and F) are probably grasses of some sort. Several other phytoliths could very possibly be identified when a reference collection is in place.

A small number of starches were found to be present in sample 27 (working surface artefact 55:1). (Plate 35). No starches were present in any other sample. The starches were all very similar, small (10-15microns, and slightly oval in outline). It is likely that they all come from the same plant source and it is possible that with a reference collection in place, these could be identified at the very least, to genus level.

Conclusion

The presence of phytoliths is exciting and it is likely these could be identified once a reference collection is in place. The starches were found on the working surface of artefact 55:1.

The results from 55:1 may be linked to its use. Sample 26 (55:1) was the richest in phytoliths and was the only sample to have starches. Once reference collections are in place, it is likely that identification of this material will be possible.

Creation of reference collections should be a top priority as once these are in place, this work, and the identification of other residual material, on pots or in dental calculus for example, will be possible. Meanwhile it is a good idea to continue to take these samples and record the presence of starches and phytoliths so that in the future, when the reference collections are created, further work on identification can be carried out.

Geological analyses by Dr Martin Feely

Deposit 53: Sample 3

This is an aggregate (mortar) of small <5mm lithic fragments (probably limestone) set in a lime cement - a mortar. The cement effervesces vigorously when dilute hydrochloric acid (HCl) is dropped onto it indicating it is limey (CaCO₃).

Deposit 69: Sample 20

This is very different to the other sample. It is light very porous and does not react with HCl. This seems to be more siliceous (not limey) and maybe formed by precipitation from water-based solutions.

Radiocarbon determinations

Five samples were submitted to Queen's University, Belfast for radiocarbon determinations and the results are shown in Table 11

Table 11: Radiocarbon determinations

Lab Code	Deposit	Sample material	Yrs BP	Calibrated date ranges
UBA-8562	57	Sheep bone 3 rd phalange	384 ± 33	AD 1449-1513 and 1600-1617 one sigma AD 1442-1525 and 1556-1632 two sigma
UBA-8563	62	Charred hazelnut (<i>Corylus avellana</i>)	944 ± 44	AD 1029-1054 and 1077-1154 one sigma AD 1017-1188 and 1199-1206 two sigma
UBA-8564	65	Animal bone vertebra fragment	1021 ± 32	AD 989-1027 one sigma AD 901-916, 967-1046, 1090-1121 and 1139-1149 two sigma
UBA-8565	55	Charred hazelnut (<i>Corylus avellana</i>)	447 ± 51	AD 1415-1485 one sigma AD 1400-1524 and 1558-1631 two sigma
UBA-9068	55	Cattle femur	898 ± 18	AD 1050-1083, 1124-36 and 1151-1173 one sigma AD 1044-1099, 1119-1142 and 1147-1210 two sigma

The data was calibrated using Calib Rev 5.0.2 (Reimer et al 2004).

These dates indicate that:

The cashel was probably constructed sometime between the early 10th century and the mid 12th century. There is evidence of occupation material that dates to between the early 10th century and the early 13th century. There is a hiatus in the *excavation record* between the early 13th century and the end of the 14th century. The rectangular structure within the cashel was built and occupied sometime between the early 15th century and the mid 17th century.

The two charred hazelnut shell samples avoid the ‘old wood effect’ as the organism is very short-lived

Deposit 62 is likely to derive from occupation material that was laid down in the period between the early 11th century AD and the early 13th century AD. Deposit 55 produced two differing dates and probably represents a later episode of dumping of mixed settlement material in the period between the early 15th century AD and the first half of the 17th century.

Discussion

The archaeological excavation of a small trench within Caherconnell Cashel has demonstrated that stratified deposits representing Early Medieval and medieval occupation are present. There have been no other published excavations of a cashel in the Burren region since the Harvard Expedition’s pioneering work at Cahercommaun in 1934 (Hencken 1938). The trench at Caherconnell and the ongoing work at Cahermacnaghten (Fitzpatrick pers. comm.) are, then, the only examples of modern archaeological excavations at, or near, these site types in the region.

The high quality artefacts such as the arrowhead, pin-making mould, bone comb and quernstones recovered from deposits 55 and 62 indicate that relatively high-status activity was taking place within the cashel, and dating almost certainly from the very end of the first millennium AD to the first half of the second millennium AD. It is not apparent if the earlier of these deposits (62) represents an *in situ* occupation layer or is derived from elsewhere within the cashel, however deposit 55 is certainly mixed with later material.

The inhabitants of Caherconnell cashel were not only consuming high status artefacts, but were also manufacturing them. The pin-making mould suggests that precious metal was worked on site and the iron slag and possible anvil indicate heavier metalworking processes including ironworking.

The stratigraphically later Structure A, with its doorway in the north side wall, an *in situ* floor and 15th – 17th century radiocarbon dates, represents medieval occupation within the cashel.

Several factors indicate that this site and its occupants were of relatively high status. The imposing morphology of the site, its walls and diameter, sets it apart from the vast majority of cashels in the Burren. The aforementioned well-made artefacts also raise the inhabitants above the standard subsistence farmer. Strategic positioning along a routeway possibly contributed to the importance and wealth of the family at Caherconnell. It is safe to presume that no ordinary farming family would have been in a position to control such a potentially-important routeway. The significance of the site is also reflected in its continued use. The place was clearly of a high-enough status to warrant a desire to be associated with it many years after its initial construction and use.

The results of this excavation are important as they suggest that the cashel was probably built later than previously thought. An analysis of the radiocarbon and dendrochronological dates from excavated ringforts and cashels has shown that the majority were constructed and occupied from the beginning of the 7th century AD through to the end of the 9th century AD (Stout 1997, 24). This work at Caherconnell proposes a construction date sometime between the early 10th century and the mid 12th century (right at the end of the Early Medieval period), and continued occupation until, perhaps, the middle of the 17th century.

The late dates for the cashel's construction and use are not unique, but are significant. O'Connor, in his study of medieval rural settlement in Ireland (1998, 89-94), posed the question 'The medieval ringfort – fact or fiction?', a topic of much debate amongst archaeologists. Very few excavated ringforts (of which there are at least 200) were constructed between the 10th and 13th centuries (according to the dates published by their excavators). Ballyegan, Co. Kerry (Byrne 1991) and Scholarstown, Co. Dublin (Keeley 1985-1987) were built in the 10th century, Shaneen Park (Evans 1950, Proudfoot 1958) and Dunsilly, Co. Antrim (McNeill 1991-1992) in the 11th century, Ballyfounder, Co. Down (Waterman 1958) and Dromore, Co. Antrim (Collins 1968) in the 12th century, and Castleskreen (Dickinson and Waterman 1959) and Seafin, Co. Down (Waterman 1955) in the 13th century. Of these, only the first four are definitely pre-Norman and, therefore, of probable native construction. The later four are all in areas of intense Anglo-Norman activity and may, at the very least, have been influenced by the newcomers.

Whilst other sites continued in use during the 10th to 13th centuries, most of the occupation evidence dies out in the 10th century. Only a few ringforts see continued use into the 12th/13th century; Killanully (Mount 1995) and Lisnagun, Co. Cork (O'Sullivan *et al.* 1998), and Seacash, Co. Antrim (Lynn 1978). Of the remaining sites with habitation evidence dated to these centuries, most are in areas of intense Anglo-Norman activity and may represent Norman take-over and alteration of native settlements.

It is clear from this cursory glance at the excavated evidence that the use of ringforts (earthen raths or stone cashels) after the 10th century is rare, and the building of ringforts even more so. The construction of Caherconnell in the 10th century, then, and its use into the 17th century, marks something of a break from this pattern. This may, in part, be due to its location in a Gaelic-controlled area, and not an Anglo-Norman one. There have been few excavations of this monument type in the western parts of Ireland that were controlled by Gaelic lords in the medieval period. Caherconnell, with its adjacent smaller cashels and enclosures, offers the potential to study continued use of native economic, political and social systems, perhaps from the Early Medieval period through into the 17th century, with the general lifestyle unaffected by direct Anglo-Norman influence.

Further work

Copies of this final archaeological report will be posted on the website of County Clare's Library Service (www.clarelibrary.ie) and on the website of Burren Forts (www.burrenforts.ie).

An illustrated article will be submitted to *Archaeology Ireland*.

The archaeological results are of national significance and the excavation will be published in the *Proceedings of the Royal Irish Academy*.

Graham Hull MIFA MIAI
TVAS Ireland Ltd
24th July 2008

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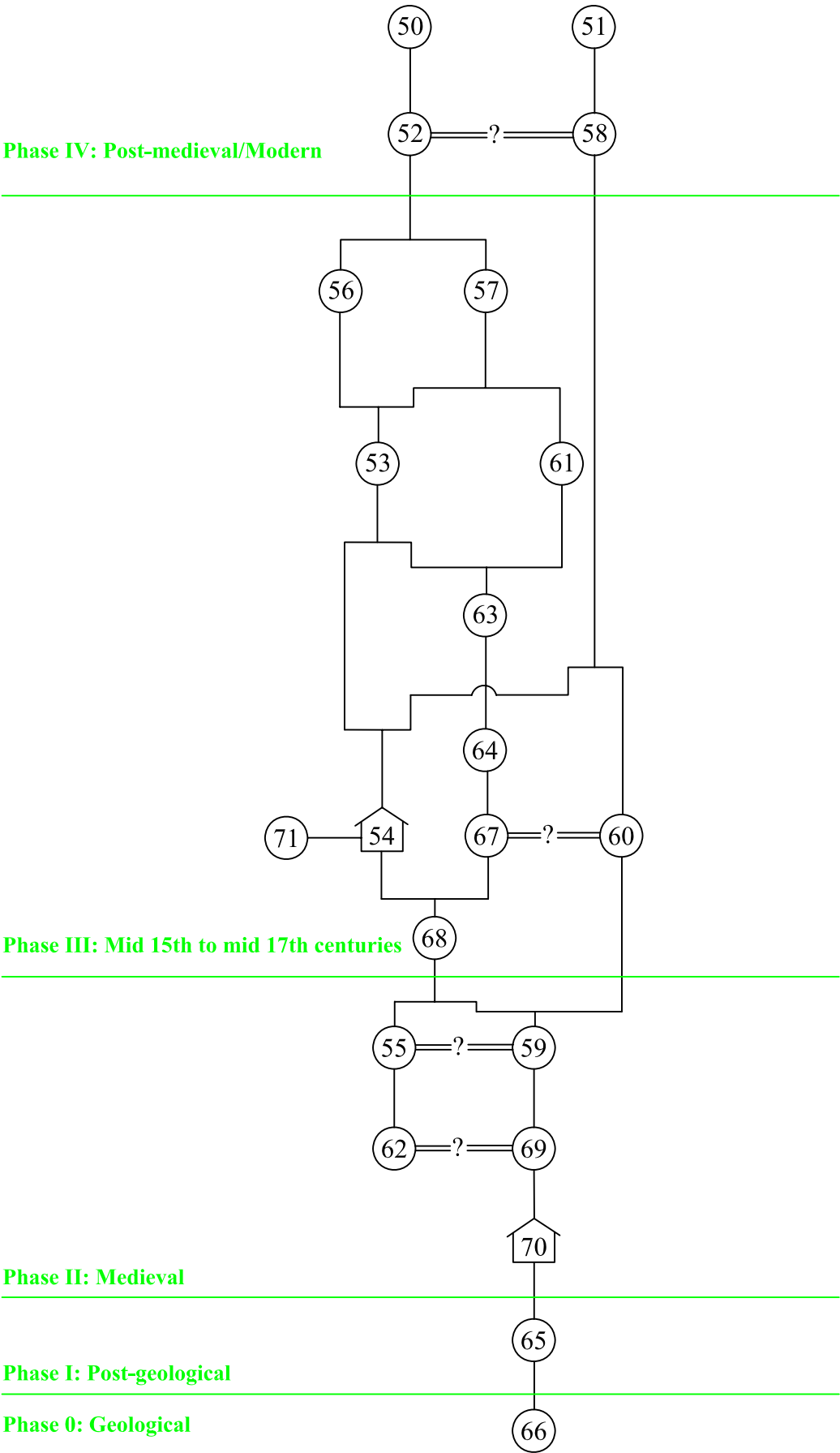
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Appendix 1: Catalogue of features and deposits

Context No.	Description	Finds	Sample No.
50	Topsoil	Bone	-
51	Tumble from cashel wall	Stone	22
52	Tumble from walls of rectangular structure	Bone	-
53	Floor of rectangular structure	-	3
54	North wall of rectangular structure	-	-
55	Deposit beneath floor 53	Stone, bone, lithic, worked bone, metal, slag	1, 2, 4, 5, 7, 9, 10, 17, 26, 27, 28
56	Patch of dark soil on floor 53	-	-
57	Deposit above floor in doorway	Metal, bone	8, 29
58	Tumble and soil between wall 54	Bone	6
59	Deposit below 58	-	-
60	Deposit to N of doorway	Bone	16
61	Timber in doorway	-	12
62	Deposit below 55	Stone, slag, metal, lithic, bone	11, 23, 24, 25
63	Door sill	-	-
64	Deposit below 63	Bone	13, 30
65	Silt overlying 66	Bone	14, 19, 21
66	Limestone bedrock	-	-
67	Deposit below 64	Bone	15
68	Foundation for wall 54	-	-
69	Deposit below 59	Bone	18, 20
70	Cashel wall	-	-
71	Fill in wall 54	-	-
72	Number for finds from mixed deposit 55/62	Lithic, slag, bone	-
73	Number for finds from mixed deposit 55/67	Bone	-
74	Number for finds from mixed deposit 55/59	Bone	-
75	Number for finds from mixed deposit 67/68	Bone	-
76	Number for finds from mixed deposit 55/59/60/67	Bone, shell	-

Appendix 2: Statigraphic matrix



Appendix 3: Catalogue of finds

Find No	Deposit	Sample No	Category	Description	No pieces	Weight (gm)
50:1	50		Bone	animal bone (1bag- lg)	65	397
51:1	51		Stone	whetstone- rectangular, sandstone, pecking on broad faces, long sides worn smooth/polished, both ends flat & worn (132mm x 60mm x 46mm)	1	697
51:2	51		Stone	hearth stone/whetstone/quern fragment (?multiple use/reuse)- sub-rectangular sandstone block, one worn/smooth side (chisel mark at corner?) w/ incisions at one corner & other sides cut smooth, shaped flat. A 'dished' surface (saddle?) blackened, heat-affected w/ long, thin incisions from sharpening tools, other surface roughly hewn. Interesting multiple use? reused/ reshaped? assoc'd w/ metalworking? (228mm x 145mm x 130mmTh)	1	8900
51:3	51		Stone	limestone fragment ?tool- poss grinding/ hammerstone, sub-square, triangular in cross-section, side smooth and base smooth w/pecking evident, blackened, protruding corner pecking, may be a hand held stone tool? (64mm x 70mm (smooth face) x44mm)	1	351
51:4	51		Stone	worked stone (hammer/shapening stone)- sandstone fragment w/ flat surfaces, one slanted, smooth edge, blackened by fire, w/ several incisions- sharpening tools?, pecking (92mm x 59mm x 40mm)	1	283
51:5	51		Stone	worked stone (whet/sharpening/rubbingstone)- red sandstone fragment, rounded w/one wore/smooth side, 2 small incisions/cuts- sharpening tools? (102mm x 104m x 54mm)	1	631
51:6	51		Stone	worked stone w/ metallurgical accretion? (anvil/rubbingstone)- sub-trianagular sandstone fragment, one side worn/pecking apparent, one side face possibly heat-affected (112mm x 122mm x 66mm)	1	1150
51:7	51		Stone	whetstone- rectangular, sandstone, broken at one end, smooth/worn surfaces & one edge rounded/worn, pecking (hammering), end heavily chipped (89mm x 39mm x 37m)	1	232
51:8	51		Stone	limestone sm fragment ?tool- poss rubbing/ hammerstone, irregular shape w/ 2 smooth sides and base (3sides), poss scratches, may be a hand held stone tool?, end blackened (70mm x 80mm (smooth face) x3mm maxTh)	1	139
52:1	52		Bone	animal bone (1bag- med)	37	210
55:1	55		Stone	quernstone- upper part of rotary quern- 4pcs co-joining (a-d), coarse, quartz-rich sandstone, grinding surface shows wear, sides gently rounded, upper surface flat, approx half of stone w/half of central perforation & two 'handle holes' (480mm original diam, 77mm diam central perf, 40mm max Th)	1	
55:2	55		Lithic	chert flake- broken, ?burnt, 21mm	1	<1
55:3	55		Metal	iron arrowhead- finely made, long, thin, barbed & tanged at one end, tapers to fine point, tang missing, one basal barb incomplete (102mm L x 17mm maxW x 6.5mm maxTh)	1	13
55:4	55		Worked bone	bone comb w/ iron rivets- 6 pcs co-joining (a-f), single-sided, central tooth-plate b/w two semi-circular sectioned side-plates, secured w/ small iron rivets spaced evenly at 11mm, appears polished, comb teeth cut after the rivets in place (138mm x 9mm x 8mmTh)	6	8
55:5	55		Slag	slag- undiagnostic	1	2

Find No	Deposit	Sample No	Category	Description	No pieces	Weight (gm)
55:6	55		Metal	conical iron object- goad or javelin-type implement, wood in shaft socket, shallow socket at broad end, tapers to a flat point, symmetrical (62mm L, 18mm diam socket, 1.6mm diam point)	1	11
55:7	55		Stone	worked stone (?whet/hammerstone)- sub-rectangular block fragment, fine-grained red sandstone, broad faces smooth/polished, pecking on two sides, edges uneven/rough-deliberately shaped (220mmL x 138mm maxW x 73mmTh)	1	4000
55:8	55		Lithic	flint- struck, fragment, burnt, not used	1	5
55:9	55		Lithic	flint- struck, fragment, not used	1	<1
55:10	55		Lithic	flint- struck, fragment, not used	1	10
55:11	55		Lithic	flint- struck, fragment, not used	1	1
55:12	55		Stone	igneous rock, accidental flaking/struck	1	2
55:13	55		Lithic	flint- flake, broken, 16mm	1	1
55:14	55		Lithic	flint- sm core/bashed lump, struck, one spall removed	1	1
55:15	55		Bone	fish bone- vitrified	1	<1
55:16	55		Lithic	flint- struck, fragment, not used	1	<1
55:17	55		Lithic	flint- debitage/spall, 11mm	1	<1
55:18	55		Worked bone	bone pin- slender, straight, tapers to rounded point, circular, ?pig fibula, original surface polished smooth, vertical cut/scratch running along 3/5 length- either decoration/damage? (26mm x 3mm max diam)	1	<1
55:19	55		Lithic	flint- struck, fragment, not used	1	2
55:20	55		Worked bone	worked bone- sm animal bone w/deliberate, roughly parallel cutmarks/nicks along one side (22mm x 5.5mm max diam/Th)	1	<1
55:21	55		Bone	animal bone (1bag- lg)	ca110	690
55:22	55		Bone	animal bone- incl 25pcs burnt (2bags- lg & med)	ca450	1013
55:23	55		Bone	animal bone (2bags- lg & med)	ca360	1120
55:24	55		Bone	animal bone (1bag- lg)	ca250	1066
55:25	55		Bone	animal bone (2bags- lg & med)	ca235	919
55:26	55		Bone	animal bone (3bags- lg, med & sm) radiocarbon UB9068	ca240	920
55:27	55		Bone	animal bone (1bag- lg)	ca210	740
55:28	55		Bone	animal bone (2bag- lg & med)	ca260	1006
55:29	55		Bone	animal bone (2bag- lg & med)	ca215	678
55:30	55	2	Bone	animal bone (2bags- med & sm)	ca120	76
55:31	55	7	Bone	animal bone (2bags- med & sm)	100	48
55:32	55		Bone	animal bone (1bag- med)- directly associated with quernstone 55:1	45	163
55:33	55	17	Bone	animal bone- 5pcs burnt (1bag- med)	ca220	120
55:34	55	within 55:26	Bone	cat mandible w/ knife blade mark, buccal aspect- skinning	1	1

Find No	Deposit	Sample No	Category	Description	No pieces	Weight (gm)
57:1	57		Metal	?iron nail or pin head fragment- trapezoidal, rectangular in section, widens 7 thickens towards top (13mm L x 4, 8mm x 3, 6mm Th)	8	1
57:2	57		Metal	?iron hook or part of clasp/buckle- slightly curved/bent strip of tapering iron, broken one end, and opposite end hammerered to point, rectangular in section, sub-circular towards point (33mmL x 9mm W x 2.5mm Th)	1	1
57:3	57		Bone	animal bone (1bag- med)	38	110
57:4	57		Bone	animal bone- sheep radius, radiocarbon UB8562	1	3
57:5	57	8	Bone	animal bone (2bags- sm) radiocarbon UB8562	ca50	8
57:6	57		Bone	animal bone (1bag- sm)	12	1
58:1	58		Bone	animal bone (2 bags- med & sm)	ca50	30
58:2	58		Bone	animal bone (1bag- lg)	34	811
58:3	58		Bone	animal bone (2bags- lg & med)	ca150	750
60:1	60		Bone	animal bone (1bag- sm)	9	7
60:2	60	16	Bone	animal bone- incl 1pc burnt (1bag- sm)	ca45	9
62:1	62		Stone	stone-mould/whetstone- 2pcs co-joining (a-b), rectangular, fine-grained sandstone, w/two smooth sides & poss dress pin casting mould section (81mm x 22mm x 18mm)	2	72
62:2	62		Slag	slag- undiagnostic	1	35
62:3	62		Metal	iron fragment- 3 pcs co-joining (a-c), broken both ends, perforated longitudinally, ends splay outwards, part of larger unidentified object (21mm x 7mm diam)	1	<1
62:4	62		Stone	quernstone- upper part of rotary quern- 3pcs co-joining (a-c), coarse, quartz-rich red sandstone, grinding surface shows wear, upper surface roughly shaped/uneven, sides finely rounded, light, thin quernstone (490mm original diam, 90mm diam central perf, 38mm maxTh)	1	
62:5	62	11	Lithic	flint- struck, flake intact, 32mm	1	1
62:6	62	11	Lithic	flint- struck, flake, 21mm	1	<1
62:7	62	11	Lithic	flint- struck, core/bashed lump (1 removal)	1	3
62:8	62	11	Lithic	flint- debitage/spall, 11mm	1	<1
62:9	62	11	Slag	slag- undiagnostic	1	14
62:10	62		Bone	animal bone- incl 3pcs burnt (3 bags- lg & 2med)	ca260	1250
62:11	62	11	Bone	animal bone- incl 12pcs burnt (2 bags- lg & med)	ca610	440
64:1	64		Bone	animal bone (1 bag- med)	50	77
64:2	64	13	Bone	animal bone (1bag- sm)	19	7
65:1	65		Bone	animal bone (1bag- med)	20	33
65:2	65	19	Bone	animal bone (1bag- sm)	6	2
65:3	65	14	Bone	animal bone- incl 3pcs burnt (1 bag- sm)	ca70	18
65:4	65	21	Bone	animal bone fragments- unburnt/burnt & snail shell (below cashel wall)	ca10	<1

Find No	Deposit	Sample No	Category	Description	No pieces	Weight (gm)
65:5	65		Bone	animal bone- long bone fragment- radiocarbon UB8564	3	17
65:6	65	21	Bone	animal bone- radiocarbon UB8564	1	<1
67:1	67		Bone	animal bone- incl 1pc burnt (2 bags- lg & sm)	ca70	265
67:2	67	15	Bone	animal bone- incl. 6pcs burnt (2 bags- med & sm)	ca200	80
67:3	67	within 67:2	Bone	animal bone- blade mark along surface of bone	1	<1
69:2	69		Bone	animal bone (1bag- lg)	18	188
69:3	69	20	Bone	animal bone (1bag- med)	ca65	50
69:4	69	18	Bone	animal bone (2 bags- med & sm)	ca100	35
72:1	72		Lithic	flint- struck, fragment, not used	1	<1
72:2	72		Slag	slag- fuel ash slag	3	1
72:3	72		Bone	animal bone (2 bags- lg & med)	ca100	350
73:1	73		Bone	animal bone (2 bags- med & sm)	ca110	70
74:1	74		Bone	animal bone (1bag- lg)	60	350
75:1	75		Bone	animal bone (1 bag- med)	30	50
76:1	76		Bone	animal bone (2 bags- lg & sm)	ca100	665
76:2	76	within 76:1	Shell	shell fragments	3	<1

Appendix 4: Catalogue of samples

Sample No	Cut	Deposit	Soil/Enviro/stone/etc	Vol sieved (L)	Vol floated (L)	Finds?	Stone sample kept?	Charred plant remains?
1	-	55	Hand picked charcoal	-	-	N	N	Y
2	-	55	Bulk soil	14	14	Bone	N	Y
3	-	53	Mortar	-	-	-	-	-
4	-	55	Snail shell	-	-	-	-	-
5	-	55	Hand picked charcoal	-	-	N	N	Y
6	-	58	Bulk soil	7	7	Bone	N	Y
7	-	55	Bulk soil	7	7	Bone	N	Y
8	-	57	Bulk soil	14	14	Bone, shell	N	Y
9	-	55	Hazelnut shell	-	-	N	N	Y
10	-	55	Hand picked charcoal	-	-	N	N	Y
11	-	62	Bulk soil	425	425	Bone, shell, flint, slag	N	Y
12	-	61	Wood	-	-	-	-	-
13	-	64	Bulk soil	7	7	Bone, shell	N	Y
14	-	65	Bulk soil	28	28	Bone, shell	N	Y
15	-	67	Bulk soil	35	35	Bone	N	Y
16	-	60	Bulk soil	7	7	Bone	N	Y
17	-	55 under door	Bulk soil	7	7	Bone	N	Y
18	-	69	Bulk soil	21	21	Bone	N	Y
19	-	65 adjacent to cashel wall	Bulk soil	7	7	Bone	N	N
20	-	69	Bulk soil	14	14	Bone	Y	Y
21	-	65 below cashel wall	Bulk soil	0.1	0.1	Bone	N	Y
22	-	Sample from surface of find 51:6	Metal residue?	-	-	-	-	-
23	-	Sample from grinding-surface of 62:4	Starch and phytolith analysis	-	-	-	-	-
24	-	Sample from grinding-surface of 62:4	Starch and phytolith analysis	-	-	-	-	-
25	-	Sample from exterior surface of 62:4	Starch and phytolith analysis	-	-	-	-	-
26	-	Sample from grinding-surface of 55:1	Starch and phytolith analysis	-	-	-	-	-
27	-	Sample from grinding-surface of 55:1	Starch and phytolith analysis	-	-	-	-	-
28	-	Sample from exterior surface of 55:1	Starch and phytolith analysis	-	-	-	-	-
29	-	57	Wood	-	-	-	-	-
30	-	64	Wood	-	-	-	-	-

Appendix 5: Animal bone metrical data

Animal bone metrical data for by phase (Ph), context (C), species (Sp) and element (elem). Measurements are in millimetres and follow the criteria of von den Driesch (1976). See McCormick and Murray (2007, table A1:4.1) for abbreviations. Estimated withers heights (cms) were calculated using the multiplication factors of Fock and Matolcsi (quoted in von den Driesch and Boessneck 1974, 336).

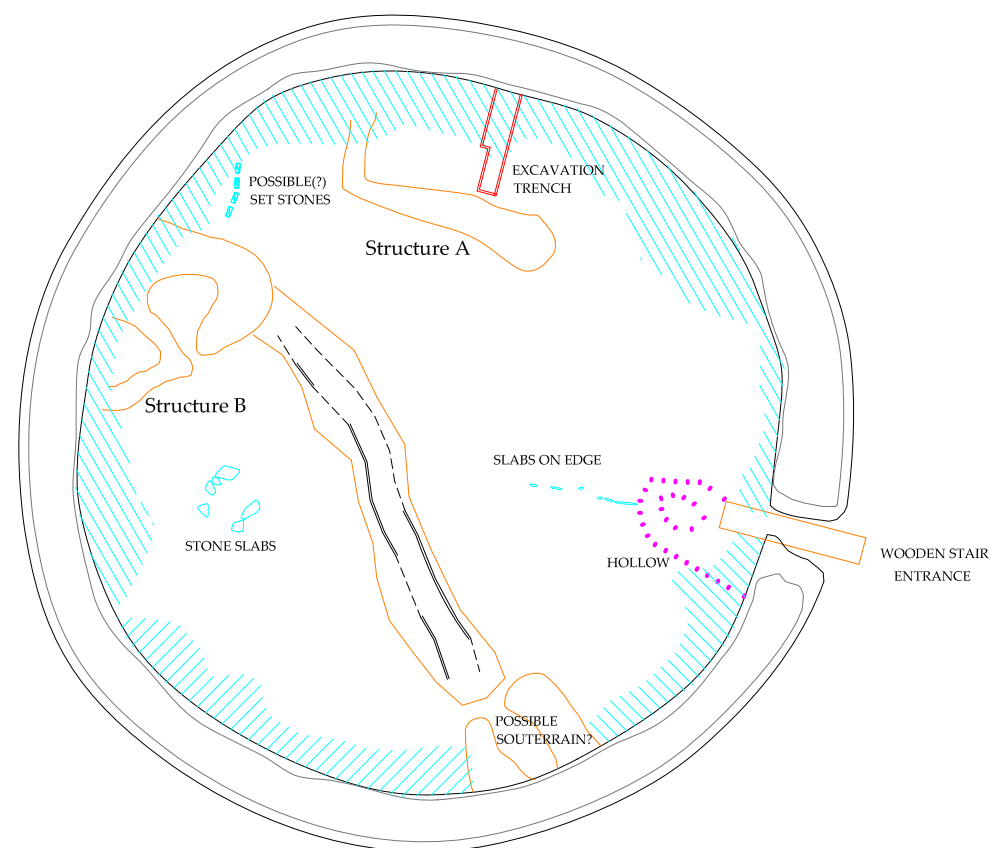
Ph	C	Sp	elem	GL	GLI	GLm	Bp	SD	Bd	BT	HTC	B@F	GLP	SLC	Wmin	Wmax	EWB (cm)
II	55	B	AS	0	59.2	55.2	0	0	37.6	0	0	0	0	0	0	0	-
II	55	B	AS	0	58.6	53.5	0	0	36.7	0	0	0	0	0	0	0	-
II	55	B	AS	0	61.6	55.7	0	0	0	0	0	0	0	0	0	0	-
II	55	B	AS	55.7	59.8	0	0	0	39.4	0	0	0	0	0	0	0	-
IV	58	B	AS	0	60.1	54.2	0	0	37.2	0	0	0	0	0	0	0	-
IV	58	B	AS	0	60.4	0	0	0	0	0	0	0	0	0	0	0	-
II	55	B	HC	0	0	0	0	0	0	0	0	0	0	0	33.7	42	-
II	55	B	HU	0	0	0	0	0	0	65.2	28.9	0	0	0	0	0	-
II	69	B	HU	0	0	0	0	0	0	67	29	0	0	0	0	0	-
II	62	B	MC1	187	0	0	53.8	29.1	54.8	0	0	49.9	0	0	0	0	114.6
II	62	B	MC1	0	0	0	51.1	0	0	0	0	0	0	0	0	0	-
II	55	B	MC1	0	0	0	0	0	52.5	0	0	47.6	0	0	0	0	-
II	62	B	MT1	0	0	0	40.4	0	0	0	0	0	0	0	0	0	-
IV	58	B	MT1	0	0	0	40.5	0	0	0	0	0	0	0	0	0	-
II	55	B	RA	0	0	0	74.3	0	0	0	0	0	0	0	0	0	-
II	55	B	RA	0	0	0	80	0	0	0	0	0	0	0	0	0	-
IV	58	B	SC	0	0	0	0	0	0	0	0	0	58.6	46.4	0	0	-
II	55	B	TI	0	0	0	0	0	44.3	0	0	0	0	0	0	0	-
II	55	B	TI	0	0	0	0	0	57.7	0	0	0	0	0	0	0	-
II	55	B	TI	0	0	0	0	0	63.4	0	0	0	0	0	0	0	-
II	55	B	TI	0	0	0	0	0	57.1	0	0	0	0	0	0	0	-
III	72	CAH?	MT1	117	0	0	20.7	0	24.8	0	0	24.6	0	0	0	0	-
IV	58	LEL	HU	0	0	0	0	0	10.8	0	0	0	0	0	0	0	-
II	55	OVA	HC	0	0	0	0	0	0	0	0	0	0	0	23.2	33.6	-
IV	58	OVA	HC	0	0	0	0	0	0	0	0	0	0	0	36.7	49.4	-
II	55	OVA	HU	0	0	0	0	0	0	24	11.6	0	0	0	0	0	-
II	55	OVA	HU	0	0	0	0	0	0	22.1	10.7	0	0	0	0	0	-
II	55	O	RA	0	0	0	27.6	0	0	0	0	0	0	0	0	0	-
II	55	O	RA	0	0	0	24.1	0	0	0	0	0	0	0	0	0	-

Ph	C	Sp	elem	GL	GLI	GLm	Bp	SD	Bd	BT	HTC	B@F	GLP	SLC	Wmin	Wmax	EWB (cm)
II	55	O	RA	0	0	0	28	0	0	0	0	0	0	0	0	0	-
II	55	O	SC	0	0	0	0	0	0	0	0	0	30.5	18.4	0	0	-
II	62	O	TI	0	0	0	0	0	23.2	0	0	0	0	0	0	0	-
II	62	O	TI	0	0	0	0	0	23.3	0	0	0	0	0	0	0	-
II	55	OVA	TI	0	0	0	0	0	20.3	0	0	0	0	0	0	0	-
IV	50	O	TI	0	0	0	0	0	32.1	0	0	0	0	0	0	0	-
II	55	S	AS	37.7	0	0	0	0	0	0	0	0	0	0	0	0	-
II	55	S	RA	0	0	0	26.4	0	0	0	0	0	0	0	0	0	-
II	55	S	RA	0	0	0	0	0	28	0	0	0	0	0	0	0	-
II	55	S	RA	0	0	0	23.6	0	0	0	0	0	0	0	0	0	-
II	55	S	SC	0	0	0	0	0	0	0	0	0	33.7	23.5	0	0	-

SECTION A-B

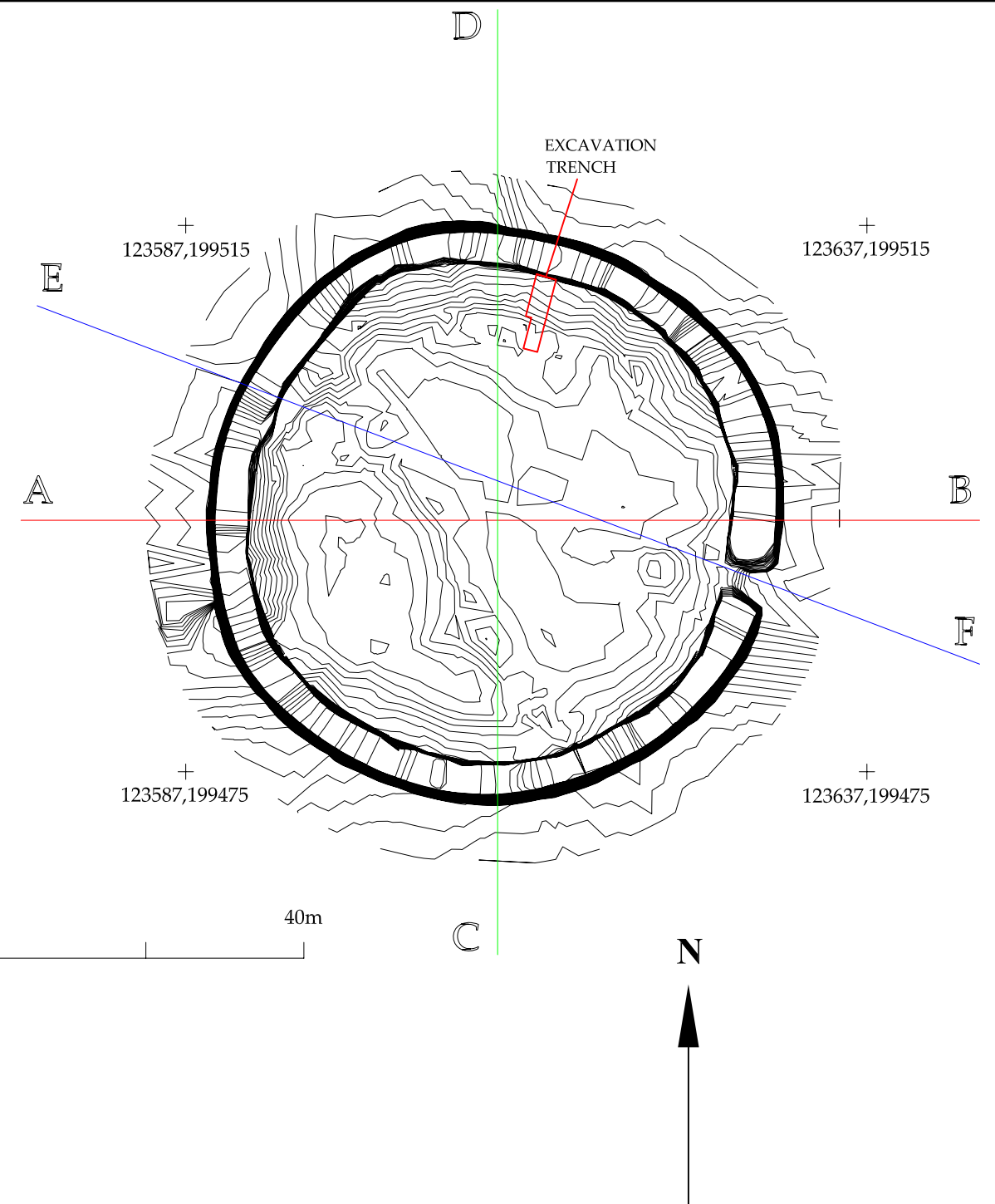
SECTION C-D

SECTION E-F



0 40m

- VISIBLE STONE FACING
- - - POSSIBLE ORIGINAL WALL
- /// TUMBLE/COLLAPSE
- STRUCTURAL REMAINS



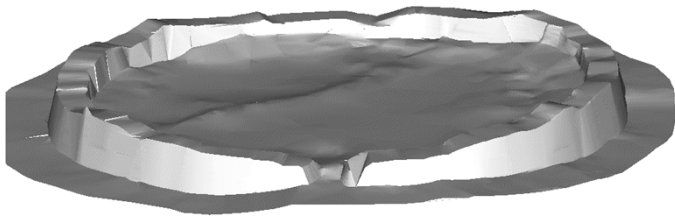
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Caherconnell Cashel, Caherconnell, Co. Clare
07E0820

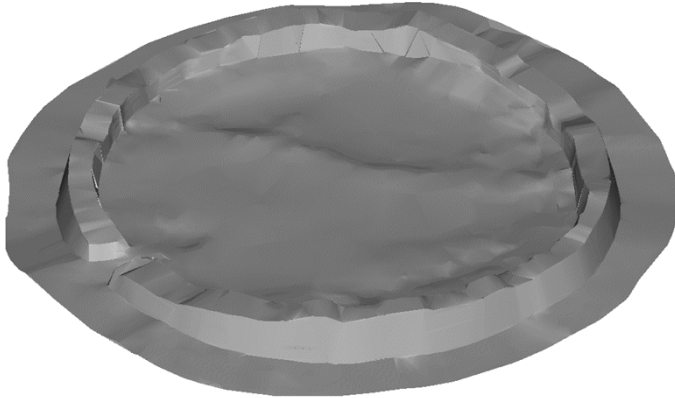
Figure 2: Topographic survey and interpretive plan

Surveyed by Liam Hickey, NUI Galway
Topographic survey 1:200

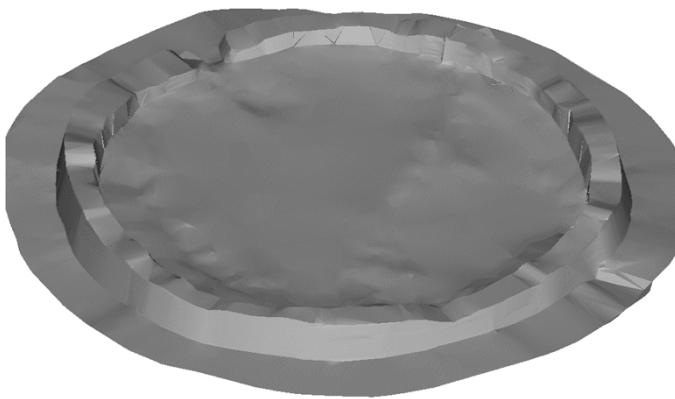
T V A S
I R E L A N D
L T D



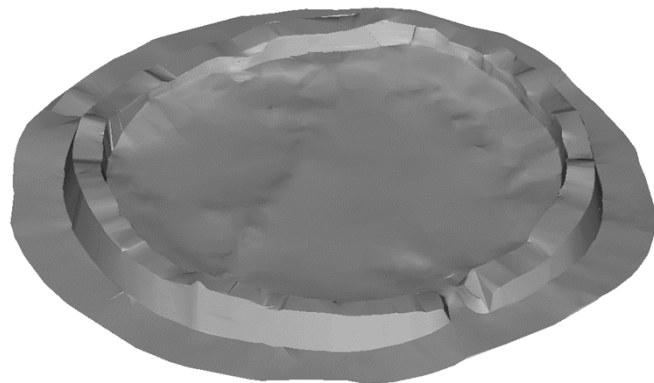
Entrance



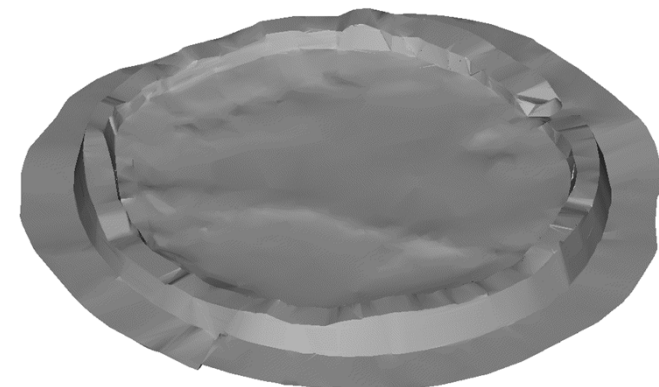
North-east



North-west

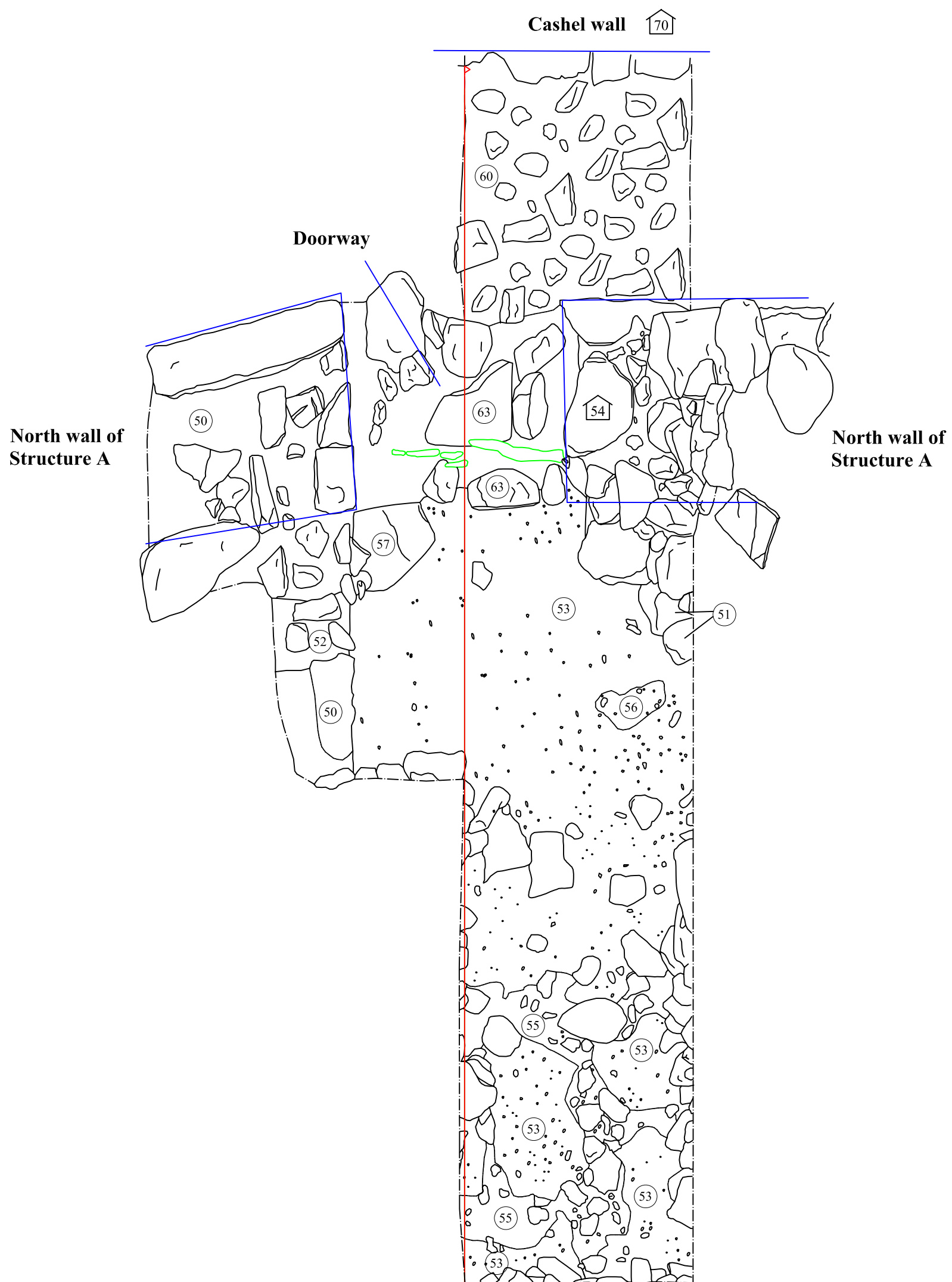


South-east



South-west

Figure 3: Isometric views of cashel based on Liam Hickey NUI Galway topographic survey



— = Wood 61

Fig. 5

J07/16

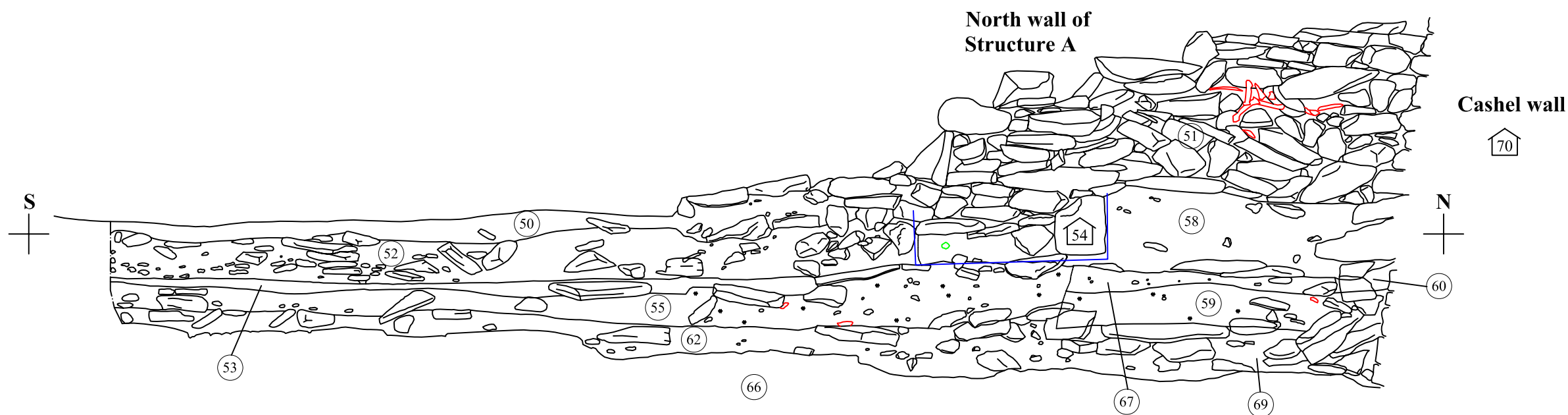
0 1m

Caherconnell Cashel, Caherconnell, Co. Clare
07E0820

Figure 4: Plan of trench. Showing floor 53 and north wall of Structure A

Scale 1:20

T V A S
IRELAND
LTD



- # = Charcoal
- ∟ = Animal bone
- ◇ = Wood

J07/16

Caherconnell Cashel, Caherconnell, Co. Clare
07E0820

Figure 5: East facing section of trench

Scale 1:20

T V A S
I R E L A N D
L T D



55:02



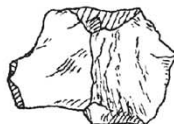
55:13



55:17



62:05



62:06



62:08



55:14



62:07



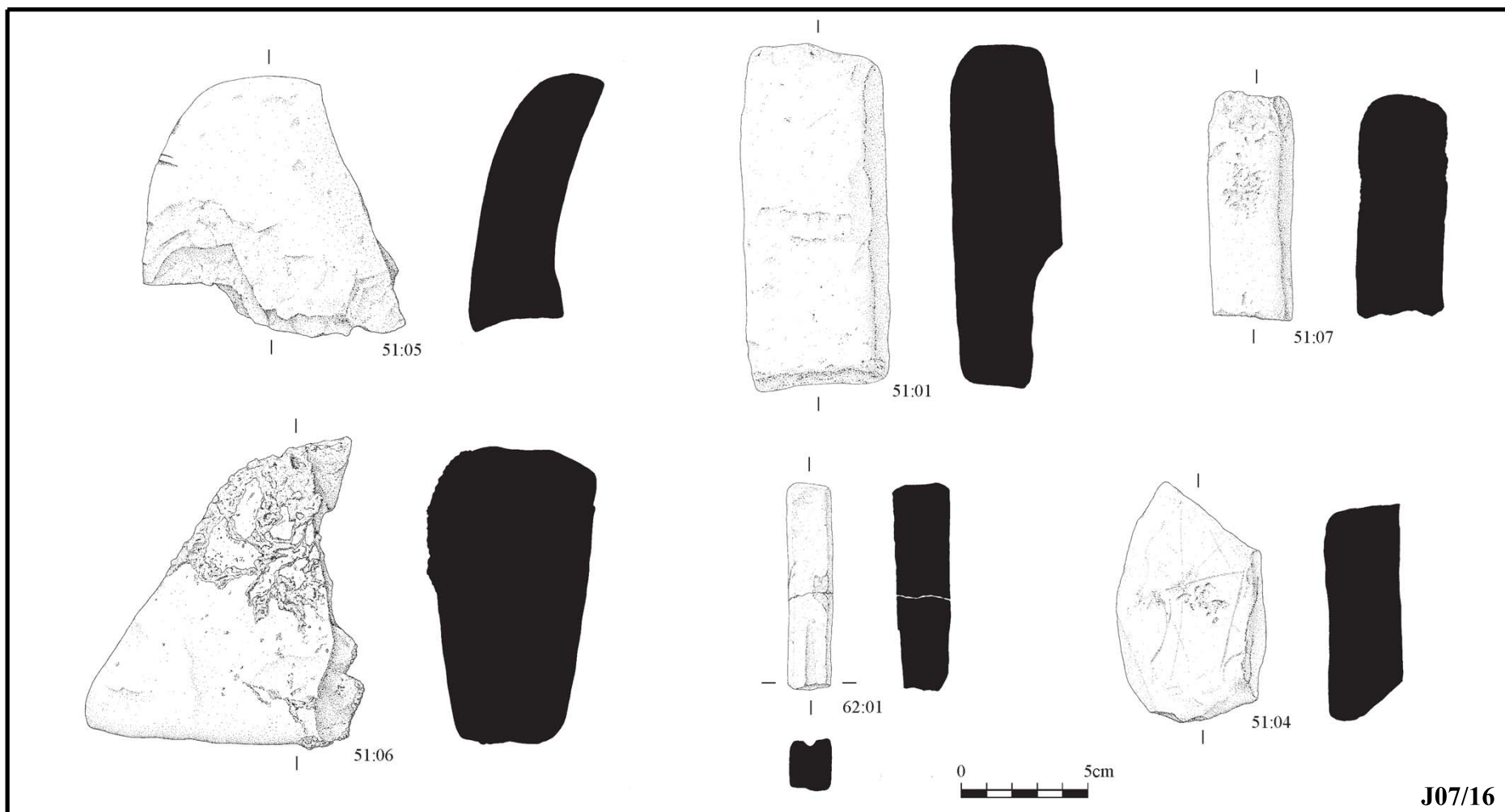
J07/16

Caherconnell cashel, Caherconnell, Co. Clare 08E0820

Figure 6: Flint and chert

Drawn by Michelle Comber

T V A S
I R E L A N D
L T D



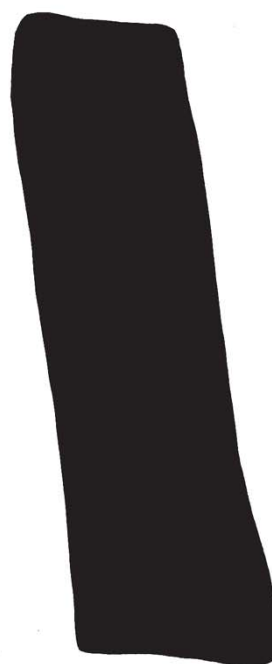
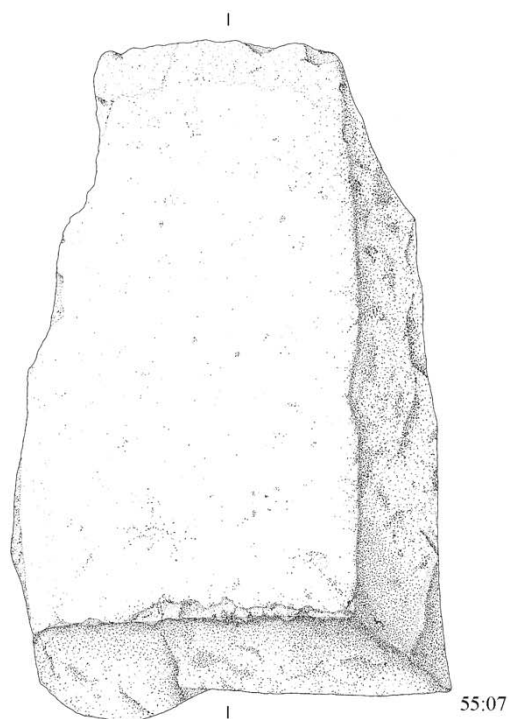
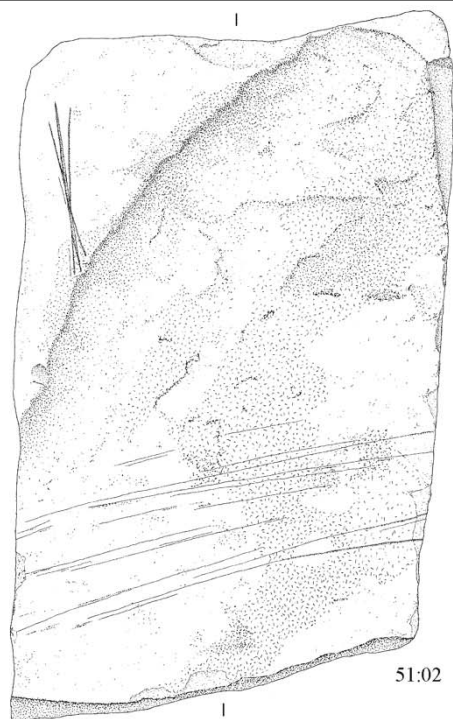
J07/16

Caherconnell cashel, Caherconnell, Co. Clare 07E0820

Figure 7: Worked stone

Drawn by Michelle Comber

T V A S
I R E L A N D
L T D



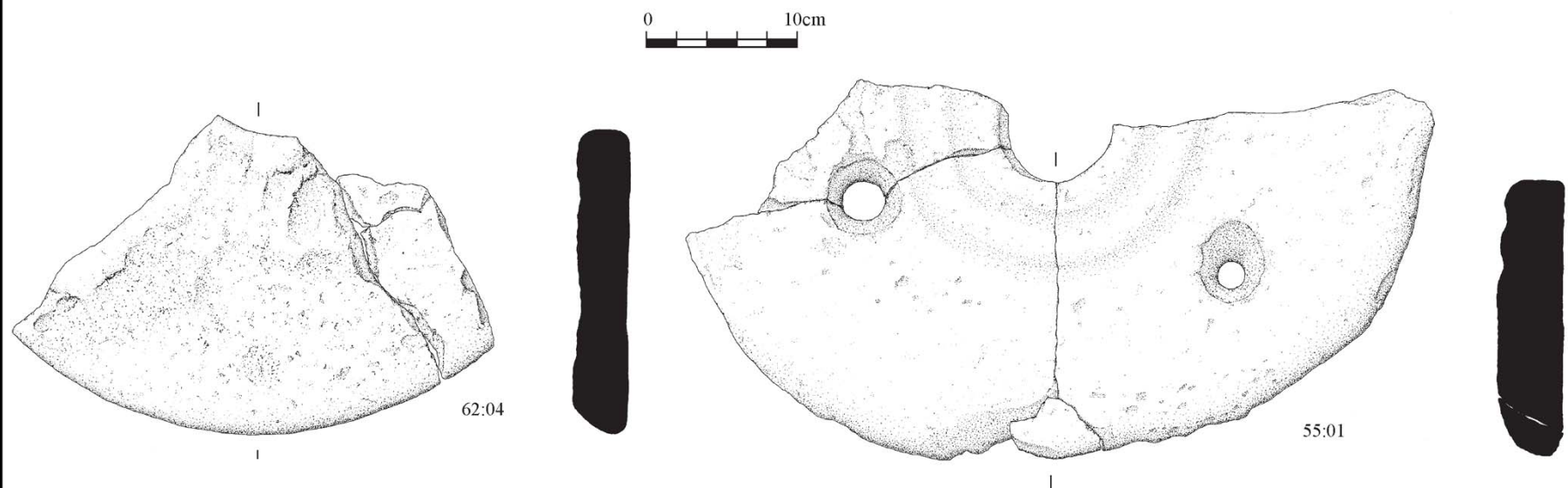
J07/16

Caherconnell cashel, Caherconnell, Co. Clare
07E0820

Figure 8: Worked stone

Drawn by Michelle Comber

T V A S
I R E L A N D
L T D



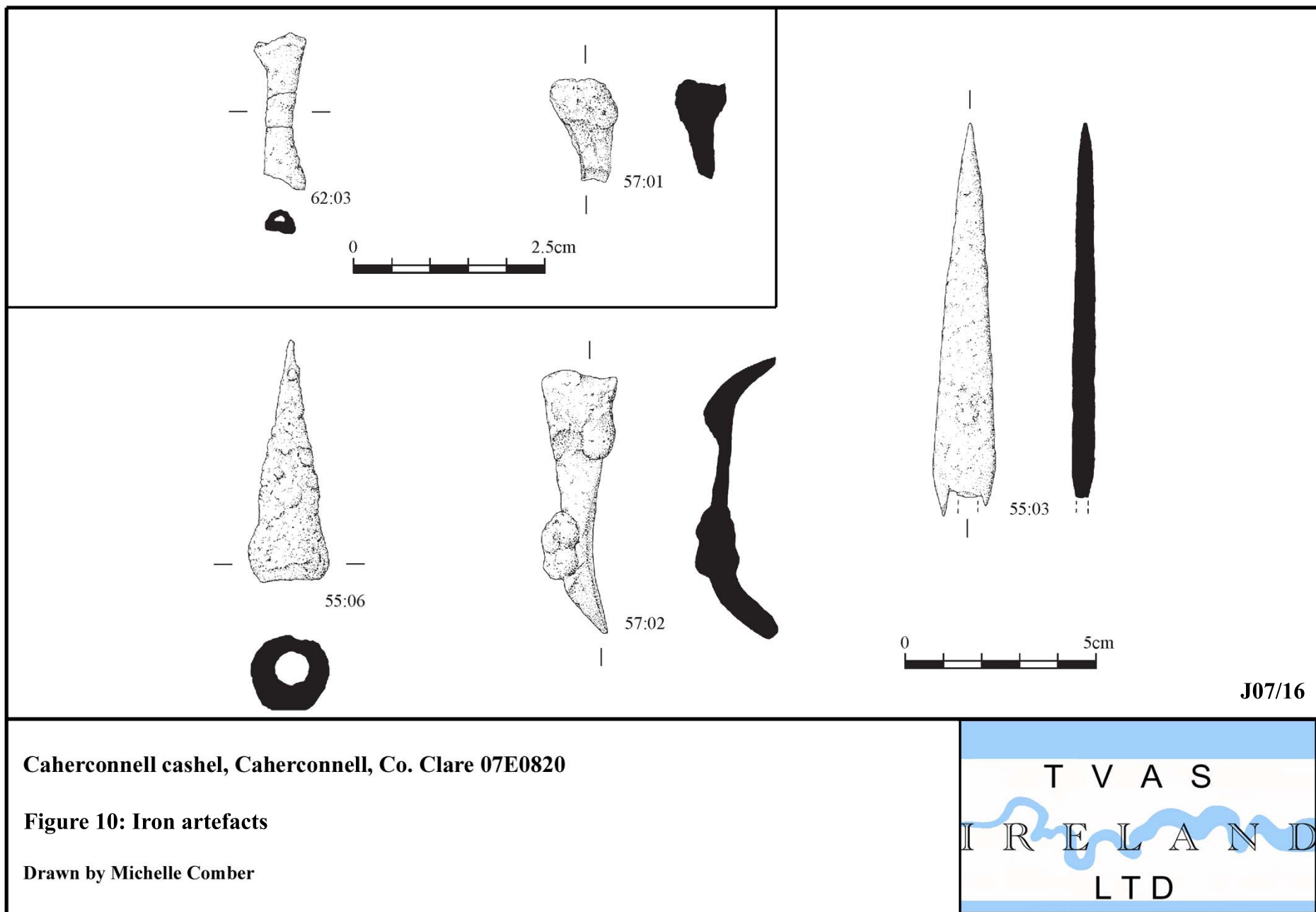
J07/16

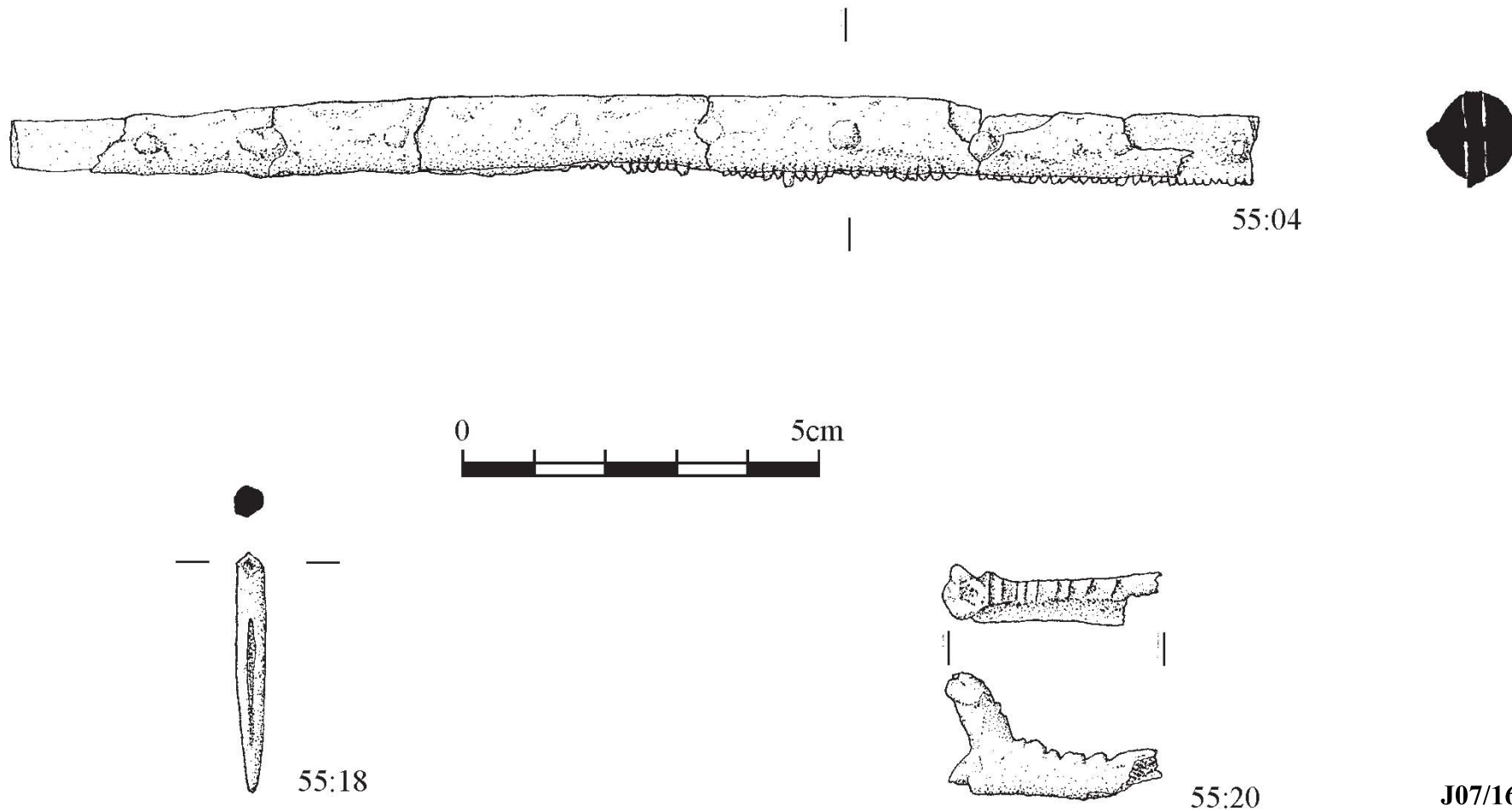
Caherconnell cashel, Caherconnell, Co. Clare 07E0820

Figure 9: Quernstones

Drawn by Michelle Comber

T V A S
I R E L A N D
L T D





Caherconnell cashel, Caherconnell, Co. Clare 07E0820

Figure 11: Bone artefacts

Drawn by Michelle Comber

T V A S
I R E L A N D
L T D

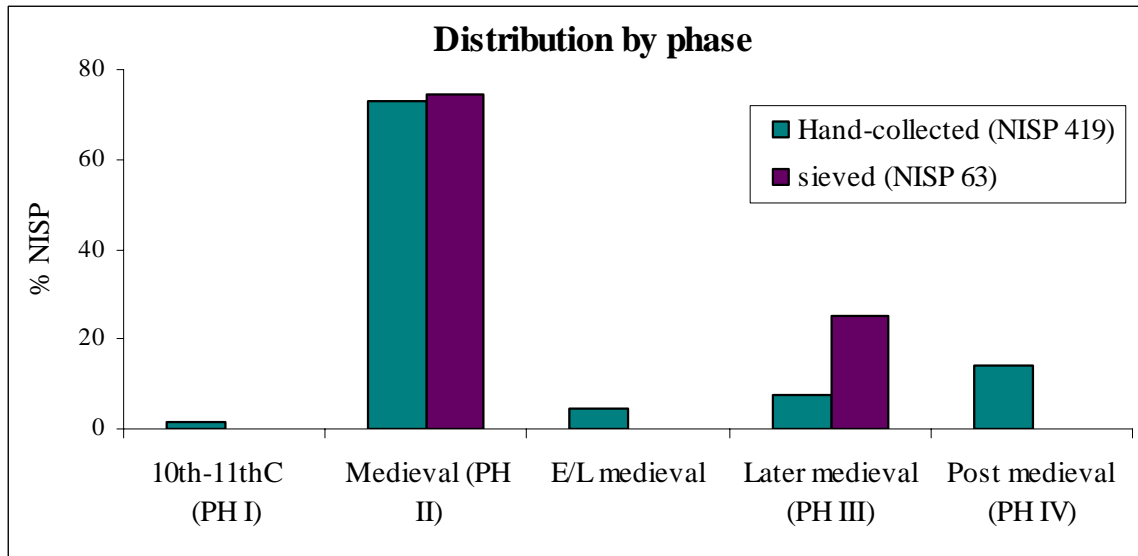


Figure 12: Frequency (% NISP) of countable specimens by phase for the hand-collected and sieved assemblages.

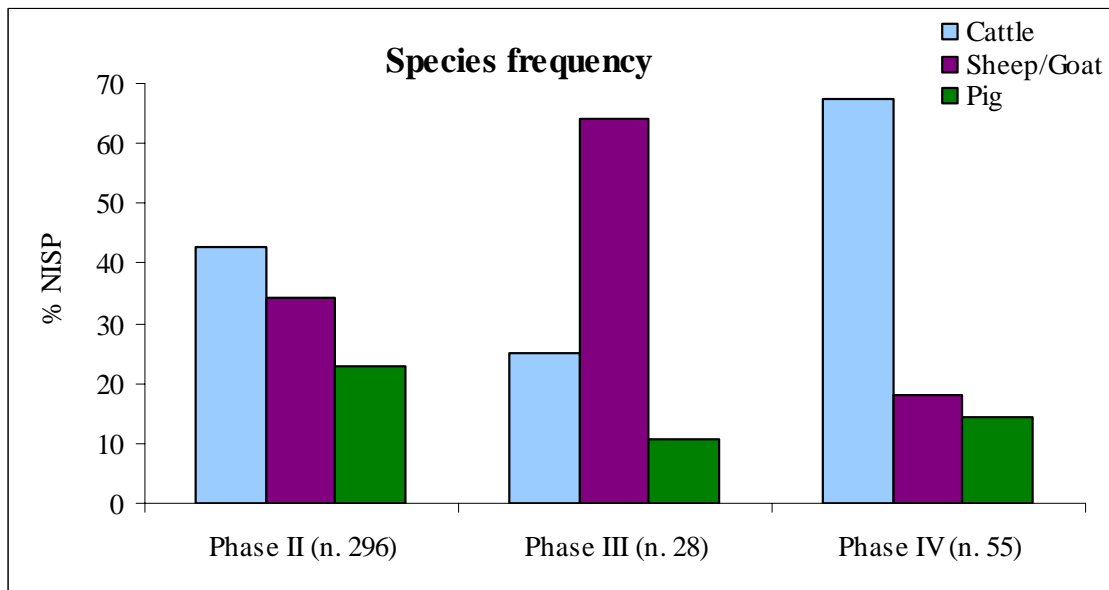


Figure 13: Frequency (% NISP) of the main species for Phases II, III and IV.

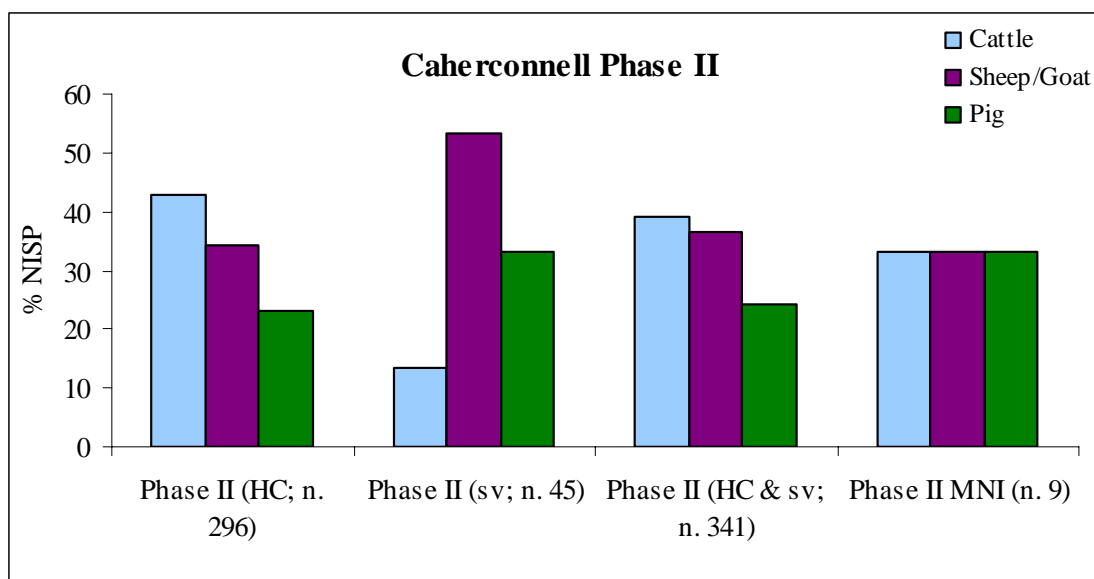


Figure 14: Frequency of species using different collection (HC = hand-collected; sv = sieved) and quantification methods (NISP and MNI) for the Phase II assemblage.

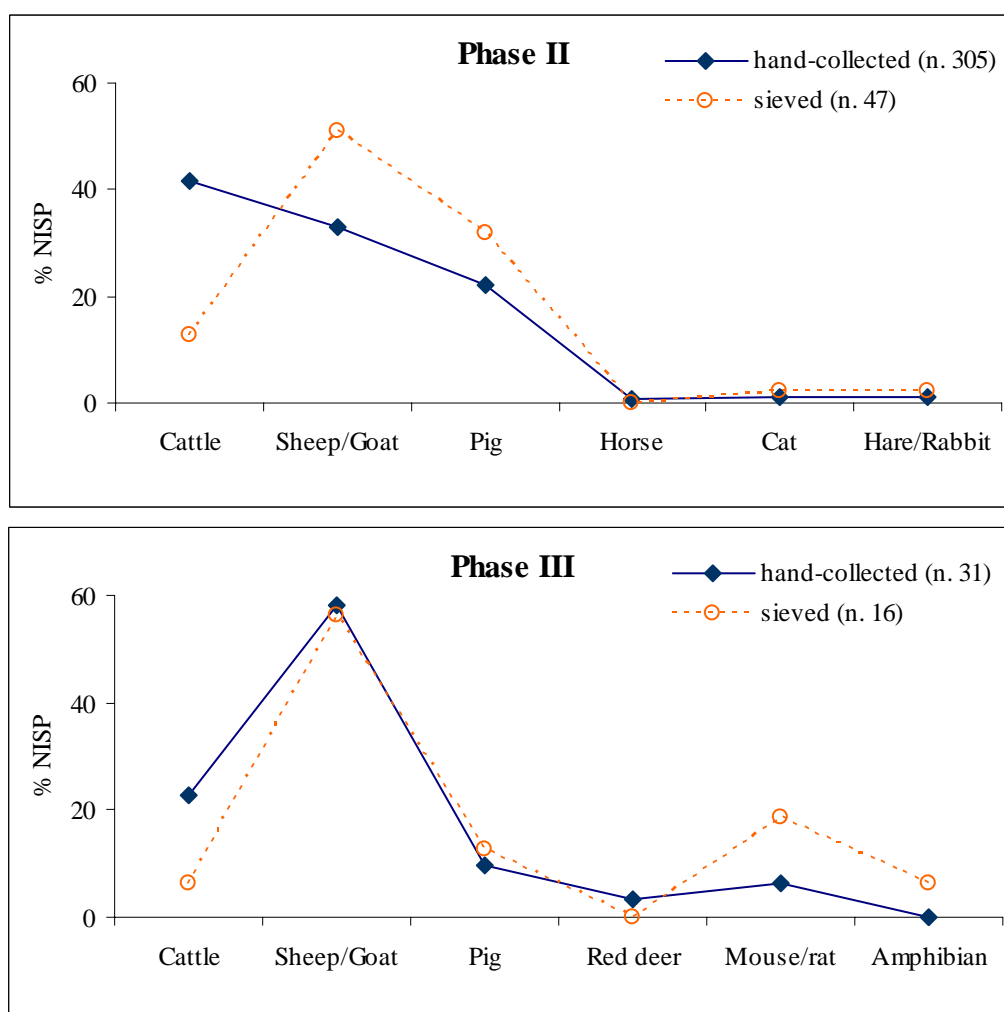


Figure 15 Frequency (% NISP) of species in the hand-collected and sieved assemblages for Phase II (top) and Phase III (bottom).



Plate 1: Caherconnell Looking south-west



Plate 2: Ledge along inner cashel wall at south. Scale 1m



Plate 3: Internal dividing wall. Looking south. Scale 1m



Plate 4: Internal dividing wall (detail). Looking south. Scale 1m

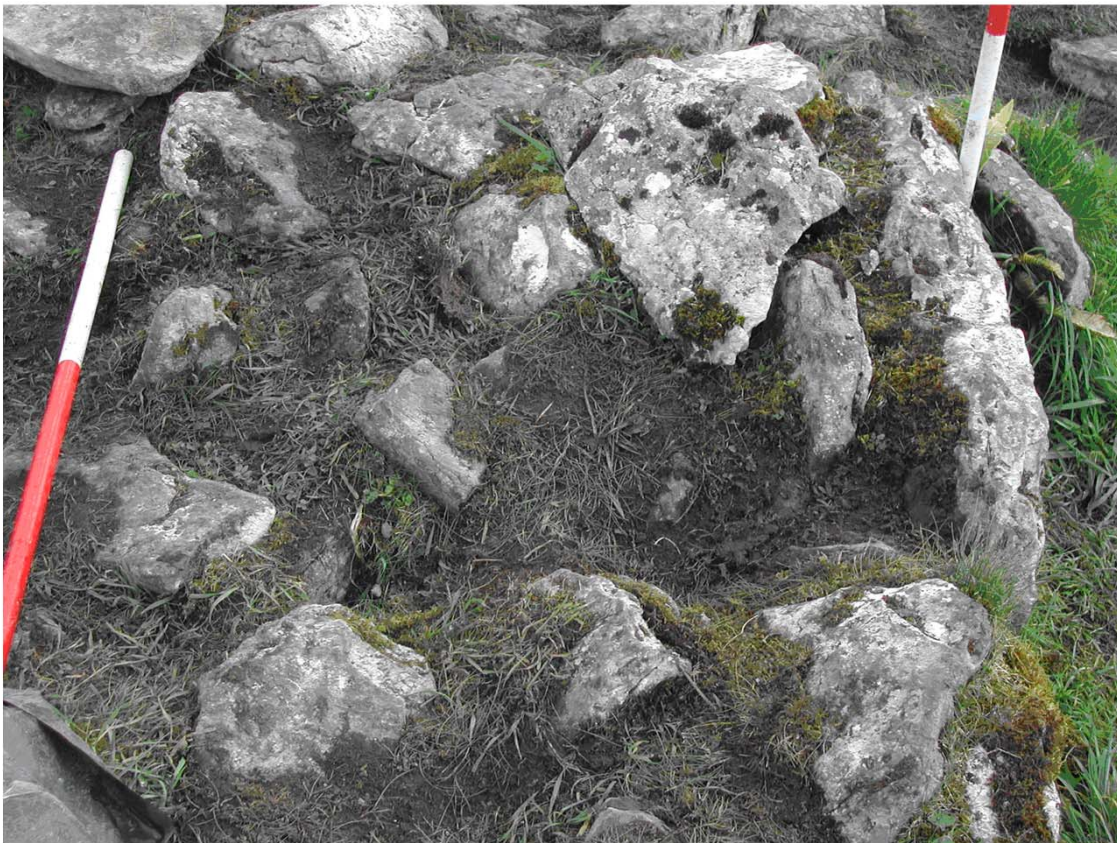


Plate 5: South side wall Structure A. Looking east. Scale 1m



Plate 6: South side wall Structure A. Looking east. Scale 1m

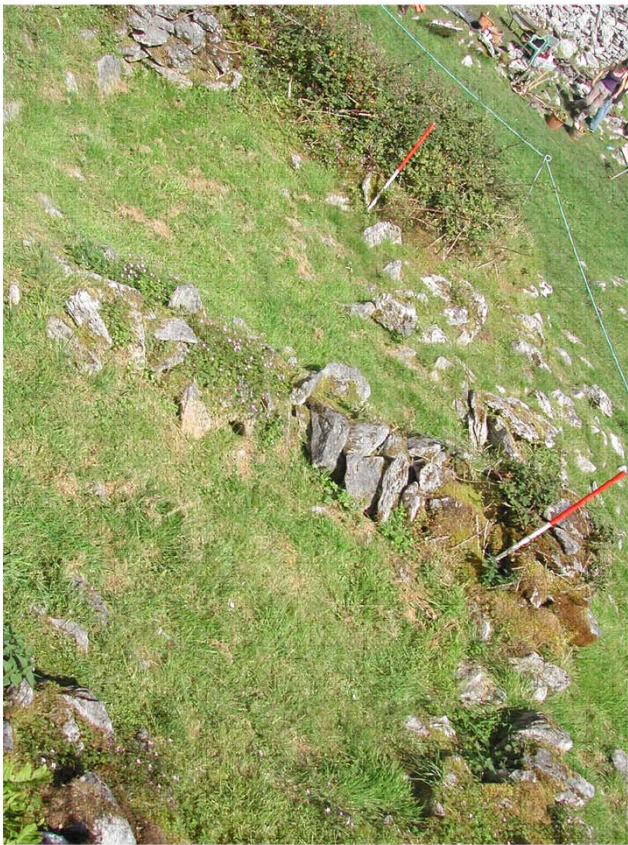


Plate 7: Structure B. Looking north-east. Scale 1m



Plate 8: Structure B. Looking west

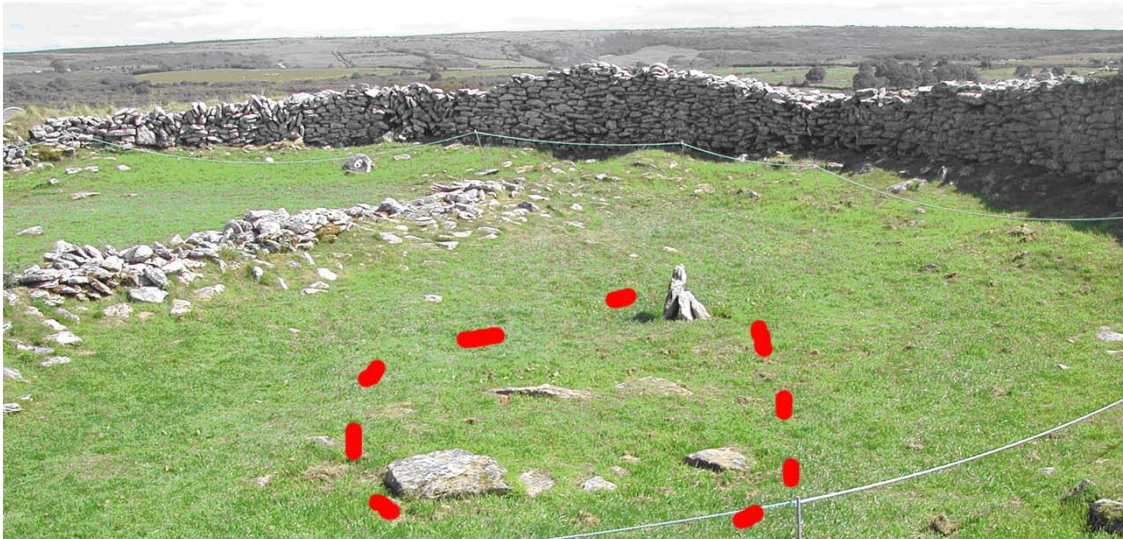


Plate 9: Horizontal stone slabs. Looking south-east



Plate 10: Hollow at south of cashel. Possible souterrain entrance. Scales 1m



**Plate 11: Dry-stone subterranean chamber south-east of cashel.
Scales 2m and 1m**



Plate 12: Caherconnell cashel and remains to south. Looking north



Plate 13: Topographic survey. Looking north-west



Plate 14: Location of trench. Looking north. Scales 2m and 1m



Plate 15: Trench during excavation. Looking north



Plate 16: Trench during excavation. Looking west



Plate 17: Backfilled trench. Looking north-west



Plate 18: Section. Looking west. Scale 0.5m



**Plate 19: Fully excavated trench.
Showing limestone bedrock 66 and cashel wall 70.
Looking north. Scales 2m, 1m and 0.5m**



Plate 20: Deposit 62. Looking north. Scales 2m, 1m and 0.5m



Plate 21: Deposit 55. Excavation of quernstone 55:1. Looking south-east



Plate 22: Wall 54. Showing deposit 68. Looking north. Scales 1m & 0.5m



**Plate 23: Wall 54. Showing doorway and deposit 63. Looking south.
Scales 1m & 0.5m**



Plate 24: Wall 54. Showing doorway and timber 61. Looking north. Scale 0.5m



Plate 25: Floor surface 53. Looking north. Scales 2m, 1m and 0.5m



Plate 26: Deposit 52. Looking south. Scales 1m



Plate 27: Tumble 51 and topsoil 50. Looking north. Scales 1m



Plate 28: Quernstone 07E0820:55:1. *In situ*. Scale 0.5m



Plate 29: Pin mould 07E0820:62:1



Plate 30: Iron arrowhead 07E0820:55:3



Plate 31: Conical iron object 07E0820:55:6



Plate 32: Iron fragment 07E0820:57:2



Plate 33: Jawbone with saw-marks 07E0820:55:20



Plate 34: Bone comb 07E0820:55:4

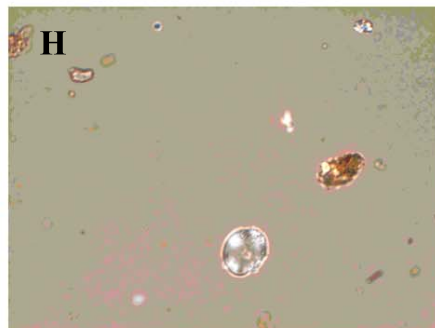
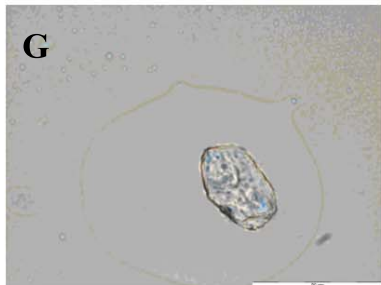
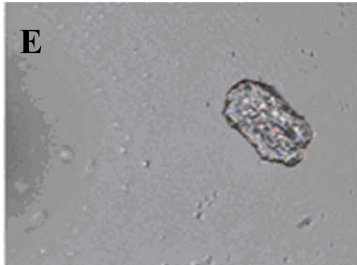
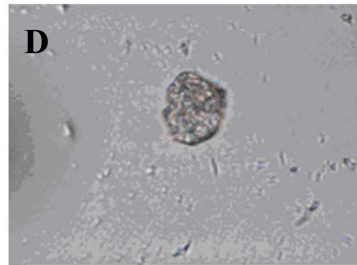
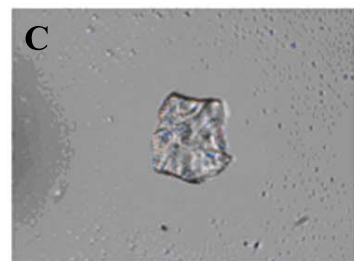
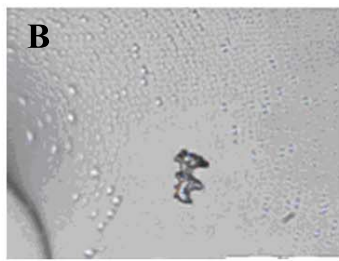
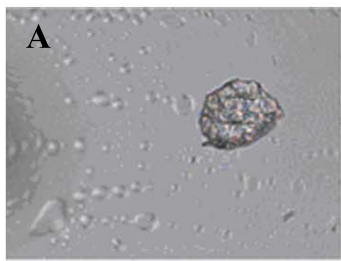


Plate 35: Phytoliths and starch granule

A - Phytolith from 62:4, sample 24

B - Phytolith from 55:1, sample 26

C - Phytolith from 55:1, sample 26

D - Phytolith from 55:1, sample 26

E - Phytolith from 55:1, sample 27

F - Phytolith from 55:1, sample 28

G - Phytolith from 55:1, sample 28

H - Starch granule from 55:1, sample 26