

Stone Beads from Irish Passage Tombs:
symbolism, social identity and the self

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Declaration

I hereby certify that I am the author of this entire document and that any assistance I have received in preparation for this dissertation is completely acknowledged and disclosed in this document. I have cited all sources from which data was obtained, ideas or words that are copied directly or paraphrased are all referenced using Harvard Style Referencing System. Sources are properly credited according to accepted standards for professional publications. I declare this document was prepared by me for the purpose as per the requirements for the M.Sc in Applied Archaeology.

Signed:

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Date: 16/10/18

Abstract

In pre-industrial societies beads act as a medium of symbolic and social expression. Their role as a communication media means they affect all aspects of society from domestic and social life to ritual action. Determining traditions in stone bead and pendant use and deposition contributes to our understanding of the ritual and symbolic function of passage tombs and our perception of Neolithic social and personal identity. This is the first dedicated study of Neolithic stone beads from Irish passage tombs. The entire corpus of stone bead and pendants from Irish passage tombs was examined at the National Museum of Ireland and University College Dublin. The material was classified based on morphology, colour and additional physical characteristics, and compiled into a catalogue. The beads and pendants were then assessed using a number of analytical and theoretical approaches including a pioneering use-wear case study of beads from Knockroe, Co. Kilkenny. Patterning in the physical characteristics, evidence of wear and context were investigated in relation to prior archaeological analysis and ethnographic examples. The results demonstrate that standardized symbolic structures and social conventions were utilized in passage tomb ritual throughout Ireland during the Neolithic.

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Chapter 1: Introduction

Beads are capsules of cultural information affording archaeologists an insight into the technology, social systems, and symbolism used by people throughout time. Bead use extends as far back as the Early Upper Paleolithic (Rigaud *et al.* 2009, Vanhaeren *et al.* 2006a) and beads have been made and used by almost every tribal society across the globe since that time (Kuhn and Stiner 2007, 45). In the Western world, we tend to consider beads/pendants as simple body adornments, a means of increasing visual/aesthetic impact. However, historically and in contemporary pre-industrial societies, beads/pendants are indicators of self-awareness, artistic creativity, trade, technological inventiveness, and have played significant roles as symbolic conduits and communication media (Bar-Yosef Mayer *et al.* 2017, Dubin 2009, Sciamma and Eicher 1998, Thomas 2011). Archaeological and ethnographic studies have established that alterations in bead and pendant preferences can be used to gain an understanding of cultural changes including population fluctuations, the circulation of new cultural worldviews, and trade (Hodder 1979, 446-54, Lipo and Madsen 2000, 91-118, Rigaud *et al.* 2014, Vanhaeren and d'Errico 2006).

Despite their broad potential, Neolithic bead studies in Ireland have remained stagnant over a number of decades while studies in Europe and Asia have flourished. The Neolithic was a period of technological, cultural, economic and social change across Europe, manifesting in Ireland (4000-2400BC) in the form of sedentary homesteads, the establishment of farming practices, and the construction of megalithic monuments including passage tombs (Carlin and Cooney 2017, 23). Passage tombs feature cremated and unburnt bone in addition to a defined set of artefacts including bone and antler pins, stone or clay balls, pottery, quartz, beads and pendants (Cooney 2000, Eogan 1986, Hensey 2015, Herity 1974). The distinctiveness of assemblages indicates that these artefacts were deliberately selected for deposition in passage tombs or may have acted as

ritual equipment. This thesis identifies patterns in stone bead and pendant use and deposition in Irish passage tombs and utilises this data to develop our understanding of the associated ritual and symbolic structures, and the formation of Neolithic communal and personal identities.

This project has produced the first comprehensive catalogue of all 194 stone beads and pendants from the 22 Irish passage tombs that have produced Neolithic stone bead and pendant assemblages to date (Fig. 1.1) (Appendix 1). Scientific techniques were applied to the material to extract additional meaningful technical data. This included full petrographical analysis by Dr. Stephen Mandal to determine, for the first time, the raw material used in the manufacture of all stone beads and pendants, and a use-wear case study carried out by the author using SEM to define the extent and nature of use prior to deposition of stone beads and pendants from Knockroe passage tomb, Co. Meath. Patterns in the material were assessed in light of ethnographic and anthropological evidence, in addition to broader cultural changes evident in the period.



Figure 1.1: Distribution map of the 22 sites included in the study (adapted from maproom.net).

[1.1 What defines a bead?](#)

Generally speaking, beads can be defined as small objects that have been modified for suspension or attachment to other materials (Kuhn and Stiner 2007, 45). Suspension or attachment is often facilitated by a single central perforation (Fig.1.2a), or multiple perforations (Fig.1.2b). Pendants are differentiated by their perforation offset from their centre (Fig.1.2c) and are strung to hang in a prominent manner (Beck 1928). These are the definitions that have been largely adopted to assess beads and pendants in this project. However, there are difficulties with these definitions and ultimately each artefact must be examined on a case-by-case basis. Not all objects that can be strung or have a central perforation are beads. For example, spindle whorls are circular stone objects that are attached to a rod and used to spin yarn. Spindle whorls tend to be larger than beads, as more weight is required for spinning; however, they can also be much smaller depending on the thread size, or beads can be quite large depending on the visual impact desired (Alt 1999, Barber 1991, Gromer 2005). Pendants can also be centrally perforated depending on design. In addition, buttons are often encountered in the archaeological record. These are differentiated from beads and pendants on the basis that buttons are functional and beads are decorative; however, these roles can often be reversed (Shephard 2009).

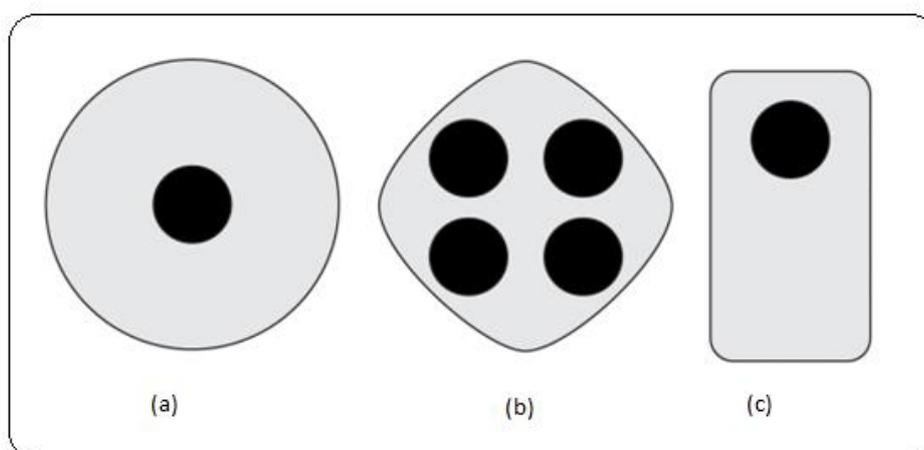


Figure 1.2: Schematic diagrams (a) Bead with central perforation; (b) Bead with multiple perforations; (c) Pendant with off-set perforation (after <https://stringingthepast.wordpress.com/>).

[1.2 Why beads?](#)

In addition to acting as indicators of self-awareness and artistic and technological ingenuity, analogies between various cultures suggest beads play other significant roles as symbolic conduits and communication media. The manufacture of beads is considered a major milestone in human cognition, demonstrating an ability to visually articulate and understand abstract messages (d'Errico *et al.* 2003, Kuhn and Steiner 2007, Vanhaeren 2005). The notion of body adornment itself is anthropocentric, in that it indicates a degree of self-awareness (Bednarik 2001, 546). Without a concept of self-awareness, beads could not even serve an aesthetic function. Furthermore, beads are among the earliest evidence of symbolically mediated behaviour and abstract thinking in modern humans (d'Errico *et al.* 2005, d'Errico and Vanhaeren 2007, 2009, Henshelwood *et al.* 2004, Kuhn *et al.* 2001, Vanhaeren *et al.* 2013). In traditional and historical societies beads are often utilised as specialised ritual equipment and ceremonial dress, or symbolic repositories of ancient knowledge endowed with animistic powers. For instance, among the Berber of Northern Africa the raw material utilised in the manufacture of beads is significant. Amber beads will protect against disease, while coral and silver encapsulate amuletic beliefs associated with good fortune (Dubin 2009, 151).

In traditional societies beads can act as a 'communication technology' conveying visual messages about the wearer's identity indicating their group affiliations, familial ties, life stage, religion, levels of wealth, among other things (Eicher 1998, Kuhn and Steiner 2007, Turner 1980). Ethnographic studies suggest that among indigenous societies, bead aesthetics are culturally determined by a common set of standards governed by the cultural traits of individual groups (Dubin 2009, Vanhaeren *et al.* 2007, 1107). Personal choices can then be executed within these parameters. In this way beadwork functions as an indicator of ethnolinguistic identity, fostering a sense of communal identity and emphasising differences between neighbouring groups (Dubin 2009, Hodder 1977, 239, Vanhaeren *et al.* 2007, 1107). This is true of beadwork among African, Asian, Northern European

and North American indigenous communities. For example, many of the tribes located throughout Southern Ethiopia are closely related including the Surma (Suri), Hamar, Erbore, Karo and Galeb. However, each tribe can be differentiated by individual beadwork combinations (Dubin 2009, 127) (Fig. 1.3). This method of communication is very effective when dealing with social strangers: that is, those who are close enough socially or culturally to understand what the beads represent, but do not know the wearer personally (Kuhn and Steiner 2007, 47, Kuhn *et al.* 2001).

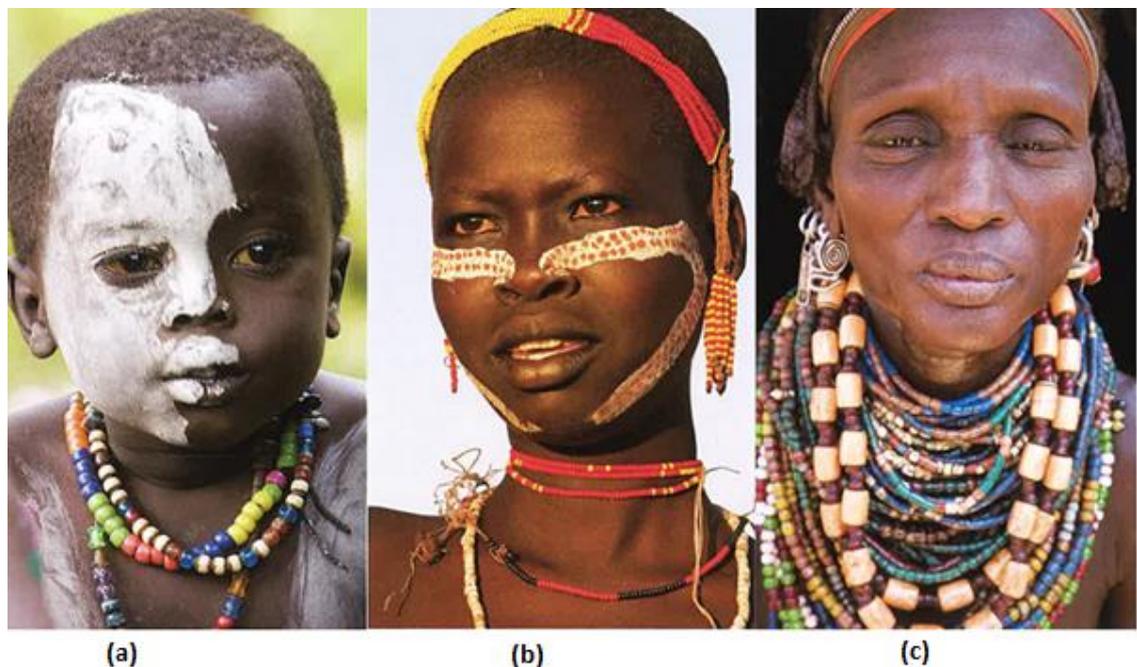


Figure 1.3: Tribal beadwork (a) Surma boy from Southwest Ethiopia with bead display; (b) Hamar girl from Turmi with bead display; (c) A Galeb tribeswoman from the Lower Omo Valley with bead display (after Dubin 2009, 127).

Traditional societies are often organised by clearly defined social levels or roles. Transition from one level to the next is marked by initiation rites or rites of passage (Herdt 1987, Turner 1969, 1974, Van Gennep 1960). Rites of passage can be organised around biological changes. However, they are also important agents of change in social relationships. They may include childhood, puberty, marriage, adulthood, motherhood, or death (Gardiner 1989, 168). Often, moving from one stage to the next involves ceremonial dress beads or ritual beads central to the

transition process (Eicher 1998, Lutkehaus 2013, Richards 2013). Furthermore, these changes in social status may be communicated by changes in the style and colour of beadwork. Thus, beadwork combinations can express information on age, social relationships and status. In the Samburu community in Kenya, beads act as markers for different life periods (Straight 2002, 2005). Babies are initially provided with a single string of beads, yellow for a girl and green for a boy. As girls age and are circumcised, they will be gifted with more beads from young admirers or by a *moran* or young warrior that has been chosen as her partner through childhood (Fig. 1.4a). Once a girl has reached puberty, she will be presented with cowrie necklaces by her extended family to encourage fertility. Boys receive no further beads until their introduction to manhood or *moranhood* when they will be presented with large beads by their mother (Nyambura 2013, 82). Beads are also representative of the wealth or prestige of an individual. The King of Kuba, a Camroonian region, wears regalia of over 84kg of beads in order to demonstrate his great wealth and power (Fig. 1.4b). Likewise, in the Benin culture of southern Nigeria, attendants of the king are awarded beads depending on their rank (Dubin 2009, 40). Beads can also be representative of ties between communities. Similarity in characteristics including raw material, standardised manufacturing techniques, and the distance that some beads have been found from their original source suggest that they were perhaps involved in long distance trade. This can be indicative of ties with neighbouring groups.

Perhaps most significantly, beads can represent a medium that is durable, transferable and can be standardised or amplified (Kuhn and Steiner 2007, 48-50). The durability and mobility of beads allows information to be transferred across distances and through generations. The adoption of a standardised set of physical characteristics, including colour, material and morphology, creates consistent systems of adornment reflecting social and symbolic values. These features are useful in the formation and maintenance of relationships among individuals and between groups. Beads are also 'amplifiable' in that their message can be intensified by increasing the quantity of material. The investment of time and

effort expended in the production of beads can also raise the amplitude of a message. Investment can manifest in procuring the raw material, the quantity of artefacts, or the modifications carried out (*ibid.*, 48-50).



Figure 1.4: African beadwork(a) Samburu woman wearing bead display including cowries (Dubin 2009, 131);
(b) King of Kuba in his 84kg beadwork regalia (after Laine 2012).

It is clear that beads have much to offer us in understanding aspects of personal and social identity and symbolism in Neolithic Ireland. In the past, the Neolithic was largely approached via the evidence available from megalithic tombs. However, recent development-led archaeology has resulted in a plethora of Neolithic sites (Fig. 1.5), from settlements to pits and monuments including timber circles, that are expanding the Neolithic horizon and altering our perception of what it means to be Neolithic (e.g. Carlin and Cooney 2017, Smyth 2014, Whitehouse *et al.* 2014). Re-evaluation and publication of older excavations at the Mound of the Hostages (O’Sullivan 2005) and Knowth (Eogan and Cleary 2017) have been supplemented by modern specialist reports and theoretical paradigms. The systematic study of antler and bone pins from passage tombs by Bergh and Hensey (2013), experimental work on bone and antler pins ongoing at UCD (Muiris

O'Sullivan pers. comm.), and the dating of food vessels and urns from Early Bronze Age graves by Brindley (2007), demonstrate that the reassessment of older artefact assemblages from passage tombs that have not been addressed in a comprehensive manner has the potential to afford new insights into Neolithic ritual. This background of change seems an appropriate time to reinterpret our perceptions of passage tomb ritual.



Figure 1.5: A selection of artefacts from the passage tomb assemblage at the Mound of the Hostages, Tara, Co. Meath (O'Sullivan 2005).

[1.3 Thesis overview](#)

The literature review (Chapter 2) provides an overview of passage tomb research in Ireland from the 19th century onwards which focuses on the stone bead and pendant assemblages that have been recovered from Neolithic horizons at passage tombs. Chapter 2 also explains the current state of archaeological bead research in Ireland, highlighting key developments over the last decade, demonstrating how bead studies have considerably advanced our understanding of various periods from the Bronze Age to the Early Medieval period. These advances are then considered in relation to analytical and theoretical innovations

in bead studies from other parts of the world in order to establish a definitive standard for the current research.

Chapter 3 introduces the passage tombs that have produced stone bead and pendant assemblages. The sites are divided into three types based on established dates and defining architectural characteristics, broadly in line with work carried out by Hensey (2015). These tomb types act as a tool to allow us to examine similarities and differences in bead assemblages in line with changes that occurred in the character of passage tombs over time.

The results chapter (Chapter 4) discusses the key patterns obtained through the analysis of the entire stone bead and pendant corpus from passage tombs in Ireland. The number of beads and pendants recovered in each assemblage are considered in relation to region, chronology and tomb type. Overall preferences in raw material, colour, morphology, and decoration are explored. In addition, evidence related to primary bead use, including heat exposure and wear, are considered. Finally, an overview of spatial distribution patterns within monuments and in association with artefacts and human remains is provided.

Chapter 5 presents a pioneering case of use-wear analysis using a Scanning Electron Microscope (SEM) on stone beads and pendants. The assemblage under consideration was recovered from the passage tomb at Knockroe, Co. Kilkenny during excavation by Prof. Muiris O'Sullivan, UCD, and the analysis was carried out by the author with his permission in the Dept. of Geology, UCD. The aim of this analysis was to definitively confirm or challenge previous assumptions of the way beads and pendants were used in Neolithic Ireland. The results provide new evidence of stone bead biographies, aesthetic preferences and suspension techniques.

Chapter 6 discusses the implications of these findings, that is, how the patterning evident in bead/pendant assemblages can contribute to our overall understanding of passage tomb usage and Neolithic worldview. Deconstruction of the biographies of beads/pendants using the results of use-wear, contextual analysis

and evidence of heat stress demonstrated in Chapter 5 facilitates discussion of the way in which beads/pendants were employed in passage tomb ritual. Preferences in physical characteristics such as shape, colour, and raw material of beads/pendants selected for deposition in passage tombs are considered in relation to ethnographic examples and prior archaeological interpretations, which is potentially a means of visually articulating abstract messages about Neolithic society and symbolism.

The concluding Chapter 7 critically reviews the aims of the research and summarises the principal findings from an analytical and theoretical perspective. This chapter also evaluates an enhanced methodology for future study. Various avenues are suggested as potential future research programmes.

Appendix A consists of a complete catalogue of 191 stone beads and pendants from Irish passage tombs, organised by county and townland, provided with an original numbering system. The catalogue forms the basis of this research, and was compiled using photographs, sketches, and analytical techniques over a three-month period at the National Museum of Ireland (NMI) (Fig. 1.6) and University College Dublin (UCD). This information was supplemented by details from excavation reports following a period of desk-based research. It includes sketches of each bead and pendant, plans demonstrating their spatial context within each monument, and details relating to typology, colour, raw material, and size, evidence of heat exposure, wear and context.

Appendix B documents artefacts that could not be included in the definitive catalogue. This includes lacunae in the catalogue due to artefacts that are documented in the literature but could not be located at present, and additional artefacts that may *possibly* have come from passage tomb contexts.

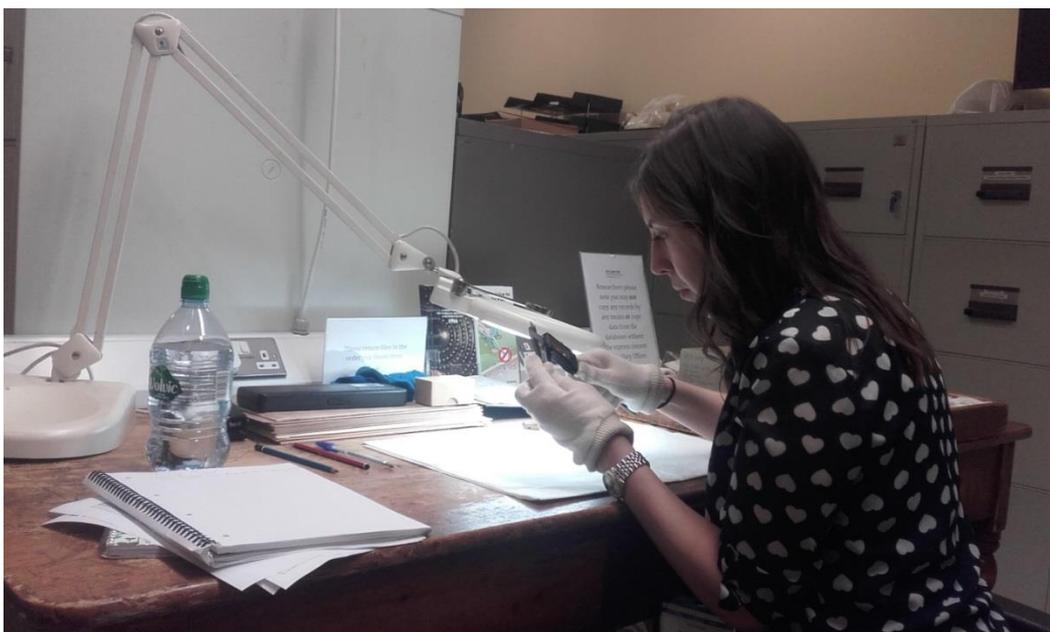


Figure 1.6: The author creating the catalogue at the National Museum Ireland, Dublin.

Appendix C consists of a petrographical analysis of 131 of the stone beads/pendants in the NMI and UCD carried out by Dr. Stephen Mandal on behalf of the author and funded by an I.T. Sligo Capacity Building Fund grant awarded to Dr. Marion Dowd. The initial macroscopic analysis was carried out using a hand lens and auxiliary identifications were ascertained using photographs. Mandal's report focuses on the rock types utilised in the manufacture of the beads/pendants, identifies evidence of heat/stress and burning, and ascertains potential sources for the raw material.

Appendix D provides a brief introduction to each of the 22 sites included in the study. The sites are divided into three sections based on site type and discussed in relation to morphology, chronology, evidence of disturbance and reuse and excavation techniques.

[1.4 Summary](#)

Due to their capacity for visually conveying complex social messages, beads are inextricably intertwined with the construction of personal and social identity in pre-industrial societies. Their symbolic and social roles in initiation rites, and the

communication of the status of individuals, demonstrate their potential in facilitating a serious dialogue around Neolithic identity and symbolism. This research is intended to amalgamate the information currently available for stone beads and pendants from Irish passage tombs, to instigate a re-examination of Neolithic bead assemblages, to encourage ongoing scientific analysis of stone beads and pendants, and to provide a basic methodology for Irish Neolithic bead studies going forward.

Chapter 2: Bead studies through time

This chapter outlines the general history of passage tomb research in Ireland, and specifically the research of stone beads and pendants from Irish passage tombs. The first half of the chapter focuses on the exploration of passage tombs from the Early Medieval period until the 17th century, outlines the socio-political structures that led to the investigation of passage tombs, highlights key antiquarian beadwork contributions (including early excavations, collections and publications) and evaluates modern archaeological research conducted on stone beads and pendants discovered in Irish passage tombs. The second half of the chapter examines how bead studies have advanced in modern academia, demonstrating the benefits of applying new approaches to older assemblages. This section evaluates the current state of Neolithic stone bead research in Ireland prior to this analysis, in addition to current Irish bead studies from other time periods. The final section explores analytical, technological and theoretical advances in bead studies from Europe and further afield providing a comprehensive baseline for the re-examination of older assemblages using techniques and perspectives that have proved beneficial on assemblages from other countries and time periods.

[2.1 Fragmentary accounts](#)

Passage tombs are highly visible monuments in the Irish landscape, and as such have remained the subject of fascination and curiosity throughout prehistory and history. Occasional accounts throughout Medieval texts suggest that prehistoric mounds were investigated in Early Medieval and Medieval times through treasure hunting activities and general curiosity. Details of these investigations are vague and elusive, and it is implied that the majority of items were reburied, treasured as talismans, or sold on if the material was valuable (Waddell 2005, 8).

Certain narratives suggest that the plundering of caves recorded in Medieval texts may in some cases be referencing passage tombs (Dowd 2015, 55). The Annals of Ulster recorded plundering activities carried out by Vikings in AD 862, *‘the cave of Achadh-Aldai, and of Cnodhba, and the cave of Fert-Boadan over Dubadh and the*

cave of the smith's wife, were searched by the foreigners which had not been done before' (Lucas 1971/3, 171). This was also reported in a second version of the annals that stated, '*The plundering of Breagh by the Lochlanns and they entered into many crypts a thing not done before'* (*ibid.*, 171). These 'caves' have been identified as the passage tombs of Knowth and Dowth, Co. Meath (Dowd 2015, 54).

[2.2 Beads of belonging](#)

Passage tombs received more dedicated research throughout the 17th and 18th centuries due to the socio-political changes that were occurring at this time. By the 17th century the Anglo-Irish gentry began to develop a curiosity and sense of pride in the shared cultural heritage of Britain and Ireland and emphasised the importance of Irish history and heritage. This sense of colonial nationalism was in part a reaction against poor government administration and the authority claimed by the English government to legislate for Ireland, and partially a desire to find a native identity for the colony. Irish nationalists encouraged this interest in a new Anglo-Irish identity as it supported and strengthened their own cause for a united Ireland free from British rule (Leerssen 1986, 54- 6, Simms 1986, 269).

The growing Irish identity among the ascendancy prompted a renewed interest in Irish literature and antiquities, providing revitalised historical, legendary and folkloric narratives around megaliths. The late 17th and early 18th centuries saw the formation of a series of organisations concerned with the interpretation and publishing of information related to the natural landscape, scientific enquiry and antiquities. Societies such as *The Dublin Philosophical Society* (1683), the *Royal Irish Academy* (1728), and *The Physico-Historical Society* (1744), were the first to receive accounts of the investigation of Irish passage tombs (Hoppen 1970, 155, Magennis 2002, 205, McDowell 1985, 3). The earliest recorded discovery of beads from a passage tomb occurred during this period. The beads were recorded by Welsh antiquarian Edward Lhuyd at Newgrange in 1699 (McGuinness 1996, 62). Lhuyd's discovery was detailed in four letters to his friends in which he described

the layout of the tomb and the finds which he believed were of interest including 'bones of beasts' and 'some kinde of beads' as communicated to him by the labourers on site (*ibid.*, 63). Lhuyd did not provide a detailed description of the beads, but the antiquarian Louisa Beaufort supplied additional details in 1828, describing them as glass with a snake painted around them (Beaufort 1828, 121). These beads were not primary artefacts, but likely later intrusions. At this stage there was little documented evidence of artefacts from primary contexts in Irish passage tombs; a pottery vessel from Warringstown passage tomb, Co. Down (Molyneux 1726, 184), and the beads and polished stone axe head from Newgrange, represented the entire body of evidence. The accounts presented to these societies often focused on what were considered the more remarkable aspects of passage tombs, relaying information about the architecture, art, human remains, and later metalwork as opposed to small finds such as beads. However, the 18th century European enlightenment saw the initiation of a period of alternative thinking about the past that generated scientific enquiry into various types of artefacts.

[2.3 Patterns and progress](#)

When the Act of Union was passed in 1800 following the 1798 rebellion, executive power devolved to London, the great houses fell into disuse, and intellectual studies deteriorated as the dynamic of Dublin city changed (Bourke 2011, 91). Antiquarian studies were curtailed and subscriptions to *The Dublin Philosophical Society* and the *Royal Irish Academy* fell into decline. The religious and social gulf that existed between Protestants and Catholics reemerged as the economy slowed down and the population increased (*ibid.*, 91).

The Ordnance Survey (O.S.) was set up in 1824 to provide a set of detailed maps on which the valuation of land could be based (Herity and Eogan 1977, 7, Waddell 2005, 97). In addition, a topographical department was established to address the problems posed by the mapping of place-names and antiquities. The romantic theories of megaliths championed by antiquarians such as Vallancey and Pownell

were eschewed in favour of a more scientific focus on the collection of data related to these monuments. The O.S. maps offered exciting new prospects for research, allowing, for example, Margaret Stokes to publish a distribution map of 283 recorded megalithic tombs in 1881 (Stokes 1881). Six years later Borlase calculated that there were over 800 megaliths across the island (Borlase 1897). As part of the mapping process, the O.S. began a systematic collection of information on megaliths through excavation and survey. At this stage many passage tombs had already been damaged or destroyed as a result of the ministrations of explorers and antiquarians, and quarrying activities. For example, George Petrie noted that Carrowmore passage tomb cemetery, Co. Sligo, had suffered a significant reduction in the number of tombs as a result of such issues (Fergusson 1872, 181). Petrie believed that there may originally have been over 200 monuments in the complex. However, by 1838 only 63 monuments remained (McGuinness 2010, 31). Excavations were carried out by the O.S. and independent archaeologists, with a number of these published in the new *Proceedings of the Royal Irish Academy* and later in the *Journals of the Kilkenny Society* and the *Ulster Society*. Societies such as the RIA instigated their own series of investigations, including Knockingen, Donegore and Dowth (Frith 1847, Hamilton 1884, Wilde 1857).

In 1838 Petrie provided details of a series of excavations that began in 1832 at Carrowmore, Co. Sligo by Mr. Walker, the proprietor of the land, in which he described recovery of a variety of material including cremated bone, beads, stone balls and other implements (Fergusson 1872, 184). The Carrowmore cemetery was again inspected and excavated in the early 1870's by Wood-Martin, a celebrated antiquarian and sheriff of Sligo county (Wood-Martin 1888, 542). Although a number of tombs produced beads and pendants, Carrowmore 3 proved to be the richest of the entire series, producing finds during Walker's examination and Wood-Martin's excavation (*ibid.*, 542). The single stone pendant and five beads from the excavation of Carrowmore 3 were submitted to William Knowles and Dr. W. Frazer, both respected antiquarians who had expressed a keen interest and knowledge of Irish bead assemblages of various periods. They provided geological

information and inferred that the items had been subjected to burning. Significantly, they identified one of the items as a quartz pendant, one of only three examples available countrywide at this point (I.D. 186) (Wood-Martin 1888, 549), and the only example recovered from an Irish passage tomb. The submission of these objects to then specialists in the field resulted in good quality analysis and reporting, including particulars regarding measurements, perforation and images (Fig. 2.1).

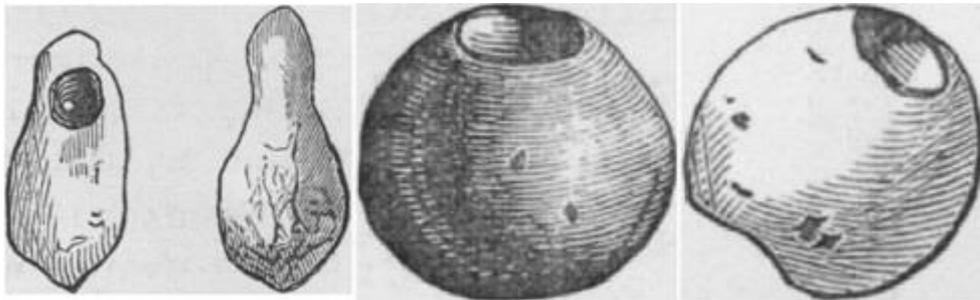


Figure 2.1: Quartz pendant and stone beads from Carrowmore 3, Sligo (after Wood-Martin 1888, 542).

In 1844 Lieutenant Newenham of the Ordnance Survey excavated a passage tomb at Knocklea, Co. Dublin as well as one of the smaller satellite passage tomb sites (L) at Newgrange. The published account of the excavations does not include any reference to beads (Wilde 1846). However, Newenham's unpublished excavation notebook included detailed sketches of four small white beads (O'Kelly *et al.* 1978). It is possible that these were the beads rediscovered in 1947 by Flanagan, who published an account of four bone beads discovered in the Belfast Museum that had been bequeathed by Colonel Berry in the *Ulster Journal of Archaeology*. They were stored with a card that suggested they were recovered from a small tomb near Newgrange, possibly site L. Flanagan noted that:

"Among the objects bequeathed to the Belfast Museum by Colonel Berry in 1947 were four small bone beads and a small bone ring mounted together on a card on which was written: "Found in a grave at New Grange, Co. Meath." For this reason, they seem worthy of record." (Flanagan 1947, 61) (Fig. 2.2).



Figure 2.2: Bone beads possibly from Site L Newgrange (after Flanagan 1947, 61).

In 1863, Eugene Conwell began an examination of a number of passage tombs at Loughcrew, Co. Meath. Until then many of these mounds had survived undisturbed, and a number were not recorded by the Ordnance Survey (Conwell 1864, 359). Conwell's excavation was extensive. Each tomb was examined, and the details published between 1864 and 1873. The relatively intact cairns produced few grave goods but did include a stone bead and a pendant (I.D. 140-141) from beneath a flag in an interior compartment in Cairn I, in association with cremated bone (*ibid.*, 365). Conwell acknowledged the need for further interpretation of these artefacts, conjecturing that they may have formed part of a larger composite piece, and that they may have been subjected to burning. The degree of detail offered by Conwell was impressive for the time including rudimentary spatial locations, aesthetic information and simple measurements for example, '*the greatest diameter of the bead is three quarters of an inch long*' (Conwell 1864, 365).

Further excavations at Loughcrew were carried out by Lieutenant Rotherham of the Ordnance Survey and George Coffey, Keeper of Antiquities at the RIA in 1894, in the hope that Conwell's excavation had not been exhaustive (Coffey 1897, 30). An initial exploration of the sites produced a number of beads, including a stone pendant from the floor of Cairn S. Rotherham had also carried out preliminary excavations at Cairn X some years earlier, which had produced a stone pendant in association with a number of other finds (I.D. 144) (*ibid.*, 36). Overall, this campaign led to the recovery of eleven stone beads and six stone pendants from several sites that had previously been excavated by Conwell, including Cairn H (I.D. 100) and R2 (I.D. 101-117) (*ibid.*, 32). Rotherham and Coffey produced

independent publications in later years which provide limited information relating to the artefacts, focusing on the number recovered from each tomb and their spatial location within the chambers, but without detailed descriptions or comparisons.

In 1894 Thomas Plunkett carried out an excavation of a passage tomb on Belmore Mountain, Co. Fermanagh, previously unknown to locals or antiquarians. Plunkett conveyed the results of this excavation to George Coffey, who in turn presented the findings to the RIA in 1898 (Coffey 1898, 659). Although the excavation was not carried out in a scientific manner, the narrative was detailed and conveyed the natural progression of the excavation. A large quantity of cremated bone was removed *en masse* from the chambers, and beads '*were picked out from among the burnt bones, so spread out, but it is not possible to say whether they came from any particular compartment or chamber*' (*ibid.*, 662). The report placed considerable emphasis on the pottery recovered; it is clear that this was Plunkett's main interest as it could provide dating evidence. Plunkett identified the similarities between the Belmore beads (I.D. 1-8) and those recovered from Loughcrew some years previous, and addressed particulars on the nomenclature, geology and perforation typology. However, descriptions are lacking in terms of dimensions (Coffey 1898, 664). Plunkett provided additional information including issues of wear, noting that several of the beads were highly polished and at least one had been exposed to heat (*ibid.*, 666). The report also included a photograph of the entire assemblage (Fig. 2.3).

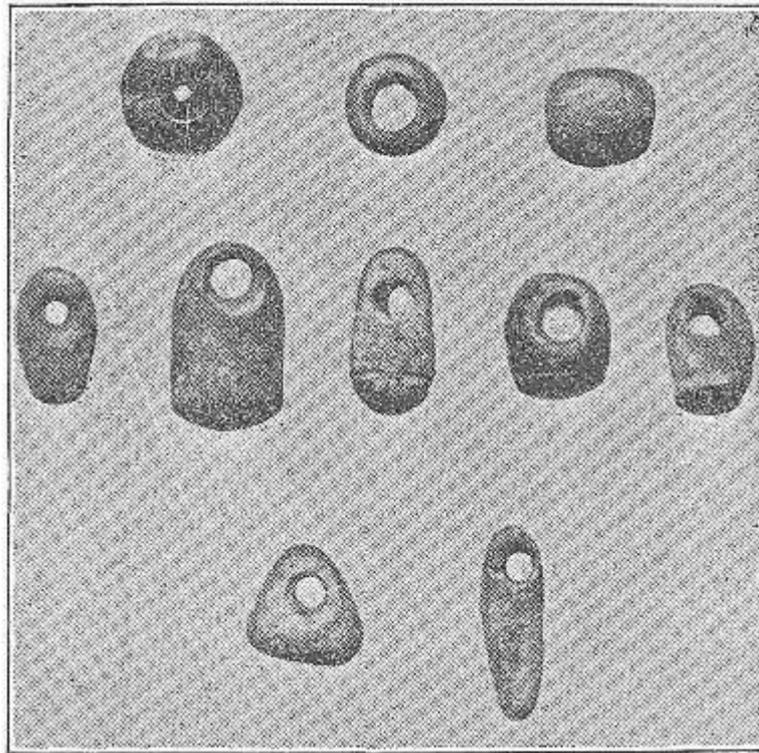


Figure 2.3: The stone bead and pendant assemblage from Belmore Mountain (after Coffey 1898, 665).

These late 19th century excavations produced some of the largest bead and pendant assemblages to date. Despite discrepancies in detail, the publications presented detailed illustrations and images, and provided the initial forays into petrographic and comparative analysis. The results of these excavations would identify stone beads and pendants as one of the primary constituents of the typical passage tomb assemblage.

[2.4 The great collections](#)

The tradition of collecting archaeological artefacts was well established prior to the 19th century, resulting in a number of exceptionally large private collections in Ireland (Woodman *et al.* 2008, 9). The work of the Ordnance Survey further stimulated an interest in the collections held in various institutions throughout the country, resulting in a revival in the acquisition artefacts in both public and private spheres (Herity and Eogan 1977, 10, Waddell 2005, 118).

The growing collections of antiquarians gradually transitioned from cabinets of curiosities to a requirement for more storage space. This period saw educational institutions renew efforts to establish public museums, including the Royal Irish Academy, Trinity College and The Dublin Philosophical Society (Bourke 2011, 29). The transferral of collections into small public museums was initiated in Dublin, Cork and Belfast (Waddell 2005, 179). The Museum of the Belfast Natural History and Philosophical Society opened in 1831, and over £2,500 was raised by public subscription by Autumn 1833 (Herity 1961, 30-1). The RIA made the first real move towards establishing a national archaeological collection in about 1840, curating a growing body of artefacts for public consumption (Bourke 2011, 30). In 1857 Sir William Wilde was commissioned to catalogue the now vast RIA collection. This catalogue was published in three volumes in 1857, 1861 and 1862, and these compendiums were well received by antiquarians of the time:

“As a contribution to our knowledge of the armour, weapons, dress and ornaments in use amongst the ancient people of Ireland, the fourth and fifth chapters of Wilde’s ‘Catalogue of the Antiquities in the Museum of the Royal Irish Academy’ far exceed anything that has ever been written” (Graves 1861, 267).

Wilde’s catalogue recorded an assortment of 80 beads and pendants of various materials including the stone varieties associated with passage tombs. The beads and pendants were retained together on a series of trays in three compartments in the RIA collections. Wilde did not provide contexts for the vast majority of these beads; whether any context was available is not forthcoming in the text. For example:

“In the second row from No. 4 to No. 16 will be found thirteen beads derived from various localities” (Wilde 1857, 122).

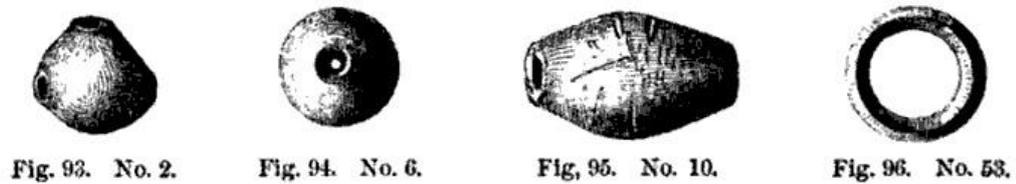


Figure 2.4: Collection of stone beads from Wilde's catalogue (after Wilde 1857, 122).

The subsequent descriptions vary greatly in detail, from detailed dimensions, notes on geology and drawings (Fig. 2.4), to arbitrary measurements, and little descriptive information. Yet despite the growing popularity of these education-based institutions, private collections continued to flourish. To illustrate this, in the decades between 1880 and 1920 the collections of the archaeological societies in Ballymeena, Co. Antrim, were cumulatively responsible for 70,000 artefacts (Fig. 2.5) including a large selection of beads (Woodman *et al.* 2006, 22). These societies featured a number of prominent collectors including William Knowles, Reverend Buick, George Raphael, Leonard Hassé and Canon Grainger (Woodman *et al.* 2006, 22). Knowles' collection originally contained over 200 examples of stone beads and pendants, and the collection of antiquarian Edward Benn contained 290 stone beads and pendants at the time of his death in 1880 (Patterson 1880, 296). The quantity of stone beads from public collections was not widely publicised. However, a detailed report enumerating the statistics of glass beads available in public and private collections in Ireland was published in 1881 and gave an indication of the size of personal glass bead collections in comparison to public arenas (Hassé 1891, 360). The largest numbers were available in private collections, including Knowles (248 beads), Canon Grainger (142 beads), and Day (161 beads), in comparison with the RIA (106 beads) and the Belfast Museum (99 beads) (*ibid.*, 361). This would suggest that the majority of stone beads were also likely held in private collections.

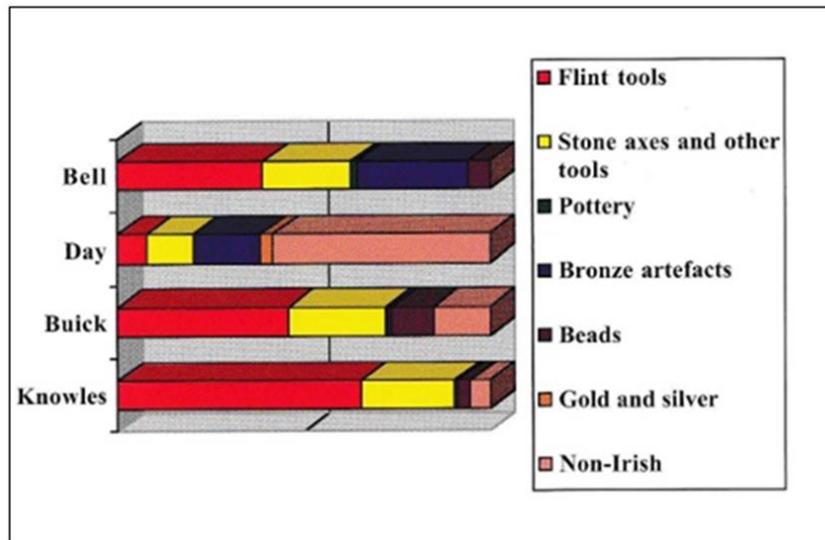


Figure 2.5: Artefacts in the collections of the Ballymeena societies including beads of a variety of materials (after Woodman et al. 2006, 22).

Glass beads were likely deemed more significant than stone beads due to their attractive colours and shapes, and their association with fine craftsmanship. Stone beads may have seemed mundane in comparison. The majority of the discourse concerning beads was written by collectors who discussed their own collections and those of their contemporaries; as a result, their primary focus was on the glass variety. A review of stone, glass and jet bead publications displays the avenues of inquiry that collectors adopted for their bead collections including the identification of provenance, sequences of manufacture, typology, and temporal relationships (Day 1869, 1887, Hassé 1888, Frazer 1892).

Knowles' seminal article in 1881 entitled *Ancient Irish Beads and Amulets* provided a classification system for stone and glass beads based primarily on their appearance and manufacturing technique (Fig. 2.6). This system had been developed in conjunction with other members of the Ballymeena Archaeological Society and, although it was by no means exhaustive, it was utilised by others in later publications (Atkinson 1883, Hassé 1891). Knowles' observations of stone beads including classification, geology, provenance, manufacture technique and appearance, were unparalleled in the literature. His familiarity with bead

collections throughout the country led him to discern two classes of prehistoric stone beads (Knowles 1881, 524). Type 1, the older of the two classes, had an irregular outline, was manufactured of attractive stone, and was highly polished with a bi-conical perforation. Knowles believed that beads with irregular outlines were generally manufactured from more precious and attractive stone. *'It occurs to me that the ancient people who used these ornaments considered the material very precious and were unwilling to lose any of it by rounding the edges'* (*ibid.*, 523). A number of Type 1 beads from Knowles' collection were assessed by Professor Hull of the Geological Survey of Ireland who believed they were Donegal serpentine (*ibid.*, 522-523).



Figure 2.6: Images of stone and glass beads from the Knowles collection (after Knowles 1881, plate 1).

Knowles believed that Type 2 were probably beads, though there was the possibility that they acted as spindle whorls. They were completely circular in outline, conically perforated, and often displayed ornamentation in the form of scratches on their surface (Knowles 1881, 522). Crucially, Knowles identified wear marks on the surface of a number of beads: *'The marks have evidently been made by cords working back-wards and forwards for a long time in the same track'* (*ibid.*, 524).

Despite the large quantity of material available in the 19th century, very few publications discuss stone beads and Knowles' 1881 article remains the exception. The literature remains firmly grounded in the provenance of glass and jet beads (Day 1887, Hassé 1888, Frazer 1892). The discourse surrounding jet and glass beads employs typological preferences, manufacturing techniques and analogous examples from international collections to draw conclusions regarding origin and date. These artefacts are usually described in great detail and supplemented by comprehensive illustrations (e.g. Day 1869, Atkinson 1881). The level of interest in glass beads is likely due to their perceived exotic nature and the ready availability of specimens for comparative discussion from locations including Scandinavia, Africa and the Middle East. Prevailing problems were apparent within these lines of enquiry, however, including issues of dating, context and associated material. Many of the glass, jet and stone specimens were recovered in isolation and had no associated artefacts making them impossible to date (Coffey 1912, 12). Most of the beads held in private collections were the result of transactions with travelling dealers. Collectors were far more interested in growing their collections than the details of acquisition, resulting in ambiguity regarding the original contexts of beads (Woodman *et al.* 2006, 22). This void was supplemented by conjecture and speculation based on known find spots as illustrated by Day's article on glass beads in 1869: *'It probably came from one of the many Westmeath crannogs, or tumuli and as it is no uncommon thing to find an ancient glass bead on a peasant's rosary, so it might in old times have been placed by the finder on his or her "beads" and might have accidentally dropped off'* (Day 1869, 335).

In academic institutions the ambiguity associated with the original find spots led to the omission of contextual information. This difficulty was recognised by George Coffey when appointed the curator of the Royal Irish Academy's collections in 1897, who found that the early registers of the Academy often omitted all details of acquisition (Coffey 1912, 12). Additionally, the manufacture and sale of forgeries became a market that would call the legitimacy of many beads into question. Knowles utilised his 1881 article as a platform for addressing

concerns about the number of forgeries and modern beads that he had noticed masquerading as prehistoric examples in several prominent antiquarian collections:

“but large numbers of the beads in these, as in the Benn collection, are quite plain, small and unornamented, and many common beads of recent date are mixed in with them.” (Knowles 1881, 529).

It appears that Knowles was more cognisant of the problems with purchasing from dealers than most collectors of the time. He highlighted several cases whereby he recognised forgeries that had slipped unnoticed into various collections. In one instance Knowles had manufactured a forgery himself and given it to a dealer to help him identify additional forgeries (Knowles 1881, 527). However, to Knowles’ astonishment, the forgery was purchased and subsumed into the collection of his colleague Canon Grainger. The antiquity of glass, amber, and jet beads were also tainted by the possibilities of forgery. Unornamented glass beads were not taken into account in the overall figures of glass beads in Irish collections published by Hassé in 1881 as it was considered a firm possibility that many may have been modern. Their inclusion would have raised the final figure of glass beads from 1,006 to approximately 5,000 throughout public and private collections nationwide (Hassé 1881, 359).

Contemporary antiquarians and later archaeologists such as R. Macalister were disapproving of the role of collectors, particularly their custom of auctioning off their material (Macalister 1928). This practice was also common following the death of a collector. The acquisition of Irish material at auction was often mismanaged and poorly recorded, resulting in further losses of information regarding collections. The dispersal and distribution of collections both nationwide and internationally means that Neolithic stone beads and pendants from passage tomb contexts may have been subsumed into exhibitions and private assemblages with little indication of the original context. However, this collecting practice took

place in a period where there were no public institutions with specific curatorial responsibility for heritage material (Woodman *et al.* 2006, 11).

To summarise, the evidence available regarding passage tomb stone beads and pendants in the 19th century is coloured by a deficiency of origin information, an absence of published data, and the irrefutable damage to Irish collections caused by the auctioning and dispersal of material to national and international proprietors. As explained by Hassé in 1891;

“We have, no doubt, to lament the loss of a large number of our old Irish beads after their first discovery. In reports of different finds in the early part of the century, before an intelligent interest in antiquities of every description was as general as it has now become, mention is frequently made of glass beads, which accompanied other and larger remains. It is to be feared that the same hands of children, which would ruthlessly put up such precious relics as burial urns as a ‘cockshot,’ would be no more conservative of little bits of beads. A considerable quantity has also left the country.” (Hassé 1891, 359-60).

These issues ensure that it is impossible to enumerate the number of stone beads and pendants featured in these antiquarian collections that may be attributed to passage tombs.

[2.5 Changing times](#)

At the end of the 19th century the trend in megalithic studies was on describing, classifying and comparing the monuments with little discussion of function or the role of associated artefacts. A number of extensive surveys of Irish megalithic tombs were completed such as *Carte Montrant la Distribution des Principaux Dolmens D’Irlande* (Stokes and Ernault 1882), *The Rude Stone Monuments of Ireland* (Wood-Martin 1888), and *The Dolmens of Ireland* (Borlase 1897) containing descriptions and illustrations of hundreds of megalithic tombs. These surveys provided a basis for the comparative study of Irish passage tombs across

various regions and with European examples resulting in a rise of new interpretations.

In 1909, University College Cork (UCC) and University College Dublin (UCD) appointed their first professors of archaeology, Sir Bertram Windle and Robert Macalister respectively (Waddell 2005, 191). Macalister can be credited with initiating archaeological excavation on a wider scale in Ireland and highlighting the importance of the passage tomb cemetery at Carrowkeel, Co. Sligo. It was first examined by Praeger in 1886 and consequently excavated by Macalister and team in 1911 (Macalister *et al.* 1912, 314). The team attempted to excavate, plan, and take levels of eight cairns, in sixteen days, over three successive periods that year. The excavations were not carried out in a scientific manner. The bones from each of the chambers were removed and sifted for artefacts (*ibid.*, 316). Consequently, no frame of reference for spatial locations of the discovered beads and pendants can be established. Despite this, the excavation was successful in another sense; the results were well recorded and published soon after (Hensey *et al.* 2013, 7).

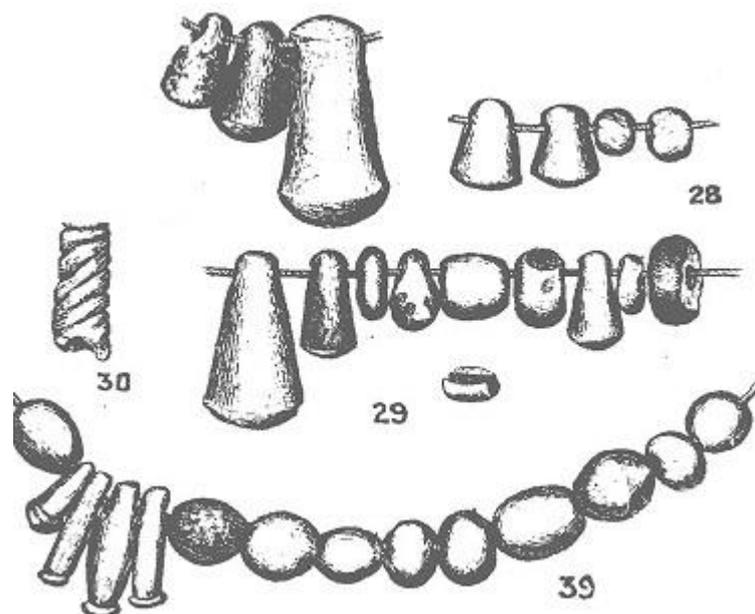


Figure 2.7: Bead and pendant assemblage from Carrowkeel (after Macalister *et al.* 1911, plate XXIV).

The stone bead and pendant assemblage from Carrowkeel remains one of the largest and most impressive examples recovered from passage tomb contexts in

Ireland, comprised of 13 pendants and 22 beads (I.D. 150-185). Macalister recognises this throughout the report, comparing and contrasting those from similar sites such as Loughcrew. Macalister's published account described the artefacts in detail and they were all well-illustrated, although items such as the worked bone artefacts and pottery were given priority in the text. The description of the beads was well executed, providing dimensions as well as meticulous diagrams (Fig. 2.7). Interestingly, the party had the beads examined by geologist Dr. Hallisey of the Geological Survey of Ireland. Hallisey identified the raw materials including local limestone and steatite, and imported jasper and serpentine (Macalister *et al.* 1911, 339).

In 1928 an assemblage of six stone beads and pendants were excavated from a passage tomb at Fenagh Beg in County Leitrim. These were donated to the National Museum of Ireland in the same year; however, no account of the excavation has ever been published. This assemblage was the focus of an article by Gogan (1930, 95). It is interesting that the *Archaeological Inventory for Leitrim* (Moore 2003) lists the beads and pendants (I.D. 29-34) recovered from this site as bone, even though Gogan's text makes clear that he is referencing stone artefacts. Gogan's article included an in-depth review of the visual characteristics of the stone beads and pendants, detailed illustrations, and specifics of associated artefacts (*ibid.*, 95). He also compared the Fenagh Beg assemblage with the assemblages recovered from Carrowkeel, Loughcrew and Belmore Mountain. Gogan considered the pendants to be miniature reproductions of more recognisable artefact types; the most likely analogous form is that of Neolithic pestle-hammers, with Danish toggles also a possibility. He also toyed with the idea that these items had an amuletic value as virility or fertility symbols. Similar pendants of amber and shale were recovered from Bronze Age barrows in Wiltshire, England (*ibid.*, 96). Later writers would refute Gogan's analogy; Childe (1940) and Piggott (1954) would claim that the Wessex pendants were direct copies of the Irish ones, or that the Boyne and Wessex culture were contemporary. Nevertheless, Gogan's article is commendable in the progressive approach

adopted in the study of a bead assemblage. This was the first instance that Irish Neolithic stone beads and pendants had been discussed autonomously from other artefacts, in the manner that pottery and axes had occasionally been addressed.

In 1934 a provision of government funds was allocated to areas where there were higher levels of unemployment for the excavation of local archaeological sites, including megalithic tombs. The excavation of the Harristown passage tomb, Co. Waterford, was the product of one such employment relief scheme, administered by the Office of Public Works and the National Museum of Ireland in 1936 (Hawkes 1941, 130). The excavation procedure followed was very advanced for the time, including comprehensive plans and photographs as well as detailing the methodology of the excavation, published by the excavator Jaquetta Hawkes (1941). The post-excavation work carried out was also far above the standard of the time: osteological analysis was undertaken in Oxford; a petrographic report was carried out on the construction orthostats; and radiocarbon dating was carried out on charcoal samples (Hawkes 1941, 130). It is unsurprising, then, that the treatment of the bead assemblage is equally advanced. As the only artefacts recovered other than pottery, Hawkes spent a great deal of time in her report discussing the importance of the polished limestone bead and the steatite pendant (I.D. 192) recovered from the chamber (*ibid.*, 137). Both were given a detailed description, illustrated (Fig. 2.8), and their geology identified. Hawkes displayed an awareness of the suggestion of external influence, evidenced in artefacts and architecture. She discussed the pendant in relation to Gogan (1930), using his inference that these beads imitated international examples and appeared to be miniatures of larger Neolithic artefacts (Hawkes 1941, 145).

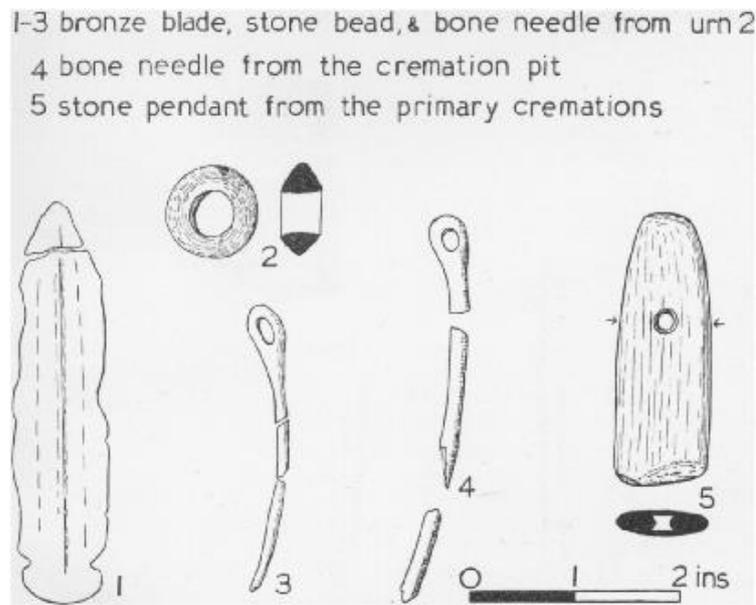


Figure 2.8: Artefact assemblage from Harristown Co. Waterford , including stone bead (no. 2) and pendant (no. 5) (after Hawkes 1941, 139).

Between 1950 and 1952, Patrick Hartnett excavated three passage tombs at Fourknocks, Co. Meath, again funded by the government employment scheme and with the permission of the RIA (Hartnett *et al.* 1957, 198). Hartnett found that although Fourknocks 1 had been dug into by treasure hunters a number of years earlier, it was relatively undisturbed. Six beads and five pendants (I.D. 118-128) were recovered in association with primary burials in the recess and the entrance passage (*ibid.*, 231). The information published related to the context was scant, often referring to the location in a broad sense such as ‘*a cremation located in the passage*’ (*ibid.*, 231). Hartnett’s interpretation of the stone beads and pendants was largely superficial, he considered them luxury grave goods and emphasised that: ‘*the two pestle shaped pendants of highly polished stone are unequalled for perfection of design and finish than anything previously recorded from a passage grave site*’ (*ibid.*, 238). Hartnett provided an inventory that included comprehensive images, excavation numbers, detailed descriptions, and information related to the context of each artefact. He focused on details of the stone beads and pendants including their typologies, a general idea of size, their context, and additional observations, including the identification of perforation

method: 'the track of the rotary drill used to make the hour-glass perforation was not entirely obliterated by the subsequent polishing' (Hartnett *et al.* 1957, 241). The image provided was of good quality (Fig. 2.9), and included side profiles as well as a scale (*ibid.*, 240). Hartnett was also aware of Gogan's earlier work regarding stone beads and pendants. His report highlighted his disagreement with Gogan's theory, indicating that: 'too much emphasis has been placed on what is only an apparent similarity of form, while the very real differences are ignored' (Hartnett *et al.* 1957, 230). It is clear that Hartnett believed that the Irish stone pendants were of an indigenous origin.

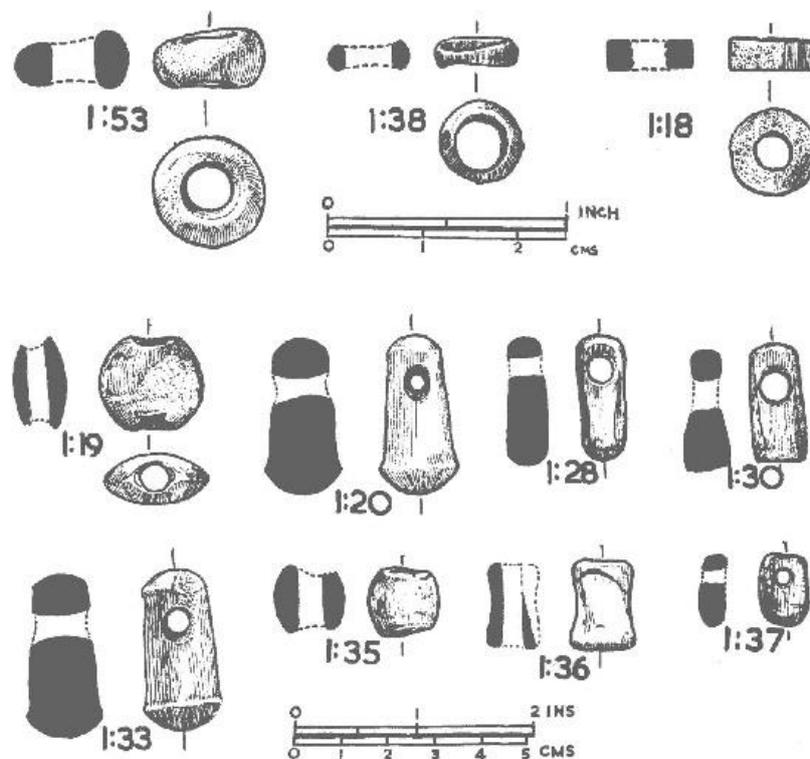


Figure 2.9: Bead assemblage from Fourknocks (after Hartnett 1957, 239).

The principal work to date that has dealt with passage tomb artefacts as a whole is Herity's (1974) publication: *Irish passage Graves Neolithic tomb builders in Ireland and Britain 2500 BC*. This tome amalgamates evidence from antiquarian accounts, museum collections, and excavations that were still ongoing (including Newgrange and Knowth). The book features a detailed inventory of the artefacts recovered at each site, including stone beads and pendants, containing

dimensions, information on heat stress, and detailed sketches (Herity 1974, 208-93). In addition, the chapter concerning burials, burial ritual and grave furniture, contains sections dedicated to pendants, pendants as miniatures, beads, necklets, and their occurrence and distribution (*ibid.*, 126-32). These sections summarised information relating to morphology, material, distribution, and similar artefacts from alternative sites both domestic and foreign. In Herity's opinion, the majority of stone pendants are miniatures of miner's mauls or pestle hammers and axe pendants, whereas beads often occur in flat or cylindrical shapes. In addition, the majority of bead/pendants are manufactured from steatite or limestone, although semi-precious stones including carnelian, jasper and serpentine were also used (Herity 1974, 126-32). Herity also expanded his theories, citing these artefacts as an indicator of the personal ornamentation of a passage tomb builder, with heat-stress suggesting they were pyre goods. In addition, Herity suggests that the small number of artefacts in relation to cremated remains may be indicative of social or sexual differentiation (*ibid.*, 132). Herity utilised all available information from human remains, artefacts, architecture and megalithic art to produce all-encompassing theories on topics including art, symbolism, and burial ritual. These aspects of passage tomb technology had never been addressed in such a comprehensive manner, and Herity succeeded in providing a foundation for passage tomb research which is still relevant and widely used to date.

[2.6 And the bead goes on...](#)

Knowth and Newgrange passage tombs have been the focus of numerous of archaeological investigations, initiated in the 1960's by M. J. O'Kelly and George Eogan. Containing up to 20 passage tombs, the Knowth cluster is the largest of the Bend of the Boyne complex (Eogan 1986, 14). In 1962 excavations were initiated as a means of assessing whether there were sites surrounding the large tumulus of Knowth 1. The rich results of the investigation (three smaller tombs were discovered in the immediate vicinity) prompted a programme of research over the succeeding decades (Eogan 1986, 22). In total, 18 sites were uncovered. The main monument, Knowth 1, was found to contain two tombs situated back to back, the

western and eastern tomb. The eastern tomb produced a number of stone pendants and beads in association with cremated bone and other grave goods (Eogan 1986, 39). Many of the satellite tombs also contained stone bead and pendant assemblages, including Knowth 6, Knowth 15 and Knowth 16 (*ibid.*, 69-82). The published information related to these beads is confined to the identification of material and a general context within the tomb, including details of the basic area and the associated finds (*ibid.*, 82). The illustrations are of good quality depicting beads in front and side profile (Fig 2.9) and identifying the tomb that each bead was recovered from, although the specific contexts within the tomb are not acknowledged. Eogan noted: *'The most common items are things that could have been used for personal adornment or wear, particularly pendants, beads and pins'* (Eogan 1986, 140). Eogan's Knowth publication also summarised the pre-existing theories on passage tomb beads and pendants. He identified over 70 examples of stone, ceramic and bone pendants and beads (I.D. 129-133), listing a variety of types, various perforation forms, and diverse manufacturing materials (Eogan 1986, 142). Eogan noted differences between beads and pendants, including the exotic nature of the material used for pendants and the miniaturisation of artefacts evident in the pendant material.

O' Kelly's investigation of Newgrange began in 1962 and the succeeding examination of the material continued for about 20 years before being published in 1982. O'Kelly divided the finds by context, including the bead and pendant assemblage which consisted of four possibly ceramic hammer pendants and two ceramic beads from within the tomb (I.D. 134-139), and two stone disc beads from outside the tomb. Each specimen was given a separate entry, which consisted of a descriptive analysis (including detailed measurements) and an accompanying illustration (O'Kelly 1982, 193). There was little discussion of petrography. There are a number of coloured photographs included, but it is difficult to discern individual beads as they are not labelled.

Newgrange also has three satellite tombs located within close proximity to the great mound, sites K, L and Z. It was realised shortly after excavation of the main tomb that these tombs were under threat from farm development and as a result were excavated in 1968/69 (O’Kelly *et al.* 1978, 252). The excavation at Site L produced a single crinoid ring, possibly used as a disc bead in association with cremated bone within the main chamber. The excavator believed that these items had previously been disturbed and were not in their primary location. The final satellite tomb, Site Z, was initially believed to be too disturbed to produce good quality results; however, much of the original material was found to still be present, albeit in a very disturbed state. Three Neolithic clay beads recovered from Site Z were found in a primary position in the tomb (i.e. the basin and immediately north of the basin) in association with human bone (*ibid.*, 291).

The reports provided for Newgrange and the satellite tombs provided a great deal of information regarding the physical traits of the bead and pendant assemblage; however, there is little discussion of their possible role in association with the tombs. The majority of the artefacts were considered characteristic of passage tomb assemblages and their function within the tomb context was not expanded on further;

“all three sites produced some of the characteristic objects known from other Irish passage-graves- hammer pendants, barrel-shaped beads, chalk ‘marbles’ and bone pins” (O’Kelly *et al.* 1978, 342).

A similarly ambitious campaign of excavations was conducted at Carrowmore, Co. Sligo by a Swedish archaeological team in the 1970’s and 1980’s (Burenhult 1980). Despite the disturbed nature of the monuments, and previous excavations by Walker and Wood-Martin, many tombs produced a large quantity of artefacts spanning several time periods, including three stone beads from Carrowmore 4 (I.D. 190-191) and 7. The exact spatial location within the chamber, the dimensions of each bead, information on the perforation, and coloured photographs of the beads were provided in these published reports (*ibid.*, 70). However, recent critical

analysis of the stratigraphical information from the excavation reports for Carrowmore established that much of information available did not correspond with the information provided in the interim technical reports submitted to the National Monument Service, (Bergh and Hensey 2013, 344). Burenhult's interpretations of the sites were heavily criticised (Bergh 1995, Bergh and Hensey 2013). Therefore, the details related to context and dates of artefacts including beads must be treated with caution.

Additionally, a passage tomb in Magheracar, Co. Donegal, deemed to be under threat as a result of its proximity to a cliff edge, was excavated in 1986 by Eamonn Cody of the National Monuments branch of the Office of Public Works (Cody 1987, 15). The tomb had previously been excavated according to Wood-Martin (1888) '*many years ago*' when a cinerary urn and some human bone were discovered. The 1986 investigation produced a variety of diagnostic passage tomb grave-goods including lithics, pottery, a piece of decorated bone, a miniature stone axe-head and three small fragments of a stone bead (*ibid.*, 15). The description of the bead is limited to the fragments available, with no measurements or confirmed geology provided.

[2.7 Brand New Beadgame](#)

The 1990's in Ireland was characterized by the Celtic Tiger, a meteoric rise in investment in Ireland by multinational corporations, resulting in a period of vast economic growth. The level of development in the country required improved infrastructure, additional housing, and improved services. This caused a boom in the construction industry providing a catalyst for an unprecedented level of archaeological excavation. One result of this work was the emergence of a greater number of Neolithic sites and site types that required exploration. It was no longer usual to excavate passage tombs as a matter of academic research; instead they were investigated as a part of rescue excavations.

In 1996, extensive excavations were undertaken in preparation for the construction of the new N22 road at a passage tomb-type monument at Ballycarty, Co. Kerry. Originally perceived as an enclosure, investigation revealed a possibly collapsed multi-phase passage tomb as an element of a wider Neolithic landscape (Connolly 1999, 9), although this interpretation is widely disputed. The multiphase nature of Ballycarty means that the site is complex, made worse by disturbance, and so it may have been subject to misinterpretation. However, its Neolithic date and basic layout calls for inclusion in this repertoire. The finds from the excavation were extensive including diagnostic Neolithic artefacts as well as a host of later objects. The tomb produced a stone pendant (I.D. 9) (Fig. 2.10) and an antler disc bead that appeared to belong to a secondary phase of Neolithic activity within the chamber and passage (*ibid.*, 16). Connolly extrapolated that due to the disturbed nature of the Ballycarty site, many of the finds were recovered *ex situ*. However, he did note that they are most likely the sum total of the grave goods originally interred (Connolly 1999, 62). It is interesting to note that the excavator believes that the beads and cremated remains with which they are associated belong to a secondary phase of Neolithic activity, which may be in line with work recently carried out by Hensey and Bergh (2013). Connolly's discussion takes a pragmatic and empirical view, with little debate on the interpretation of the ritual actions and burial rites from the site (Connolly 1999, 58).



Figure 2.10: The limestone pendant from Ballycarty passage tomb, Co. Kerry (after Connolly 1999, 25).

As evidenced by the systematic study of antler and bone pins from passage tombs by Bergh and Hensey (2013) and the dating of food vessels and urns by Brindley (2007) the processing and revaluation of older artefact assemblages that have not been addressed in a comprehensive manner has the potential to afford new insights into the complex social and ritual aspects of passage tombs. Between 1899 and 1902 the British Israel Association of London conducted excavations at the Hill of Tara in search of the Ark of the Covenant, causing considerable destruction (Carew 2003). The prominent passage tomb on the hill, identified by George Petrie as the Mound of the Hostages, escaped harm and was subsequently excavated over a several seasons between 1955 and 1959 by Séan P. Ó'Riordáin and subsequently by Ruaidhrí De Valera (O'Sullivan 2005, 9).

O'Sullivan's (2005) publication amalgamated the historical excavations carried out at the Mound of the Hostages in one volume, including an exceptional quality in the consideration of the bead and pendant material (I.D. 35-99). It includes a robust catalogue of 22 stone and bone pendants, 38 stone and bone beads, and over 200 bone spacers. The constitutes the largest Neolithic bead assemblage recorded from any passage tomb in Ireland, and about a third of the entire Irish

collection (*ibid.*, 125). Entries include a description of each bead, dimensions, and details on context, associated material, and detailed sketches (Fig. 2.11). Anomalies, such as evidence of wear or heat exposure, are also highlighted. As a result of the time lapse between the excavation of the site and the publication of the material, there are inevitable gaps in information. A number of the artefacts are now reported as missing, and difficulties in identifying spatial locations for some artefacts is clear throughout the report. Furthermore, the photographic images provided do not specify the specific beads (*ibid.*, 20). Despite these drawbacks, this information is the paragon of Irish Neolithic stone bead and pendant catalogues to date.

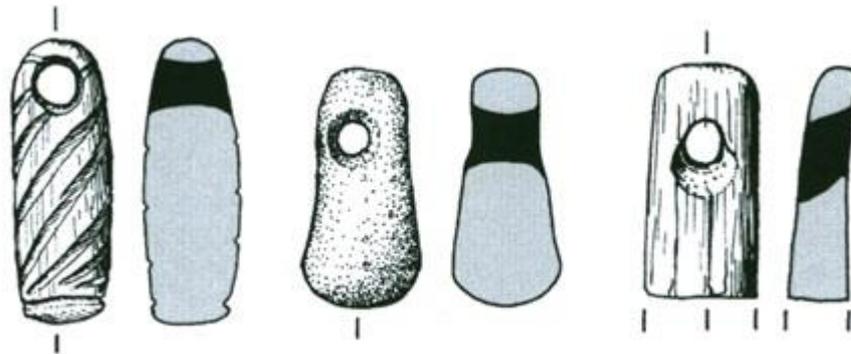


Figure 2.11: Example of images from the Mound of the Hostages catalogue (after O'Sullivan 2005, 149).

The Mound of the Hostages catalogue is strengthened by a petrographic analysis of the beads by Dr. Stephen Mandal which addresses questions regarding the geology of the artefacts including likely sources for the primary material, and evidence of burning (O'Sullivan 2005, 302). The high degree of information available from the report allows O'Sullivan to make significant observations regarding the role of beads and pendants in the Neolithic passage tomb tradition:

"This suggests that the accompanying artefacts may not have been as haphazard as casual examination of unsealed collections may indicate. The differential distribution of various artefact types may itself be significant and may even have been intended to convey a ritual message" (O'Sullivan 2005, 237).

The Mound of the Hostages site included three sealed cists on the exterior of the tomb which produced bead and pendant assemblages varying in quantity and material. The differences inherent in these individual assemblages on the same site lead to speculation that these differences in relation to ritual deposition. O'Sullivan implied that the long-held view that these artefacts are often shaped as miniatures of other symbolically significant artefacts, such as axes and pestle-hammers, is reinforced by this evidence of selective deposition (O'Sullivan 2005, 237). He also used this opportunity to speculate on whether variances in spacer morphology, such as length and thickness, may be representative of particular sex or age groups.

O'Sullivan's additional research on the stone bead and pendant assemblage from the Mound of the Hostages adopted an interpretive approach, exploring the materiality of stone in the Neolithic (O'Sullivan 2009, 26). He considered the importance of stone in the Neolithic mind-set as evidenced by megalithic construction and the use of stone in additional ritual contexts such as burnt stone in pits (*ibid.*, 27-29). O'Sullivan focused on the use of stone as a representational medium, which imbued pendants and beads with latent meaning rendering them symbolic conduits. For example, there appeared to be a high proportion of local stone used for beads, in contrast to the exotic material used to manufacture the pendants (*ibid.*, 27). Also, each of the cists produced material which differed significantly in form, colour, material and decoration. This interpretative approach was a welcome and necessary step towards informing our narrative of the role of stone beads and pendants in passage tomb ritual.

In 2011 Alison Sheridan recognised that two of the beads recovered at Knowth are miniatures of Scottish carved stone balls (I.D. 132-133) (Fig. 2.12). She stressed the significance of the beads as a connection between Ireland and Scotland in the Neolithic. She also examined the concept of miniaturisation in Irish passage tomb artefacts, particularly beads, and reiterated Gogan's original theory that beads and

pendants from Irish passage tombs represent socially valorised objects including maceheads, axeheads and carved stone balls (Sheridan 2014, 308).



Figure 2.12: Images of beads from Knowth (after Sheridan 2014, 305-306).

In 2017, Eogan and Cleary published a revised volume of excavated material from Knowth 1. This publication illustrates the exhaustive level of research and meticulous attention to detail that has been afforded to the Knowth assemblage in the decades since its excavation. The artefact catalogue considers each artefact type separately, providing a comprehensive consideration of each individual artefact including good quality photos and sketches, measurements, detailed descriptions, context and associated artefacts (413-453). Interestingly the bead and pendant artefacts are segregated based on raw material including; clay pendants, stone pendants, clay beads, stone beads, antler beads and bone beads (*ibid.*). The catalogue also features the results of XRF analysis on several of the stone beads (see Appendix A).

The discussion section is also separated into sections based on artefact type, including individual bead and pendant sections (456-459). The discussion highlights some of the key considerations in the discussion of Neolithic beads and pendants including the mimicking of larger ritually significant artefacts, the variety in nomenclature between sites, the significance of raw material and evidence of heat stress.

Newly excavated sites with stone bead/pendant assemblages include the complex at Knockroe, Co. Kilkenny. The monument was excavated between 1990 and 1995, with investigations continuing in 2010 as a result of the conservation process. The investigations exposed two multi-period passage tombs incorporated into a single construction (O'Sullivan 1987, 1993, 1995, 1996, 2004, 2010, 2011, 2012). The published reports provide details on the beads recovered from various contexts including excavation year, context and find number, the material (i.e. stone or bone), and a very brief description of the item (O' Sullivan 2010, 26). The artefact catalogue is not supplemented by any images. Eighteen stone bead and pendant artefacts have been recovered to date, and further material is currently being uncovered as part of post-excavation analysis (I.D. 10-28). In addition, an in-depth publication of the Knockroe including a catalogue focused exclusively on the stone bead and pendant material is forthcoming (O'Sullivan pers. com).

In summary, there has not been any dedicated study of stone beads or pendants from passage tomb contexts. This is in deference to the close examination that some artefacts such as pottery and axes have received (Cooney 2002, Cooney *et al.* 1998, Case 1961, Grogan and Roche 2010, Herity 1982, Mandal *et al.* 2007, Roche 2008, Sheridan 1995, Sheridan *et al.* 1992). The core texts that have examined Neolithic Ireland (Bradley 2007, Cooney 2000, Grogan and Cooney 1994, Herity 1974, Waddell 1998) have highlighted the specialised and distinctive nature of the stone bead/pendant assemblages recovered from passage tombs concluding significant differences in bead and pendant artefacts including morphology, material and degree of polish. However, they have provided little discourse regarding the importance of incorporating beads into the wider understanding of Neolithic ritual activities, despite the relationship between stone beads and Neolithic ritual contexts. As a result, there remains an absence of knowledge regarding their perceived value in understanding social structure, traditions and belief systems. As summarised by Waddell: *'Objects found with the bones, presumably grave-goods placed with the remains, are typical of Irish*

passage tombs and include stone beads and pendants, fragments of bone pins and some small balls of polished stone.' (1998, 61).

[2.8 Beads in Neolithic Ireland \(non-passage tomb contexts\)](#)

Over the last number of decades, in development-led archaeology stone beads have constituted an important element of the material assemblage from pits, enclosures and settlement sites, although they have stimulated limited discussion. The earliest excavation of a Neolithic settlement at Lough Gur, Co. Limerick between 1940 and 1954, produced a large assemblage of 160 stone beads and pendants which featured heavily in the published excavation report, including information regarding their physical traits and measurements, context, provenance, and detailed diagrams of all artefacts (Grogan and Eogan 1987). There were also photographs provided of some of the composite pieces in context (Fig. 2.13). Two typologies were identified within the stone beads: simple disc beads and anthropomorphic beads which feature a curved outline (*ibid.*, 475). It was noted in the report that the beads appear to have had a ritual significance (*ibid.*, 471). Two composite necklaces of stone beads and pendants accompanied inhumations beneath the floors of the building at Circle K at Lough Gur and 'exact counterparts' were unearthed as isolated finds and groups on several house sites including Circle L and sites D and 10 (*ibid.*, 472).

Many later development-led reports specify deliberate deposition of stone beads and pendants in postholes, slot trenches and pits associated with settlement sites, but do not address the possible significance of this action. In instances where comprehensive analysis of settlement sites is presented, these artefacts still experience limited consideration. Cleary and Kelleher's publication of a Neolithic enclosure and settlement site at Tullahedy, Co. Tipperary devoted an entire chapter to the discussion of a siltstone bead and a schist pendant recovered from a ditch, and the post occupation layer of the settlement site respectively. This included petrographic description of the artefacts and a comparative analysis with material from a variety of settlement sites (Cleary and Unitt 2011, 402-405).

However, discussion of these artefacts does not address the possibility of their deliberate deposition or the implications of their deposition in this context.



Figure 2.13 Beads in situ at Lough Gur Circle L (after Grogan and Eogan 1987, 390).

In contrast, Smyth suggests that the material placed within these structured deposits are likely specially selected, symbolically charged items that are related to special house-creation or abandonment rituals, highlighting the significance of stone beads in ritual circumstances (2014, 59). Work carried out by Smyth (2014, 58) has demonstrated the deliberate or purposeful deposition of stone beads and pendants in the trenches, postholes and pits associated with at least 12 Neolithic settlement sites including Cloghers, Co. Kerry (Kiely 2003), Corbally, Co. Kildare (Purcell 2002), and Monanny, Co. Monaghan (Walsh 2006). This premeditated deposition of is differentiated by several factors including the size of the cache and its position within a feature (Smyth 2014, 58).

Stone beads also appear as a significant element of deposition in Neolithic enclosures, and pits (*ibid.*, 104). Smyth (2009, 14) recognised that pits represent an important element of the Neolithic, featuring many formal deposits of material. A large pit at the Iron Age hilltop site at Dún Ailinne, Co. Kildare was found to contain a Middle Neolithic bipartite bowl and a small stone disc bead (Wailes 1970). The Middle Neolithic pit at Tullywiggan Co. Tyrone (O'Neill 2013) also produced a great deal of Neolithic pottery and a perforated stone pendant. A Middle Neolithic pit at Knockaulin Hill, Co. Louth contained a Linkardstown-type vessel and a single stone bead (Johnston & Wailes 2007). In 2006 Ó'Drisceoil published an article concerning a pit dated to the Early Neolithic which contained nine serpentine beads carefully placed on a shelf with western Neolithic pottery, chips of flint and charred wheat grains (Fig. 2.14). The article engaged with the possibility that the beads held meaning as special items deposited a significant place within the landscape (Ó'Drisceoil 2006, 153).



Figure 2.14 Beads from Carrickmines Great, Co. Dublin (after Ó'Drisceoil 2006, 148).

At Haggardstown, Co. Louth a number of charcoal rich pits located within the house were found to contain a large amount of pottery sherds, burnt bone, flint waste, small stone beads and a flint blade possibly used as a pendant (McLoughlin 2010, 21-22). It was recognised that the inclusion of a flint 'pendant' and stone beads in a ritual context may be of some significance and the implication of the flint pendant is the subject of much speculation throughout the report.

In 2011, this writer produced an undergraduate BSc thesis entitled '*Beads and Pendants from Neolithic Ireland*' which highlighted the prevalence of beads and pendants in Neolithic contexts in Ireland and demonstrated the social and ritual significance of beads and pendants in pre-industrial societies. The conclusions highlighted the key functional and ritual role that beads play in traditional societies and suggested the need for detailed analytical and theoretical research into Irish Neolithic beads the future.

[2.9 Beads of other materials from multi-period sites](#)

The study of beads from other periods of Irish archaeology has advanced considerably in recent years, contrasting with the work carried out on Neolithic material. Important contributions have been made in Bronze Age, Viking and Medieval bead analyses, establishing a variety of methodologies and research paradigms addressing classification, provenance, dating, symbolic properties and social significance.

An undergraduate thesis carried out in 2011 utilised innovative analytical techniques to ascertain the possibility of identifying the geological provenance of archaeological amber beads and explored the role of amber beads in prehistoric Ireland (Moloney 2011). Three analytical techniques were comparatively assessed; fourier-transform infrared spectroscopy (FTIR), diffuse reflectance infrared fourier-transform spectroscopy (DRIFT) and attenuated total reflectance-fourier transform infrared spectroscopy (ATR-FTIR/ATR). Seven non-archaeological amber samples were evaluated including five of known origin and two of an unknown origin. ATR was determined to be the most suitable resulting in minimal or no damage to the samples. This analysis determined that the point of origin of the raw material could be accurately determined from a blind sample, which would allow archaeologists to determine the source of Irish Bronze Age amber. Moloney also explored the lack of study of Bronze Age amber in Ireland, drawing conclusions from previous excavations, interpretations and analyses to

interpret the significance of amber in Bronze Age society. She discussed the current limitations of amber research in Ireland, highlighting the need for re-evaluation of “Bronze Age” amber contexts and dates, and the compilation of a comprehensive catalogue of all amber artefacts (beads and a dagger pommel).

A Bronze Age necklace of stone beads and a pendant recovered from the Bronze Age settlement at Caltragh, Co. Sligo, provided evidence of fragmentation and curation practices, and links with Bronze Age Britain. Analysis of two individual caches of stone beads and a pendant from adjacent graves containing cremated individuals confirmed that the artefacts were manufactured from the same material, using the same method, and had been subjected to the same period of prolonged burning on the funeral pyre prior to interment (Danaher *et al.* 2013, 71). Subsequently, reconstruction work identified that the beads all belonged to the same composite piece before four of the beads were selected for removal and were then reburied with an individual in an adjacent grave, decades later (*ibid.*, 71). The primary grave contained a woman aged 40-50 years old, and the secondary grave contained an unsexed individual, 40 to 50 years old (*ibid.*, 72). The authors suggested that the beads may have been removed from the primary grave as a token or heirloom of the deceased by a family member, as a means of linking the individuals together and strengthening kinship ties (*ibid.*, 72). Additionally, the necklace emulated high status Bronze Age spacer plate necklaces, but in local materials:

“spacer plate necklaces consisting of fusiform beads and a triangular fastener. The owner may have been unable to secure the precious materials locally, instead mimicking this style with local materials” (Danaher *et al.* 2013, 74).

The mimicking of the spacer plate necklace indicates knowledge of contemporary high-status jewellery employed in Britain during this period, suggesting links between Bronze Age Britain and Ireland.

Analysis of Viking Age glass beads carried out by Joanne O’Sullivan (2013) has significantly increased our understanding of personal and communal identity,

trade relationships and interpersonal contact in Viking Age Ireland. Previous studies had focused on assemblages from individual sites, with limited comparative examination between sites, and a poor understanding of diagnostic Scandinavian artefacts versus local reproductions. The research identified 402 of the 3000 'Viking' glass beads in Ireland are of Scandinavian origin and resulted in the first comprehensive database of the material. This analysis revealed evidence of diagnostically Scandinavian material in areas that had not produced prior evidence of Viking activity. Utilising the database in conjunction with comparative analysis of glass beads from Scandinavia (especially Vestfold), Britain, Iceland, the Faroe Islands and L'Anse aux Meadows, O'Sullivan presented a summary of information in relation to the context and distribution of Viking beads in Ireland. She concluded that the Scandinavian beads in Ireland represent the initial phase of Viking activity, and was likely a means of linking these early settlers to their homeland by visually articulating self and group identity. This contrasts with the material from Britain which suggests the tradition of Scandinavian bead use continued long after it was discarded in Ireland. O' Sullivan's continued work on Viking glass beads (2015a, 2015b) has challenged prior gendered notions of Viking beads, and suggests bead caches, such as necklaces, represent a portable accumulation of wealth in addition to their aesthetic, personal and social value (O'Sullivan 2015a, 82, 2015b, 182).

Recent research carried out by Mags Mannion (2015a, 2015b) produced the first classification system of glass beads from Early Medieval Ireland. The eighteen-fold classification system is based on an assemblage of 419 beads from eight domestic and ecclesiastical sites (Mannion 2015a, 98). The assemblages were visually examined and recorded in a database which included standardised images of the beads, and information regarding nomenclature, colour, context information and dates (*ibid.*, 104-138). Additional issues of standardisation within the study of glass beads in Ireland were addressed by establishing a standardised research method and terminology and providing a means of recognising the possible contexts and dates of stray finds through comparison with the classification system (*ibid.*). Due

to contextual issues and absent artefacts, Mannion was limited in her ability to postulate theories on the symbolism and social significance of glass beads in the Early Medieval period (Mannion 2015b, 201-10). However, she explored the relationship between beads and society in prehistory and history.

These research programmes outlined above show the dearth of research that has been afforded to Neolithic beads in Ireland in comparison to other time periods and demonstrates possible avenues for future research.

[2.10 All the rage in Europe](#)

Outside of Ireland, the role of stone bead/pendant artefacts from Neolithic and megalithic contexts has been addressed through a number of analytical and theoretical research programmes in different world regions. In the Near East, excavators provide a more progressive approach to stone bead studies and the majority of reports attempt to identify and extract the significance of stone beads in every context. This often involves experimental studies and the examination of operational sequences in relation to social identity, technological changes and trade.

Research by Wright and Garrard (2003) focused on the social significance of bead making in Neolithic Jordan by examining stone bead and pendant artefacts from four sites in the Aqraq region. By identifying production contexts, manufacturing marks and complete bead making tool kits and assemblages they determined operational sequences in production from quarrying to polishing (Wright *et. al* 2008). Wright (2010) also identified stone bead manufacturing processes at the Neolithic site of Çatalhöyük, Turkey. Her study research involved the implementation of a new typology, and the production of a detailed bead database. Her findings suggest that bead production was a prestige activity which occurred at a household level from local raw materials and was vital in defining and differentiating social identity. Bains (2012) expanded understanding of the role of beads in daily, ritual and social life at Çatalhöyük by examining and reconstructing the manufacturing processes using experimental work and use-

wear analysis and conducting contextual analyses of bead assemblages from production sites, domestic areas, and bead and ritual contexts. Her findings indicate that stone beads performed important functions in Neolithic Çatalhöyük including the communication of identity and symbolism, the forging of relationships, and the marking of significant transitional periods. Bar-Yosef Mayer has examined stone bead and pendant material from many sites in the Near East using multi-disciplinary approaches that focus on typology, manufacture, provenance studies, and theoretical aspects including the significance of particular meanings and colour (Bar-Yosef Mayer 2013, Bar-Yosef Mayer and Porat 2008, 2010, Bar Yosef Mayer *et al.* 2004, 2013).

Bead studies in Central and Southern Asia have also centred around the study of bead-making technologies demonstrating that these crafts can provide social and economic information in various areas, including Harappa, Mehgarh and Mohenjo-daro in Pakistan, and Afghanistan (Barthelmy de Saizieu and Bouquillon 1994, Barthelmy de Saizieu and Casanova 1991, Kenoyer 1991, 1994, 1997, 2003a, Kenoyer *et al.* 1991, Vidale 1989, 1995). Researchers have used microscopic study of artefacts in conjunction with ethnographic evidence of bead making in South Asia to form sequences of production in each region. Investigation of these processes has revealed information on craft specialisation and social stratification.

Closer to home, Neolithic stone bead and pendant studies in Europe have leaped forward in the past 30 years, with projects focusing on standardising classifications, identifying provenance of raw materials, and documenting changed in social and symbolic codes evident in bead and pendant assemblages. Skeates (1995) examined the life history of stone axe-pendants in the central Mediterranean region by investigating the biography of the artefacts and then considered the changing associations and roles of these artefacts within historical, social and political contexts (Skeates 1995, 288). He suggested that axe-pendants were perforated and utilised in social, spiritual and personal ways and that these axe pendants were manufactured from material hewn from axes (*ibid.*, 290). It

was concluded that perforated axe pendants were the end product of a long history of use as axes and symbolic objects. Studies in Malta recognised the key role that greenstone pendants may have had in the creation and maintenance of social relations within the archipelago through the practice of fragmentation. These axe-pendants were generally manufactured of a raw material that has its origin outside the Maltese archipelago and are found in a limited number of megalithic monuments, including temples (12 examples) and hypogea (254 examples) (Barrowclough 2007, 49). The axe-pendants were studied on the basis of patterns of association discerned by their exact find context. The pendants were recovered in caches in and around an area in the Tarxien temple known as the Oracle room, and also were primary artefacts with burials throughout hypogea (*ibid.*, 52). Many of the pendants retained evidence of division from larger examples (*ibid.*, 53) (Fig. 2.15). Barrowclough proposed a model whereby the Neolithic temple patrons obtained greenstone pendants at the Tarxien temple and utilised the pendants as a mechanism for the creation of relationships with other members through fragmentation. The object was then worn until death and included in the presentation of the body prior to internment in the hypogea (*ibid.*, 52).



Figure 2.15: Greenstone pendants displaying various stages in the fragmentation process (after Barrowclough 2007, 52).

Amber beads are among the most frequent finds from Neolithic passage tombs in Scandinavia (Axelsson *et al.* 2015, 662). Studies by Axelsson and Strinnholm

(2001, 2003) catalogued the complete collection of amber beads and pendants from Swedish megaliths and constructed a classification system dividing them into ten groups and sub-groups based on their form. Using this system as an analytical tool, differences in shape and distribution were noted at regional and local levels. Principally, the shapes were interpreted as miniature representations of larger artefacts (Axelsson and Strinnholm 2015, 664). This miniaturisation is also reflected in the pendants recovered from Irish passage tombs as explored by Gogan (1930) and Sheridan (2014). They concluded that the differences in form and distribution in the Scandinavian beads were not in deference to availability or ability, but were more likely connected to personal identities of lineage groups (Axelsson and Strinnholm 2015, 666). When taken at a macro level, the findings indicated that about half the material took the form of battle axes and clubs.

Two impressive research projects were undertaken simultaneously from 1999 to 2013 in France and Spain in efforts to understand the provenance and circulation of variscite beads recovered from Neolithic sites in Western Europe, including passage tombs from Brittany (Querré *et al.* 2014, 149). Particle induced x-ray emission (PIXE) analyses were carried out on 851 beads from 39 archaeological sites and nearly a thousand geological samples from variscite deposits (*ibid.*, 150). Interestingly, the analyses concluded that the variscite utilised for the beads and pendants in Brittany was from the Encinasola prehistoric mine located in South Spain, more than 1000 km away, and not from the Pannecé deposit located 100km from the site as suspected (*ibid.*, 154).

In 2015 an ambitious project sought to determine whether changes in cultural geography during the Mesolithic-Neolithic transition across Europe could be identified by changes in personal ornamentation, particularly bead types (Rigaud *et al.* 2015). Similar projects had identified ethno-linguistic diversity in Europe in the Palaeolithic (Vanhaeran and d'Errico 2006) and the Mesolithic (Newell *et al.* 1990). The project involved a series of spatial and multivariate analyses utilising 224 bead types of various materials including stone, bone and shell, recovered

from 212 Mesolithic and 222 early Neolithic sites. The beads were all from good context with dateable material (*ibid.*, 2). The results supported current interpretations that the Neolithisation of Central and Southern Europe involved a massive upheaval in of symbolic and societal systems, while in Northern Europe, Mesolithic symbolism and social identity persisted (*ibid.*, 3).

It seems that other world regions have recognised the important multifaceted role that stone beads and pendants played in Neolithic society and, as a result, have received an appropriate amount of attention in research. On-going experimental and analytical techniques and progressive theoretical modelling demonstrate Neolithic beads act as a medium for understanding technological developments, human relationships and cultural worldviews in these regions. In contrast, there has been no dedicated study of Irish Neolithic stone bead and pendant material to date, and they receive little discourse in Neolithic literature. Irish Neolithic studies could benefit from the adoption of a similar mind-set and the adoption of a similar set of techniques in Neolithic stone bead studies as is found in Europe.

[2.11 Conclusion](#)

There are many issues inherent in the study of the bead assemblages that had been recovered from Irish passage tombs. The ministrations of antiquarians, collectors and previous explorers have resulted in the loss of a great deal of material from these monuments prior to the nineteenth century. The majority of the beads in early collections had no information regarding context, left little trace in the published record, and were gradually dispersed among various public and private institutions during auctions and donations. Lack of scientific techniques during the acquisition of these artefacts has resulted in irrecoverable loss of artefacts from passage tombs throughout the country. Although it is unlikely that we will ever ascertain the true sum of beads and pendants attributed to passage tombs, it is important to address the surviving assemblages in order to initiate some interpretation of the role of these artefacts in the Neolithic life cycle and

their function in passage tomb contexts. The remaining artefacts have not benefitted from the dedicated study afforded to other passage tomb artefacts such as stone axes and pottery. In contrast, beads and pendants have received little attention in the general Neolithic literature. It has become evident that beads permeated all known areas of Neolithic activity from settlement and enclosure sites to Neolithic pits, and the examination of this material can provide us with a greater understanding of social and ritual behaviour in Neolithic society.

Despite the significant issues and gaps in the surviving bead and pendant assemblage, the published literature provides a great springboard for this investigation. Antiquarian interest in megaliths stimulated publication of the majority of the assemblages from passage tombs, with details of the artefacts often accompanied by detailed illustrations. Antiquarian excavation reports often included details on the possible geology and provenance of the stones, and occasionally provided comparative analysis with other assemblages available at the time. Furthermore, significant traits such as exposure to heat and miniaturisation of larger artefacts were noted.

Changes in the approach to Neolithic bead studies in Europe and elsewhere, and beads from other time periods in Ireland, have also provided a key foundation for the study of beads from Irish passage tombs. These investigations have emphasised the evidence that can be ascertained through the completion of comparative databases and scientific analyses as well as post-processual models of evaluation. By applying similar practices in this research, we can increase our understanding of the complex ritual and social aspects associated with Irish passage tomb beads.

Chapter 3: The Sites

The following chapter introduces the 22 passage tombs from across eight counties that have produced Neolithic stone bead and/or pendant assemblages. A four-month period of desk-based research identified these monuments from the wider corpus of Irish passage tombs. The passage tomb sites are split into classes broadly based on the three-fold categorisation system established by Hensey (2015) which incorporates factors such as date, location, morphology, and additional features. These classes are summarised in the sections below accompanied by a list of sites in this study that fit the class. Appendix C provides an expanded discussion of these sites. It is imperative to remember that passage tomb monuments have long and involved biographies, and their structure and use may have been readapted or modified in the past. Therefore, a single monument can span several classes through adaption, reconstruction and reuse. The use of this tripartite system allows us to observe patterns in the stone bead/pendant assemblages that occurred concurrently with the progression of passage tomb design. This approach contextualises the bead and pendant assemblages in their cultural environment, encompassing evidence of changes in symbolic and social codes which may be reflected in the material.

[3.1 Type 1 sites](#)

These appear to be the earliest monuments in the passage tomb series (3750-3600BC) consisting of 45 sites, or 17% of all passage tombs in Ireland (Hensey 2015, 26). Although they make up a relatively small percentage, they are the smallest in size and it is likely that many of them have been disproportionately destroyed or subsumed into larger constructions over time (*ibid.*, 27). Type 1 are concentrated around the coast in the north-west and north-east of Ireland. Almost all Type 1 passage tombs are located in lowland areas in close proximity to the coast or a river (*ibid.*, 28). The construction consists of a circle of vertically set boulders and an internal tomb with a rudimentary passage which does not extend to the edge of the circle (Hensey 2015, 25). Originally, they may not have had a

covering cairn. Excavations have revealed that ritual activities had taken place between the internal monument and boulder circle (*ibid.*, 20). Accessibility to the internal monument was limited due to size and the closed nature of the monument; however, objects may have been inserted throughout the monument's history (*ibid.*, 19). To date, there has been no megalithic art or astronomical alignments recorded at Type 1 passage tombs. Three Type 1 passage tombs in Ireland have produced stone beads and/or pendants (Table 1).

County	Townland	Site	RMP
Donegal	Magheracar	Magheracar	DG106-011----
Sligo	Carrowmore (Carbury By.)	Carrowmore 3	SL014-209004-
Sligo	Carrowmore (Carbury By.)	Carrowmore 4	SL014-209049-

Table 1: Type 1 sites included in the study (*after author*).

[3.2 Type 2 sites](#)

The most typical monument type of the Irish passage tomb series, Type 2, were constructed sometime after 3600/3500BC and generally continuously used until the end of the passage tomb tradition *circa* 2900BC (Hensey 2015, 33). Despite representing 75% (195) of all passage tombs in Ireland, they are the least explored of the three classes (*ibid.*, 30). Type 2 monuments are predominantly found in the northern half of the country, although there are some southern examples. They are generally located in areas removed from wider society such as isolated landscapes and hilltops (*ibid.*, 32). During this phase, passage tombs began to go through a transformative process, as foci for ritual activity within the monument. Many morphological developments occurred including the introduction of corbelled roofs over large, many-recessed chambers, covered by large cairns (between 15m and 40m) and kerbed by horizontally laid stones. The internal structure allowed continued deposition of both artefacts and human remains, and a central chamber allowed internal ritual activities (Hensey 2015, 36-37). A diverse set of new design features were adopted at this stage. Coloured stone began to be selectively incorporated into Type 2 structures, particularly around the

entrance areas. Astronomical alignments became a consideration in the orientation of the passage. Megalithic artwork made its first appearance on the construction stones of passage tombs, occurring internally at Type 2 monuments and not externally as seen at Type 3 monuments. A focus on right-handedness began to manifest itself in increased size and the positioning of the megalithic artwork in the internal chambers and recesses (Hensey 2015, Chapter 3). Thirteen Type 2 passage tombs have produced stone beads and pendants (Table 2).

County	Townland	Site	RMP
Fermanagh	Moylehide	Belmore	FER210:050
Kerry	Ballycarty	Ballycarty	KE038-074----
Leitrim	Fenagh Beg	Fenagh Beg	LE025-093001-
Meath	Castleboy (Skreen By., Tara Par.)	The Mound of the Hostages	ME031-033007
Meath	Corstown (Fore By.,)	Loughcrew R2	ME015-012007-
Meath	Newtown (Fore By., Moylagh ED)	Loughcrew H	ME015-003003-
Meath	Newtown (Fore By., Moylagh ED)	Loughcrew I	ME015-003006-
Meath	Patrickstown	Loughcrew X1	ME009-071001-
Meath	Patrickstown	Loughcrew X2	ME009-017002-
Sligo	Carnaweeleen	Carrowkeel R	SL040-006001
Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel F	SL040-096----
Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	SL040-089----
Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	SL040-093----
Waterford	Harristown	Harristown	WA027-007----

Table 2: Type 2 sites included in the study (*after author*).

3.3 Type 3 sites

Type 3 passage tombs mark the pinnacle of passage tomb construction, erected between 3200 and 3000BC (Hensey 2015, 96). It is possible that as few as 15 passage tomb monuments fit into this category (*ibid.*, 105), however, they have received considerable attention in prehistoric and historic times (Waddell 2005, 8). An increase in the complexity and scale of architectural features, and the emergence of external features for public consumption, occurs during this stage (Hensey 2015, 96). Larger stones are used in the chamber construction, the passages were longer and the roofs higher. Cairns became exceptionally large with diameters of over 50m, and were often flat topped (*ibid.*, 96). There was further emphasis on the tomb exterior (particularly the entrance) including platforms and stone settings around the cairn exterior, a straightened façade and the use of quartz as an aesthetic material (*ibid.*, 96-98). Additionally, associations with processional route ways and linear monuments are noted during this phase. These new design features were conceived of with an audience in mind, suggesting a change in ritual action from internal secluded rituals to external rituals witnessed or engaged in by the public (Hensey 2015, 99). Megalithic art occurs on the kerbstones of Type 3 monuments. This external art is often larger and more complex than the internal art noted in Type 2 monuments (*ibid.*, 99). Increases in size, craftsmanship and display are reflected in passage tomb artefacts during this period. They appear larger, better quality and are manufactured from more exotic materials. In addition, prestige ritual equipment including stone basins, maceheads and a stone phallus have been recovered from Type 3 monuments (*ibid.*, 102). Five Type 3 passage tombs have produced stone bead and pendant assemblages (Table 3).

County	Townland	Site	RMP
Kilkenny	Knockroe (Kells By., Killamery ED)	Knockroe	KK034-019001-
Meath	Fourknocks	Fourknocks 1	ME033-028001-
Meath	Gormanstown	Knockingeng/Knocknagen	ME028-021----
Meath	Knowth	Knowth 1	ME019-030001-
Meath	Newgrange	Newgrange	ME019-045----

Table 3: Type 3 sites included in the study (*after author*).

Chapter 4: Gathering and Presenting the Results of Analysis

[4.1 Introduction](#)

In this chapter the results of the assessment of 192 stone beads, pendants and fragments from Neolithic horizons in 22 passage tombs are discussed in order to identify patterns that could develop our understanding of the role they played in Neolithic society. The following sections outline the methodology and equipment utilised to develop the catalogue of stone beads and pendants (provided in Appendices A and B) and examines patterns in aesthetic preferences, context, and use in the overall assemblage. The catalogue was compiled during a three-month period at the National Museum of Ireland (NMI) and University College Dublin (UCD) and enhanced by details from excavation reports following a three-month period of desk-based research. The artefacts were visually examined, classified and recorded according to typology, colour, raw material, size, evidence of heat exposure, wear and context. The procedures used to identify this information was adapted from methodologies employed in various bead studies identified during the literature review. The conclusion segment summarises the new data that was ascertained during this analysis.

[4.2 Identification numbers](#)

Each artefact was provided with an individual identification number for this study, in addition to the RMP identification number for the site and the National Museum of Ireland (NMI) artefact identification number. In instances where the NMI number was unavailable, the excavation find number is provided.

[4.3 Images and Contexts](#)

The images presented for each bead are taken from published accounts of the sites and supplemented by sketches from the author. The renderings are not to scale; however, they are relatively accurate and detailed dimensions are provided. Visual examinations and measurements were carried out in the National Museum of Ireland (NMI) and University College Dublin (UCD). The dimensions were

ascertained by measuring the maximum length, width, height and perforation width of each bead using 150mm/6inch LCD digital electronic vernier callipers. All numerical and descriptive information was amalgamated into an excel database. The spatial distribution of individual beads and pendants were identified using published and unpublished excavation reports. The context was then enhanced in Adobe photoshop to illustrate the area where the artefact was recovered. In some instances, this could not be definitively identified. Spatial analyses conducted by Guillaume Robin (2010) recognised a distribution pattern throughout artefact assemblages at some Irish passage tombs that were considered during this analysis. This pattern followed a principle of axial opposition, among the artefacts encountered throughout Irish and British passage tombs. This principle allies different locations within the tomb (left vs right, passage vs chamber), with objects of different shapes (pointed vs round), and composition (organic vs lithic) (Robin 2010, 407-410). Each assemblage was considered in relation to its position within the tomb, and the positioning of additional artefacts, in order to determine any clear distribution patterns.

[4.4 Typology](#)

Traditionally, beads and pendants have been classified based on their form in an effort to analyse typological variability. Typology addresses the specific physical characteristics of the artefact including proportions, overall geometric shape and cross-section (Bar-Yosef Mayer 2014, 129).

Although glass bead analyses are entrenched in detailed classification guides (DeCorse *et al.* 2003, Hopwood 2012, Kidd and Kidd 2012, Karklins 2012), the initial referential guide for stone beads and pendants, Beck's 'Classification and Nomenclature of Beads and Pendants,' (Beck 1928) remains the only established convention currently in use. This detailed structure contains 1,500 possible combinations of shapes and proportions, largely based on four length categories (disk, short, standard and long) in addition to the ratio of length versus diameter. This system does not incorporate additional attributes related to individual

stylistic behaviour and the physical restrictions of the raw material. The bespoke nature of the Neolithic manufacturing process would have resulted in idiosyncratic adaptations of singular design concepts. Many archaeologists have attempted to modify Beck's typology in order to address these issues, creating site-specific typologies featuring user-friendly categories to enhance simplicity and replication (e.g Baines 2012, Barthelemy de Saizieu 2003, Wright *et al.* 2008). However, Beck (1928) remains the only established referential system.

The initial studies of the assemblage in this project discovered that numerous beads and pendants merged characteristics from several of Beck's constructed typologies hindering neat classification. To reduce the number of potential combinations and allow the extraction of meaningful data, a simpler and more comprehensive system of classification was designed by this writer, better suited to facilitating the research objectives (i.e. identifying design preferences associated with passage tomb development through time and across regions). These 'descriptive classes' are based on dominant attributes that subsume numerous subclasses. There are nine bead classifications (Fig. 4.1) and seven pendant classifications (Fig. 4.2).

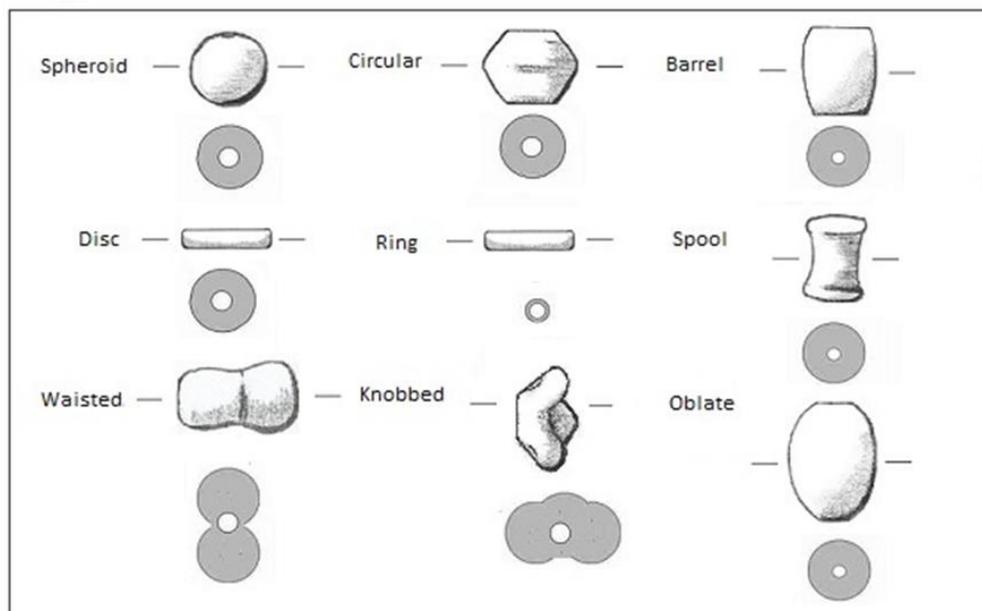


Figure 4.1: Classification system for Irish passage tomb stone beads (by author).

Throughout passage tomb literature there is no definitive consensus on the features that differentiate hammer, pestle and macehead pendants (Gogan 1930, Herity 1967, 1974, O’Sullivan 2005, Hensey 2014). Both hammer and pestle pendants are likely individual expressions of a single design concept, possibly as miniatures of maceheads. Therefore the term macehead pendant (when used in this study) encapsulates both pestle and hammer pendants. Although hammer and pestle pendants are likely artistic representations of a similar concept separate terms are useful for descriptive purposes. Hammer pendants refer to those typically narrower at the apex, with straight or slightly concave sides ending in a flat base. Many examples have a swelling at the base marked by an indented groove (e.g Belmore, Co. Fermanagh (Type 2), Mound of the Hostages, Co. Meath (Type 2), Fourknocks 1, Co. Meath (Type 1)). The hammer pendants that show distinctive flaring at the base, often accompanied by a ridge are referred to as pestle pendants.

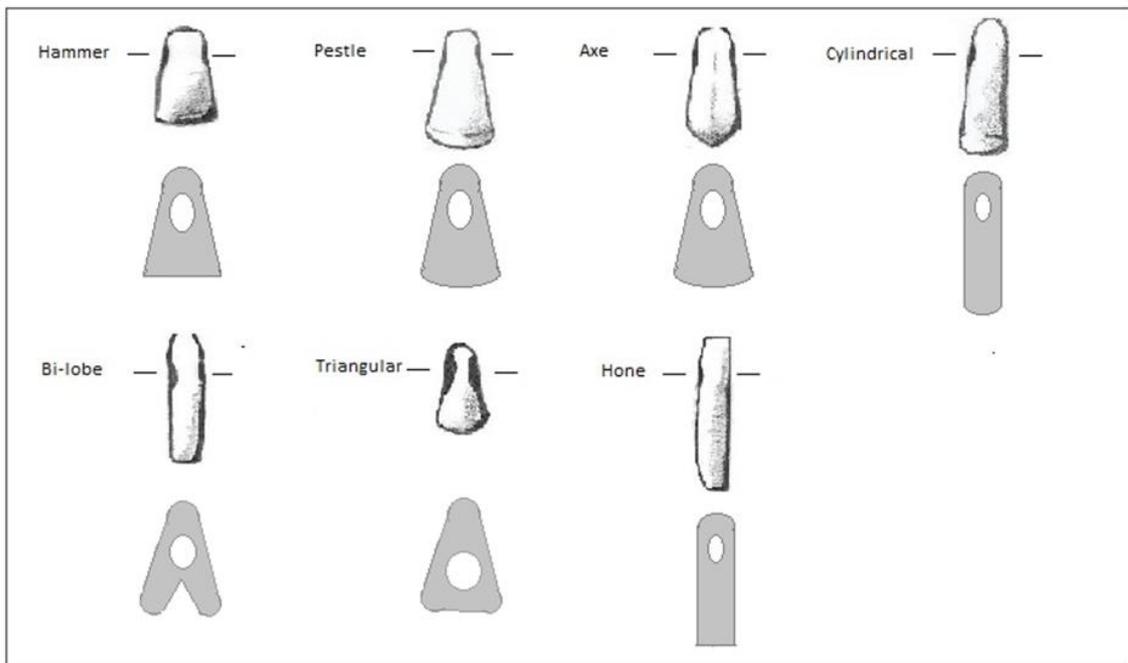


Figure 4.2: Classification system for Irish passage tomb stone pendants (by author).

Axe pendants are also common, differentiated by a tapered sloping at the base which creates a sharp edge in the center. Hammer and pestle pendants (those pendants that mimic larger maceheads, as discussed above) and axe pendants

demonstrate great variation both size (squatted and enlarged) and shape including ovoid (curved sides) or straight sides (Fig. 4.3).

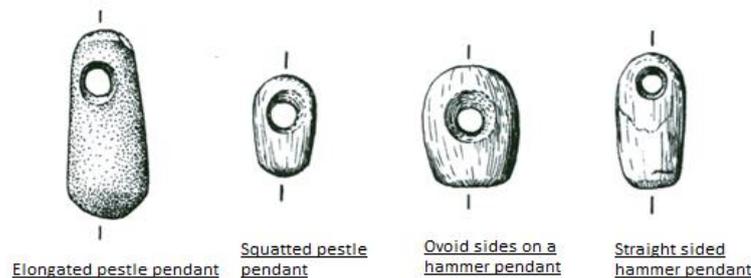


Figure 4.3: Examples of the variations in pestle and hammer pendants (by author; sketches from O'Sullivan 2005).

[4.5 Material](#)

A key component of the catalogue was the identification of the raw materials utilized in the manufacture of stone beads and pendants. This was the first time that a large scale petrographical investigation had been carried out on the assemblage. It was necessary in order to determine whether Neolithic people had specific preferences or restrictions in terms of raw material choice and use. Desirable aesthetic qualities may include specific colours, ability to be polished, lustre, texture, and naturally occurring patterns within the rock. Specific technical properties may have also proved more desirable as the rock's malleability, durability and hardness affect the entire process of bead production and use, from procurement to manufacture and subsequent use. In terms of practicality, a balance between hardness and durability is an ideal choice.

A useful method for comparing hardness of minerals is the use of Mohs scale. This scale was developed in 1812 and remains widely used for testing the hardness of materials (Kenoyer 2003a, 14, Winkler 2013, 31). Mohs scale is arbitrarily divided between ten minerals of varying hardness scaled 1 to 10, the hardness of a material is discerned by it's ability to scratch the material below it in the scale but not above (Goffer 2006, 87, Hertz *et al.* 1998, 197) (Fig. 4.4). For example, dolomite scratches calcite but not fluorite and has a Mohs hardness level of 3.5 (Flynn 2003,

262). A low hardness level means that extracting the material is easier, and the product is more malleable during the manufacturing process (Bains 2011, 71). The mineral content within rock types varies, meaning that some rocks can span a number of hardness categories depending on the

Mohs hardness value	Reference mineral
1	Talc
2	Gypsum
3	Calcite
4	Fluorite
5	Apatite
6	Feldspar
7	Quartz
8	Topaz
9	Corundum
10	Diamond

Figure 4.4: Mohs scale of hardness(after Roebeen et al. 2010).

mineral content (Winkler 2013, 32). However, in bead and pendant production durability and toughness is required to withstand the shaping process and perforation (Bains 2011, 212). A Mohs hardness level of 3-5 is ideal for the manufacture of beads and pendants as such rock types are soft enough to allow easy shaping to occur but are hard and durable enough to withstand perforation and subsequent wear.

For the purpose of this study, a macroscopic petrographical study was carried out using a hand lens by Dr. Stephan Mandal, on behalf of the author, of 131 of the beads and pendants held in the NMI and UCD (Appendix C). This analysis ascertained the rock types utilised in the manufacture of the beads/pendants, highlighted potential sources for the raw material and identified instances of heat stress/burning. Photographs were utilised for the identification of eight of the beads, as these were unavailable in the museum at the time the analysis was carried out. Mandal had previously analysed the bead and pendant material from

the Mound of the Hostages, Co. Meath (Mandal 2005), and a recent publication (Eogan and Cleary 2017) provided the identification for the material recovered from Knowth 1.

[4.6 Colour](#)

Colour is a direct attribute of the raw materials used and was just as likely to have been an important factor in choosing raw materials as their practical properties. In the past bead researchers have used a number of identification systems, however, in 2012 Munsell released the Munsell bead colour book. This resource (similar to Munsell's soil colour charts) is now considered the optimal way to identify a bead's colour on archaeological excavations. In the initial phase of this study, the Munsell bead colour book was used to classify beads and pendants into an array of colour categories. However, this system was subsequently abandoned for several reasons, both practical and theoretical.

On many occasions the closest match on the Munsell bead colour chart diverged greatly from the colour of the bead or pendant due to physical properties including lustre and texture, and so the chart did not prove useful as a reference tool. In addition, it is impossible to ascertain how Neolithic people perceived variations in colour hue and how divergent their classification of colour may have been from modern colour vocabularies (Gage 1999, 110). The discrepancy between the range of colours perceived by humans and the restricted number of colour terms present in many societies is notable, in that a restricted palette of colour terms is often employed and utilised to incorporate an assortment or gradation of colours within the same spectrum or hue (Baines 1985). For example, fieldwork among the Highland Baruya of New Guinea, encountered difficulties when attempting to match pigments utilised in rituals with earlier identifications on a Munsell colour chart by natives (Owoc 2002, 128). For this reason, a simpler system of classification was utilised based on Berlin and Kay's basic colour terms.

Eleven basic colour terms were developed by Berlin and Kay in 1969 and supplemented by further studies in 1978, 1991 and 1997 to form the *World Colour*

Survey. The data collected indicated that not all societies used the full range of colours listed, but that all basic colour schemes are included in these terms. The Basic Colour Terms (BCT) are defined by their generality (their meaning is not subsumed by other terms, yet these terms subsume a wide array of additional colours) and salience (in that there is a consensus of usage within a given language) and incorporate a core range of Munsell values for each basic colour (Chapman, 2002, 45-49). The 11 comprise: black, white, red, green, yellow, blue, brown, pink, orange, purple and grey. The Berlin and Kay study has received criticism based on epistemological (Lucy 1997, Saunders 1995), theoretical (Davidoff 1997, Wierzbicka 1990) and methodological (Sivick 1997) issues, however these are generally related to their secondary evolutionary paradigm. Archaeological bead and artefact studies have accepted these terms as a useful reference system (e.g. Bar-Yosef Mayor 2014, Bains 2011, Cooney 2002).

The 11 BCTs are useful for this current research as they are considered more abstract than non-basic colour systems including the Munsell chart, encompassing graduating colours of a similar hue into a simpler colour unit. In the catalogue (Appendix 1 and 2), colours that are divided by a forward slash are predominantly the first colour with an underlying tone or discolouration of the second colour e.g. red/brown. For analytical purposes, the colour white- also encompasses other light colours including nude, cream and beige. In some instances, colours that have similar hues and may be representative of similar social and symbolic references are presented as a colour grouping. When assessing for colour both fragments and full beads were considered.

[4.7 Results of the analysis](#)

The results of the analysis of descriptive variables (such as raw material, colour, shape, size and adornment); evidence related to primary bead use (including heat exposure and wear), spatial distribution patterns and contextual information were amalgamated in a Microsoft Excel database. Patterns in the assemblages were then determined using several functions in excel.

The results of the analysis are presented here in individual sections, each addressing a key research question. These questions include:

1. What quantities of beads and pendants have been recovered from Irish passage tombs?
2. Are there any significant changes in bead and pendant types through time?
3. Is there a geographic distribution bias in the inclusion of stone beads and pendants across Irish passage tombs?
4. Was there a preferred lithology for the manufacture of stone beads/pendants?
5. What colours are utilised for pendants and beads?
6. Are there identifiable preferences in terms of bead and pendant shape in Irish passage tombs?
7. Are beads and pendants decorated?
8. How many beads and pendants exhibit signs of burning?
9. Are there any notable patterns observed in the spatial locations of bead/pendant artefacts in Irish passage tombs?

4.7.1 What quantities of beads and pendants have been recovered from Irish passage tombs?

To date, Neolithic contexts from 22 passage tombs across Ireland have produced 192 stone beads, pendants and fragments: 76 pendants, 103 beads and 13 bead/pendant fragments (Fig. 4.5). The majority of these sites have produced significantly more stone beads than stone pendants. This is reflected in the overall figures, which indicate that pendants constitute just 38% of the entire collection. Despite this fact, 23% (=n.5) of assemblages do not feature stone pendants and comprise solely of stone beads and/or stone bead/pendant fragments. These bead-only assemblages are not restricted to a particular category of passage tomb (Hensey's Type 1, 2 and 3 categories). Furthermore, all five sites that feature bead-only assemblages display a substantial level of disturbance,

producing smaller bead assemblages of just one to three beads. Passage tomb sites producing only stone pendants comprise 18% (=n.4). The remaining 54% of sites included in the study (=n.12) feature both beads and pendants in their assemblages. Mixed assemblages were recovered from relatively intact sites including Belmore (Type 2), Carrowkeel G (Type 2), Fourknocks 1 (Type 3), Loughcrew R2 (Type 2/3) and the Mound of the Hostages (Type 2). Seemingly, a combination of both artefacts was more typical.

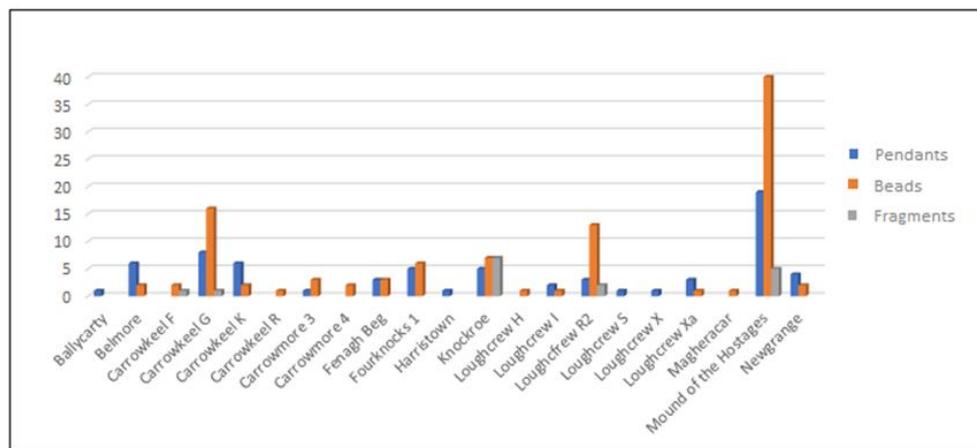


Figure 4.5: Figures of pendants, beads and fragments from each site (by author).

4.7.2 Are there significant changes in bead and pendant types through time?

There are clear changes throughout the Neolithic in terms of bead size preferences and finish. The development is in no way linear, but there is a notable increase in the regularity and intricacy of material manipulation expanding from the tombs displaying Type 1 characteristics to the later and more complex Type 3 architectural features. As passage tombs gradually become more advanced architecturally, the bead and pendants become more regular in form and display a notably higher degree of polish. Interestingly, as the manufacture of beads and pendants becomes more sophisticated, bead sizes decrease but pendants appear considerably larger. There are exceptions to this rule however: for example, pendants recovered from Loughcrew I (Type 2) and Harristown (Type 2) are three times larger than those recovered from any other site. The three pendants

recovered from Loughcrew I (I.D. 140,142,143) are all unusually fashioned and the pendant from Harristown (I.D. 192) is the largest pendant in the entire Irish collection. It is probable that this change in sophistication and size was influenced by the evolution of more advanced manufacturing techniques and craftsmanship through time, mirroring the changes in passage tomb advancement and sophistication.

The numbers of stone pendants and beads drastically decrease from the Middle to Late Neolithic with the appearance of Type 3 architectural traits. Instead there appears to be an increase in high quality ceramic pendants imitating the style of Type 2 stone pendants.

Additionally Type 1 assemblages are considerably smaller than those typically recovered from Type 2 (the average is 6) and Type 3 (the average is 7). Type 1 sites have produced the least stone bead/pendant assemblages in general constituting only 14% (=n.3) of sites, while Type 2 tombs have produced 64% (=n.14) and Type 3 monuments which form 23% (=n.5) of sites. The largest assemblage from a Type 1 site consists of 5 artefacts (the average is 3). The largest stone bead/pendant assemblages have been recovered from sites that could be considered Type 2 including Carrowkeel G, Loughcrew R2 and the Mound of the Hostages. Knockroe is the only Type 3 site to have produced a large assemblage with 19 stone beads and pendants. It is important to note that Type 2 sites are overrepresented in the passage tomb tradition comprising 75% of all sites (Hensey 2015, 30).

4.7.3 Is there a geographic distribution bias in the inclusion of stone beads and pendants across Irish passage tombs?

It has been estimated that there may be 260 passage tombs in Ireland encompassing 236 positively identified passage tombs (Shee Twohig 2004, 8), and additional cairns that are likely to represent passage tombs but have not yet been excavated (Hensey 2014, 161, Sheridan 1986). Figure 4.6 illustrates the distribution of sites included in this research (Fig.4.6a), in relation to overall passage tomb distribution (Fig.4.6b). The area that produced bead and pendant material correlates with the densest area of passage tomb activity, extending diagonally from the northwest to the northeast, with additional sites scattered further south. Passage tombs north of this line have not produced beads or pendants as an element of their assemblages. Similarly, a clustering of sites extending from south Dublin through west Wicklow have not yielded any beads or pendants. Additionally, many southern sites have been affected by extensive farming activity. The southern sites that have produced beads and pendants have suffered severe disturbance including Harristown (Type 2), Knockroe (Type 3), and Ballycarty (possibly Type 2).

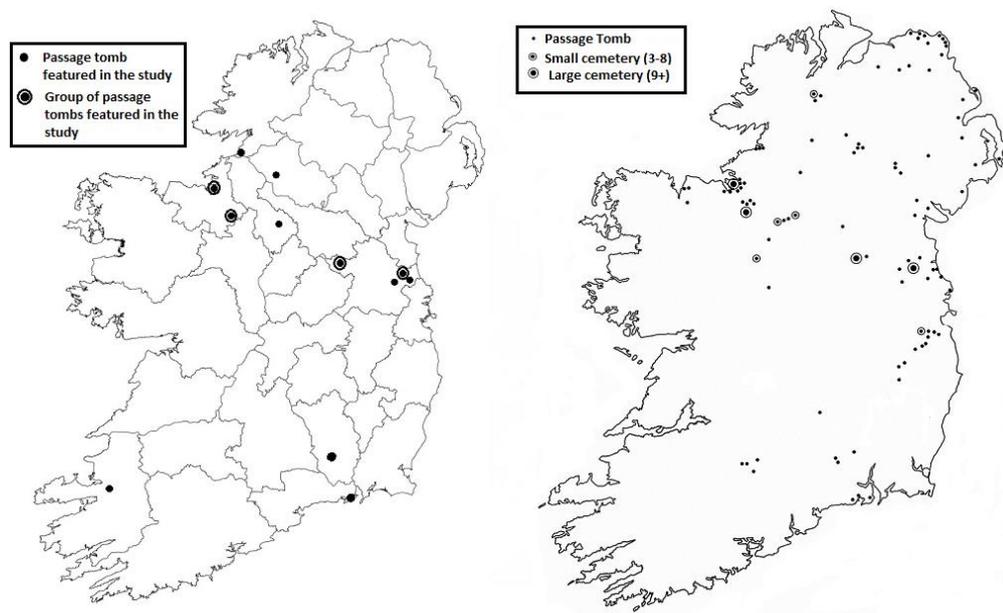


Figure 4.6: Distribution Maps (a) Distribution of passage tombs featured in the study; (b) Distribution maps of passage tombs in Ireland (adapted from Ó'Nualláin 1989, 145).

4.7.4 Are there identifiable preferences in terms of bead and pendant shape in Irish passage tombs?

This research identified nine major bead shape classifications consisting of numerous sub-types, and seven major pendant types also encompassing various sub-types. A wider range of variability is evident amongst beads (Table 4). Bead artefacts amalgamate physical characteristics from a variety of classifications, resulting in more morphological diversity including; ovoid-barrel, ring-flat, or irregular-disc shapes.

Pendant Class	Numbers	Percentage	Bead Class	Numbers	Percentage
Hammer	30	40.5	Spheroid	31	26.3
Pestle	29	39	Circular	26	22
Axe	6	8	Barrel	19	16
Cylindrical	3	4	Disc	10	8.5
Bi-lobe	3	4	Ring	7	6
Triangular	2	3	Spool	4	3.4
Hone	1	1.5	Waisted	4	3.4
			Knobbed	3	2.5
			Oblate	1	0.8
			Unidentifiable fragments	13	11

Table 4: Pendant and bead forms featured in the catalogue (by author).

The predominant classes of bead include spheroid (=n.31), circular (=n.26) and barrel (=n.19). Disc (=n.10) and ring (=n.7) are also common. A spheroid bead with a groove encircling the waist recovered from two sites (Fenagh Beg and Loughcrew R2- both Type 2) has been classically referred to as a maul pendant. However, the centrally placed perforation and wear on adjacent faces would suggest that maul pendants are better suited to a waisted bead classification. Also, the large oblate bead (I.D. 29) from Fenagh Beg (Type 2) is completely unique in the Irish series.

Unusual examples displaying a series of knobbed surfaces (I.D. 132,133) have been recovered at Knowth 1 (Type 3) and the Mound of the Hostages (I.D. 58) (Type 2).

Such unusual beads appear to be confined to Type 2 and Type 3 sites. Spheroid beads occur in small numbers across all site types. In comparison, circular and barrel beads are dominant across all site types, but only occur at half the number of sites.

In contrast, the pendants display less typological variability which may be indicative of cultural norms (Fig. 4.10). The dominant form observed throughout all assemblages and across the entire range of sites are hammer (49.5%=n.30) and pestle pendants (39%=n.29). Cylindrical pendants constitute 5.5% (=n.4) of the entire pendant assemblage. Rarer forms such as triangular, bi-lobe and hone-shaped pendants occur at tombs that display Type 2 characteristics including; The Mound of the Hostages, Co Meath, and Belmore, Co. Fermanagh. Type 3 sites produce only hammer and pestle pendants.

4.7.5 Was there a preferred lithology for the manufacture of stone beads/pendants?

The Irish passage tomb bead/pendant assemblage is dominated by stones with a Mohs hardness level of 1-5, with harder materials of 6-7 employed more infrequently (Table 5). These materials are utilised across all bead and pendant categories, highlighting their versatility in terms of the manufacturing process. The distribution of rock types, across both bead and pendant categories, is extremely interesting. As this material analysis was performed in a macroscopic level, 66/74 pendants and 99/105 beads were positively identified. As a result, the following percentages are taken from the positively identified group of 165 beads and pendants. Fragments have been excluded as the number of beads that they represent is inconclusive.

Rock Type	Mohs hardness level	Percentage of Pendants	Percentage of Beads
Slate	1-2	0%	2%
Amber	2-2.5	0%	1%
Mudstone	2-3	9%	10%
Serpentinite	2.5-3.5	13%	0%
Steatite	3	34%	50.5%
Limestone	3	16%	22%
Shale	3	3%	2%
Tuff	4-6	0%	2%
Gabbro	5-6	3%	0%
Sandstone	6	6%	3%
Jasper	7	15%	4%
Quartz	7	1%	2%
Dolerite	7	0%	1%

Table 5: Identifiable rock types utilised for beads and pendants in Irish passage tomb contexts (adapted from Mandal 2005, 2017), Mohs hardness level (Pellant 2010).

The dominant lithologies in the pendant assemblage include: steatite (34%=n. 23), jasper (15%=n.10), limestone (16.5%) and serpentinite (13%=n.9). To a lesser extent, mudstone, gabbro and sandstone are used. There is one example of a quartz pendant recovered from Carrowmore 3, by Wood-Martin (Wood-Martin 1886/87, 54). The bead assemblage appears to incorporate a wider variety of rock types, mirroring the diversification shown in morphology as will be discussed below. Despite this, the dominant lithologies in the bead assemblage are similar to the pendant assemblage, including steatite (50.5%=n.50), limestone (22%=n.22) and mudstone (10%=n.10). Lithologies including slate, shale, tuff, sandstone, jasper, and quartz are utilised occasionally. There is one example of an amber bead from Neolithic horizons, recovered at Belmore, Co. Fermanagh (I.D. 001). In addition, a single example of dolerite (likely a water-rolled pebble) was utilized for bead manufacture in Carnaweeleen Co. Sligo (I.D. 149).

Steatite is the dominant lithology in both bead and pendant categories, accounting for 44% (=n.73) of the entire assemblage. The second most common material is

limestone at 20% (=n. 33). Following these are mudstone (10% =n.16) and jasper (8%=n.13).

The dominant rock type featured in the entire assemblage is steatite, also known as soapstone. It has been recovered on 66% of sites extending from Type 1 and 2 sites in the west (e.g Carrowkeel, Carrowmore and Fenagh Beg) to Type 3 sites in the east (e.g Newgrange, Loughcrew, Fourknocks and Knockroe). Steatite was the most commonly used stone at passage tomb sites in Sligo, Meath and Kilkenny (Appendix C). Steatite does not occur in the Mound of the Hostages assemblage, the largest assemblage recovered from Ireland. It is a grey/green or brown rock consisting mainly of talc and magnesite, in addition to other impurities, giving it a low level on the Mohs hardness scale of 3 (Pellant 2010), and a soapy texture (Micheli and Mazziere 2012, 233). Steatite is quite friable and can be damaged easily however, it can be transformed into the harder and more durable enstatite (Mohs hardness 5) (Kenoyer 2003, 15) through the process of firing at a high temperature (between 700 and 1200 degrees Celsius) for a number of hours (Connor *et al.* 2013, 101). This process means that steatite can retain its malleable qualities through the production process but firing afterward can result in increased durability. Testing carried out in Italy found that the easiest way to produce singular steatite beads and pendants was to work a small block of steatite by removing material with sandstone pebbles and flint knives. There are additional features that make the rock desirable, including resistance to temperature, high melting point, and latent heat retention (Micheli and Mazziere 2012, 233-36). The varieties of steatite utilised for passage tomb beads/pendants have either a glassy or a chalky texture.

Limestone was exploited for both beads and pendants across all monument types (passage tomb Types 1, 2 and 3) constituting about 20% of the entire assemblage (=n.33). This number is skewed as limestone beads and pendants account for 31% of the assemblage recovered from the Mound of the Hostages (Mandal 2005, 303). Discounting the Mound of the Hostages, limestone constitutes less than 8% of

artefacts. This is interesting as it is the most commonly occurring rock in Irish geology and is available locally near all sites as bedrock or secondary sources including lakeshore deposits and glacial tills/subsoils (Mandal 2017). Additionally, limestone retains a level 3 on the Mohs hardness scale (Pellant 2010), and is relatively easy to carve (Rapp 2009, 132). The only example of a decorated pendant outside the Mound of the Hostages was recovered from Carrowkeel G (I.D. 175)(Type 2) and manufactured from limestone (Macalister *et al.* 1911/12, Mandal 2017). Limestone is ordinarily white but can be coloured by impurities, resulting in a broad colour palette ranging from white, to beige, to brown, to grey.

Serpentinite constitutes 12% of the pendant assemblage, utilised for nine of the pendants recovered from the Mound of the Hostages, including both decorated stone pendants (Mandal 2005, 303). Serpentinite varies from light to dark green, with a glossy sheen, and slippery greasy texture (Rapp 2009, 122). It has a hardness level of 2.5-3.5 rendering it malleable, but relatively durable (Pellant 2010). The Mound of the Hostages is the only site that produced serpentinite material and as a result, is the only site to have produced green material. However, the bulk of the classifications of serpentinite are badly burned examples and have suffered dark grey discolouration these would originally have had a green hue. There are sources of serpentinite in the west of Ireland, in the Killary Bay areas of Galway and Mayo, however there are no sources in Meath (Mandal 2006, 303).

Thirteen examples of jasper beads and pendants have been recovered from Irish passage tombs. It is one of the hardest materials utilised (Mohs hardness 7) (Gwinnett and Gorelick 1979, 17, Pellant 2010) as a result, manufacture would have required a greater investment in time, energy and care. Jasper examples were recovered from Carrowkeel, Fourknocks 1 and Loughcrew and Knockroe (Mandal 2017). The jasper referred to is a red chert or chalcedony containing up to 20% iron oxide recovered from coarse red sandstones (Rapp *et al.* 2006). Jasper pebbles occur in Navan, although they are also widely available in glacial material, subsoils and beach pebbles (Mandal 2006, 303, 2017).

Mudstone also appears to have been widely used for manufacture of both beads and pendants (6 pendants and 13 beads). Mudstone is quite soft, with a Mohs hardness of 2-3 and can vary in colour widely (Pellant 2010), however the mudstone beads included in this study range from deep brown, to dark grey to black. These examples are distributed across from the earliest to the latest developments including Carrowmore, Fourknocks 1, Knockroe, Newgrange, and Harristown. The mudstone utilised was likely sourced from secondary sources, for example lake deposits or glacial tills, although it was also available locally as outcrop material (Mandal 2006, 2017).

The amber bead from Belmore, Co. Fermanagh was recovered in association with cremated remains and additional stone and bone beads and pendants (Coffey 1898, 659-66). Coffey (1898) and Herity (1974) elucidate that the bead material was primary; however, it is possible that this is a later Bronze Age intrusion as secondary BA material was recovered from the overlying cairn (Herity 1974, 231). Antiquarian and folkloric accounts have suggested that prehistoric sources of amber and amber-like substances such as retinite, may have been found nearby at Craig-na-shook, Co. Derry, Rathlin Island, Co. Antrim and in the Lough Neagh area (Briggs 1997, 112-114). However, the viability of these sources has not been determined and examples of Irish amber beads are usually exotic in origin (Moloney 2014, 14).

4.7.6 What colours are utilised for pendants versus beads?

Only bead fragments with a recognisable form (such as barrel or circular) were analysed, fragments were not included. White/light and grey are responsible for equal portions of the bead collection 27% (=n.28). Brown is another dominant colour constituting 21% (=n.22). The majority of discernible bead forms employ a wide range of colours- site type does not appear to have any significant role in the selection of colour for beads. Almost 55% (=n. 17) of all spheroid beads are manufactured from the warmer palette of red, orange or brown. In contrast, barrel beads are primarily grey, 55% (=n.10). Circular beads are also present in all

colour categories and widely distributed. Green is an extremely rare colour for beads occurring at only one site, the Mound of the Hostages, Co. Meath (Type 2). Interestingly, this is also the only site to have produced green pendants.

The colour analysis revealed that the most prevalent colours in the pendant assemblage are white 27% (=n.17) and grey 32% (=n.25) (Fig.4.6b). The white category in this instance is more accurately referred to as the 'light' category as discussed in the *World Colour Survey* (1969). This category includes colours that might be referred to as off-white, nude and cream, and which may all be considered in the lighter colour spectrum. If we group the 'warmer' colour groups together they also constitute a significant portion of the pendant assemblage including browns 21% (=n.16), reds 10% (=n.9) and oranges 2% (=n.3). The most common pendant colours could be grouped into three distinct groups: light (white), dark (black and grey) and warm (brown, red, orange). The remaining colours form 5% of the entire collection.

There appears to be some variations of pendant types within colour groups. In order to compare the colour and bead type more accurately, only pendant fragments with a discernible form were analysed. Hammer and pestle pendants are the most common forms of pendants; 31% (=n.10) of hammer pendants and 31% (=n.9) of pestle pendants are grey. However, these two types also exhibit the widest variation of colours. There are some examples of pendant types that are only manufactured from certain colours. Bi-lobe pendants are solely manufactured from grey stone such as examples from the Mound of the Hostages, Co. Meath (Type 2), and Fourknocks 1, Co. Meath (Type 3). While, only 4% (=n.3) of pendants are manufactured from green material, the two decorated pendants from the Mound of the Hostages (Type 2) and a triangular pendant also manufactured from green stone.

It is clear that the bead colour spectrum differs greatly from that of the pendants. Colour variation is more pronounced throughout the bead assemblage (Fig. 4.6). Pendants are dispersed across seven colour categories, whereas beads include ten

different basic colour classifications. Unlike the pendant assemblage, there are few discernible instances of preference relating to both colour and form.

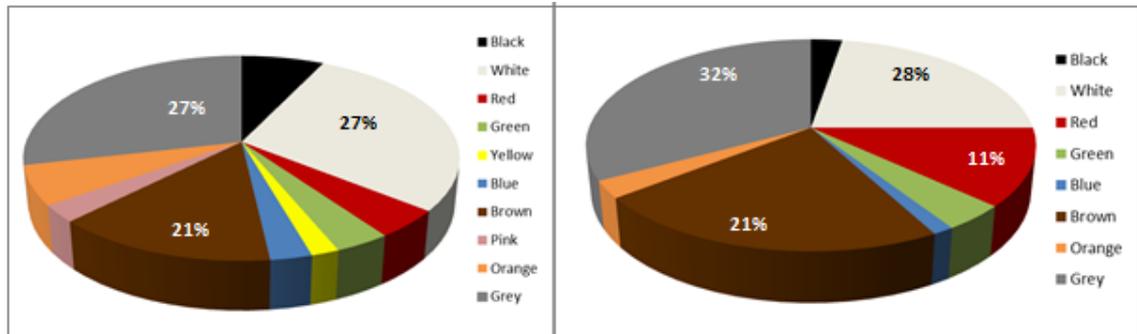


Figure 4.7: Colours in the Irish passage tomb bead assemblage (by author) (a) Colours demonstrated through the pendant assemblage (by author).

4.7.7 Are beads and pendants decorated?

Decoration is limited, confined to pendants only, and consists of spiralling grooves encircling the body of the pendant (Fig. 4.8). Two serpentine specimens (I.D. 035, 054) were recovered in association with cremated remains from the passage and the middle compartment at the Mound of the Hostages, Co. Meath (Type 2) (O'Sullivan 2005, 147). A decorated example (I.D. 175) was also recovered from the central recess in association with cremated remains at Carrowkeel G, Co. Sligo (Macalister *et al.* 1911/12, 335). Embellishment is more commonly found on bone pendants, such as the three examples recovered from the Mound of the Hostages, Co. Meath and another from an unknown context at the same site (O'Sullivan 2005, 147), and a bone pendant encircled by a groove at Fourknocks 1, Co. Meath (Type 3). This is surprising as the material utilised to manufacture the decorated pendants is serpentinite, which has a Mohs hardness level of 2.5 to 3.5 which is considerably less than bone, which has a level of 5. This means that serpentinite requires less effort to carve than bone. However, bone can be softened by immersion in water, milk or sorrel making it up to ten times easier to manipulate (Osipowicz 2007, 5).

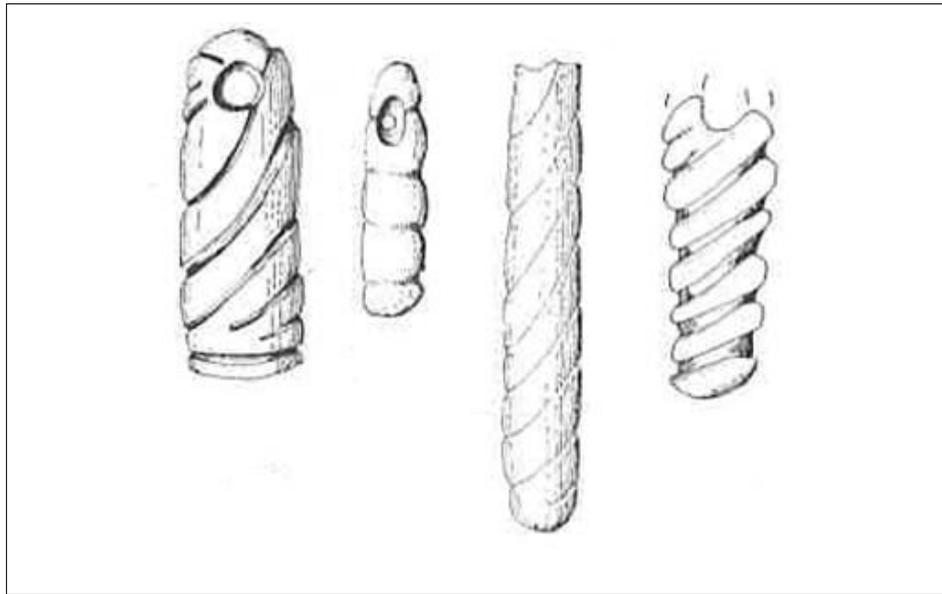


Figure 4.8: Decorated Pendants (From left) (a) Stone pendant from the Mound of the Hostages; (b) Bone pendant from the Mound of the Hostages; (c) Bone pendant from Loughcrew R2; (d) Stone pendant Carrowkeel G (after Herity 1974).

4.7.8 How many beads and pendants exhibit signs of burning?

A significant portion of the bead and pendant artefacts (42% =n.81) demonstrate some traces of burning/heat stress including discolouration (blackening or bleaching), flaking of the external lithology, surface striations, cracking, spalling, and the presence of blue/white deposits and surface sheen. The finds display varying levels of thermally induced stress, possibly due to varying degrees of exposure, or variability in tensile strength due to the hardness of the rock, in some instances resulting in the complete fragmentation of the artefact. This 'heat stress' is a feature encountered throughout bead/pendant assemblages in all Irish passage tombs (Mandal 2017, 8).

It is possible that raw materials were exposed to heat during the manufacture process, as heating materials can harden softer materials to make them more durable or soften harder material to make it more malleable (Kenoyer 2011, 15), for example steatite. Almost half of all the steatite beads/pendants encountered in the Irish passage tomb assemblage have evidence of burning/heat stress. This

is incredibly interesting as the steatite can endure a high level of thermal shock, meaning that it would rarely rupture from heat exposure.

Rock type	Percentage of heat-stressed/burnt beads/pendants
Gabbro	100%
Serpentinite	66.6%
Limestone	57.1%
Sandstone	57.1%
Steatite	48.3%
Shale	33.3%
Quartz	33%
Jasper	20%
Mudstone	15%
Dorelite	0%
Slate	0%
Tuff	0%

Table 6: Rock types that display evidence of heat stress(after Mandal 2005, 2017).

However, in this present study- the high percentage of heat-altered examples (Table 6), the level of bead fragmentation, and the presence of beads/pendants in association with cremated human remains, would suggest their inclusion in ritual action related to human remains and fire. Furthermore, the beads from Knowth 1 have been subjected to XRF analysis, which suggests that the white accretions adhering to the beads are high in phosphate. This indicates that the white accretions are likely fragments of bone that have become fused to the outer fabric of the bead through heat warping (Cleary *et al.* forthcoming, Sheridan 2014, 307). In order to obtain a definitive conclusion of the number of beads involved in the cremation process, experimental work in conjunction with XRF and SEM examination would be required on all assemblages to confirm these results.

However initial assessments reflect the conclusions represented by the Knockroe case assemblage, where a large proportion of the assemblage, appear to have been affected by fire (Chapter 5).

4.7.9 Are there any notable patterns observed in the spatial locations of bead/pendant artefacts in Irish passage tombs?

Robin's study indicates that at sites including: Knowth 1 and the Mound of the Hostages (Fig. 4.9), objects were clearly differentiated and classified into categories, (e.g beads/pendants vs pins: round vs pointed, stone vs organic, stone vs bone) which were provided with formal opposing locations (left v right, passage v recess) within the monument. For example; at Knowth 1, the left recess produced pins (10) and pendants (3) whereas the same objects were found in the reverse proportions in the right recess (3 pins V 12 beads and pendants) (Robin 2010, 407). At the Mound of the Hostages, an undifferentiated passage tomb (featuring no recesses), Robin suggests that the three exterior cists, accessible through narrow openings between the chamber orthostats, acted as recesses from a function standpoint (*ibid.*, 407). Both O'Sullivan (2010) and Robin (2010) highlight the differentiation that occurred between the artefacts in the lateral cists: balls were exclusively placed inside cist II whereas pendants, particularly elongated and richly decorated, were exclusively found inside cist III, located on the opposite side (O'Sullivan 2005, 237). This ordering addresses the depositions in recesses exclusively and does not address the artefact assemblages recovered from the passages of these monuments. The passage of the Mound of the Hostages produced the majority of the stone bead and pendant material (87%) and it is likely that deposition in this context was equally significant.

These examples indicate a formalised ordering of material, whereby the inclusion of specific artefacts (including beads and pendants, but also pins and balls) necessitated an ulterior, balancing, deposit of artefacts. Axial opposition was encountered in the positioning of a number of assemblages (Knowth 1, Loughcrew H, the Mound of the Hostages), however, in many cases (Belmore, Carrowkeel F,

G, K, Fourknocks, Knockroe), stone beads/pendants were distributed without any order or distinction throughout the recesses and passages of the monuments.

However, there were no definitive selective patterns found in the bead/pendant material reflecting shared symbolic schemes associated with architectural space in this study. Concerns relating to the recording of spatial locations of artefacts, subsequent reuse in later periods, looting activities, and natural degradation of sites prior to excavation addressed in Appendix D, are of key importance. In summation, it is likely that a large proportion of the primary bead/pendant artefacts from passage tombs have been disturbed or removed in the past, due to secondary activity or reuse of the site in subsequent periods. It is also feasible that the contents of the catalogue presented in Appendix A and B are representative of the entire original assemblages from each site. This limited our ability to definitely confirm the distinctive patterns identified by Robin in material.

Some formalised deposition practices have emerged. Due to the limited information regarding the spatial location of artefacts in earlier antiquarian reports, the information regarding spatial and stratigraphic contexts of many stone beads/pendants is uncertain. Despite this ambiguity, stone bead and pendant material appears to be exclusively associated with contexts featuring cremated human remains in Irish passage tombs. In some instances, these contexts feature comingled unburnt and cremated remains (Carrowkeel F, K, Loughcrew, Mound of the Hostages), however, in all instances the presence of cremated remains are an essential element. In Type 1 sites stone beads/pendants are usually restricted to the inner chamber, however they also occur between the chamber and the perimeter (Magheracar, Carrowmore 1, Carrowmore 3, Carrowmore 27).

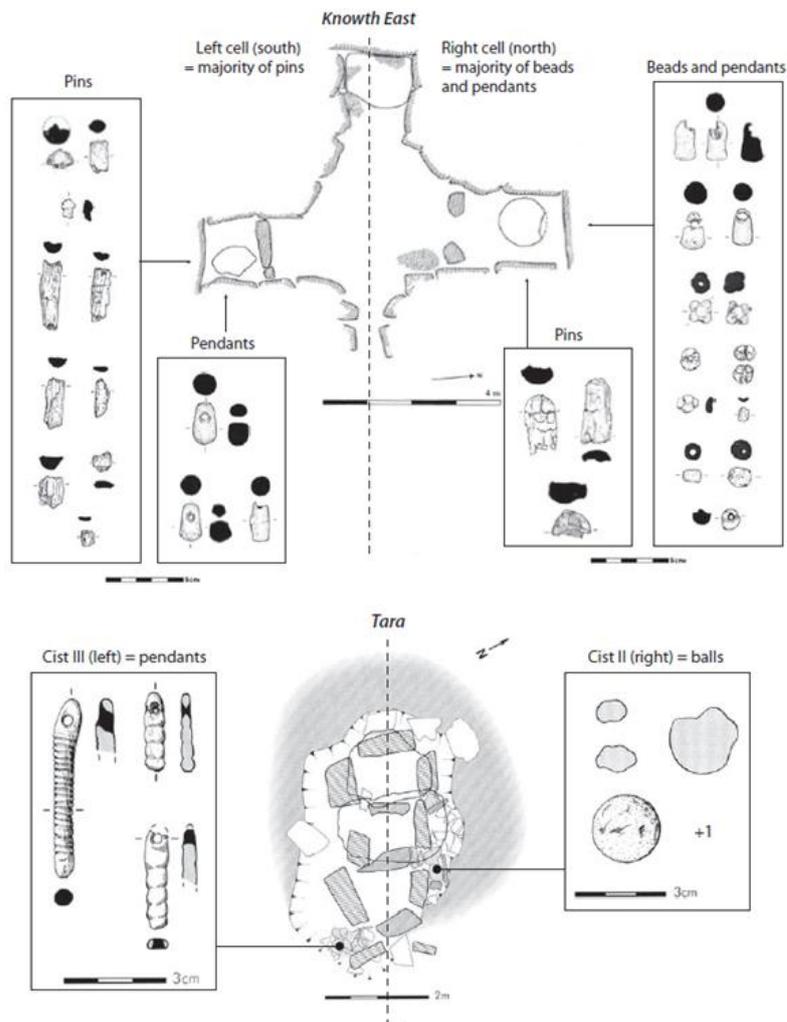


Figure 4.9: Spatial differentiation of artefacts at Knowth 1 and the Mound of the Hostages (adapted from Robin 2010, 406).

In Type 2 sites they can occur throughout the monument, following the spread of burnt bone if they are undifferentiated, or in the passages and recess of cruciform or many recessed tombs (Carrowkeel F and K, Loughcrew, Mound of the Hostages). In Type 3 sites they are often associated with recesses that contain stone basins (Newgrange, Newgrange L), however, this is not always the case (Knockroe, Knowth). They are also recorded from the outer chamber area and the additional side chambers and passage. It is unlikely therefore that beads and pendants were afforded their position within the tomb based on a standardised association with architectural features, and more likely that their interment was in direct correlation with the deposition of cremation deposits.

Bead and pendant artefacts are also rarely discovered in isolation. In 81% of instances, beads/pendants were not recovered singly. This deposition practice may be indicative of a small single item (containing 1-3 beads and pendants) or partial deposition of composite items, or the association of individual artefact elements (a pendant from a larger complex necklace) with particular individuals. It is clear from the small proportion of ornaments available in relation to the MNI afforded by osteological analyses of some sites, that not all individuals were afforded beads. For example: The Mound of the Hostages Cist 1 was a closed context that produced one bead in association with eight adults, one child and one infant (all cremated) (O'Sullivan 2005, 120-123). In the case of Carrowkeel K, at least 21 individuals (including one neonate, one infant, five children, two adolescents and 12 adults) were recovered from the chamber of the monument (Geber *et al.* 2016) which produced only 3 stone pendants (Macalister *et al.* 1911/12, 339).

[4.8 Conclusions](#)

- To date, Neolithic contexts at 22 passage tombs across Ireland have produced 192 stone beads pendants and fragments: 76 pendants, 103 beads and 13 indistinguishable fragments.
- The majority of assemblages contain significantly more beads than pendants.
- The largest assemblages have also been recovered from sites that display Type 2 characteristics. However, Type 2 sites are overrepresented in the passage tomb tradition (accounting for an estimated 75% of sites). These sites have produced 62% of assemblages despite the fact that they are the least explored.
- The area that produced bead and pendant material correlates with the densest area of passage tomb activity, extending diagonally from the northwest to the northeast, with additional sites scattered further south.
- Type 3 sites have produced only 23% of stone bead and pendant assemblages, however an influx of refined ceramic pendants imitating the

style of Type 2 stone pendants, were recovered at these sites. This suggests a change in material preference during the Type 3 phase of construction.

- More diversity is demonstrated throughout the bead assemblage than the pendant assemblage. Nine major bead classifications consisting of numerous subtypes were identified, in contrast with seven major pendant classifications.
- The predominant classes of bead include spheroid (=n.31), circular (=n.26) and barrel (=n.19).
- The dominant form of pendant observed throughout all assemblages and across the entire range of sites are hammer (40.5%=n.30) and pestle pendants (39% =n.29).
- Additional elaboration of the material including carving is rare and confined to pendants. There are only three examples to date, all recovered from Type 2 sites.
- Steatite is the dominant lithology employed in the manufacture of both beads and pendants, accounting for 44% (=n.73) of the entire assemblage. The second most common material is limestone at 20% (=n.33). Following these are mudstone (10% =n.16) and jasper (8%=n. 13).
- The dominant lithologies employed in the pendant assemblage include: steatite (34%=n.23), jasper (15%=n.10), limestone (16%=n.9) and serpentinite (13%=n.9). The key lithologies in the bead assemblage are similar to the pendant assemblage, including steatite (50%=n.50), limestone (22%=n.22) and mudstone (10%=n. 15).
- The bead assemblage incorporates a wider variety of rock types and morphology, than the pendant assemblage.
- The colour analysis revealed that the most prevalent colours in the pendant assemblage are grey 32% (=n.25) and white 28% (=n.17). Warmer colour groups together they also constitute a significant portion including browns 21% (=n.22), reds 11% (=n.9) and oranges 2.5% (=n.3).

- Colour variation is more apparent throughout the bead assemblage. Pendants are dispersed across 7 categories, whereas beads include ten different basic colour classifications. White and grey are responsible for equal portions of the collection 27% (=n.28). Brown is responsible for 21% (=n.22).
- A significant portion of the stone bead and pendant artefacts (42% =n.81) show evidence of heat exposure including; discolouration (blackening or bleaching), flaking of the external lithology, surface striations, cracking, spalling, and the presence of blue/white deposits and surface sheen.
- There were no distinctive selective patterns found in the bead/pendant material reflecting shared symbolic schemes associated with architectural space.
- Stone bead/pendant material is exclusively associated with contexts featuring cremated human remains in Irish passage tombs.
- Bead and pendant artefacts are rarely recovered in isolation; additional examples are usually recovered from the same context, i.e recess, cist, passage.
- The numbers indicate that stone beads and pendants were likely not interred with every cremated individual.

Chapter 5: The Potential of Use-Wear Analysis of Stone Beads and Pendants

The following investigation focuses on use-wear analysis of thirteen stone beads and pendants recovered from Neolithic horizons at Knockroe passage tomb, Co. Kilkenny, in an attempt to illustrate how much information can be gleaned from a single stone bead and pendant assemblage. This chapter outlines the background to bead use-wear analysis, summarises the considerations to be made when performing use-wear, outlines the equipment and methodology utilised in this study and presents the results of the analysis. The investigation was carried out to assess previous interpretations of the way beads functioned in Neolithic society. The thirteen artefacts were studied at various magnifications, both macroscopically and microscopically, and compared to a standard reference collection of similar material to identify parameters of wear and post-depositional modification. This is the first ever use-wear analysis that has been carried out on a bead assemblage in Ireland. In general, interpretations of the role of beads in Neolithic society have been based on antiquated hypotheses that have never been tested scientifically. The results of this study challenge some of these assumptions, providing entirely new evidence of Neolithic behaviours, techniques and aesthetic preferences.

[5.1 General background to use-wear analysis](#)

Use-wear analysis is a means of identifying traces of manufacture and use on the surface of an artefact. The artefact is examined at various degrees of magnification to assess changes in the surface topography, which may be indicative of manufacture, use, and subsequent post-depositional modifications due to environmental factors (Evans *et al.* 2014, 11). High powered microscopes are employed to facilitate this study including the optical microscope and a scanning electron microscope (SEM). These methods are individually beneficial and complimentary, providing a range of information discernible at various magnifications (Borel *et al.* 2014, 57).

The optical microscope uses visible light and a system of lenses to enhance images of smaller specimens (Croft 2006, 3). Modern developments include a system that shows the resulting image directly on a computer screen; the image can then be reproduced digitally.

A scanning electron microscope (SEM) is a high-powered microscope that utilises an electron gun to produce an image of the surface of an artefact up to 200,000X magnification (Frahm 2014, 6487). During SEM analysis, the electron gun within the microscope focuses a beam of electrons on a particular section of the surface of the object, in order to eject some of the electrons that carry information about the surface structure to detectors that convert them into an electronic image. This image of the surface topography is then transmitted to the computer screen (*ibid.*, 6488-6489). If a specimen is not conductive it needs to be coated with a conductive surface such as gold or carbon to prevent the distortion and deflection of the electron beam (*ibid.*, 6489). Recent advances in SEM technology have developed microscopes that allow non-conductive materials to be imaged without being coated in a material such as carbon or gold. Instead of coating the specimen in a conductive material, the chamber of the microscope is adapted to focus the beam on carbon or gold sample holders. This method may lead to poorer image quality than the original SEM (Futing *et al.* 2014, 89). However, this new Environmental Scanning Electron Microscope (ESEM) analysis can be applied to archaeological artefacts without any modifications (*ibid.*, 89).

[5.2 Background to bead use-wear analysis](#)

The earliest example of use-wear analysis of bead assemblages was carried out by Gorelick and Gwinnett (1978, 1979), who investigated the perforations of stone beads and cylinder seals from Mesopotamia to gain an understanding of the lapidary craft, that is, the making of stone beads, amulets and cylinder seals. They began their work in 1978 by combining experimental work on modern material followed by SEM observations of Mesopotamian bead and seal artefacts. Over the next couple of decades, they studied beads and drilling techniques from Neolithic

and Bronze Age sites throughout the Middle East, including Yemen, Iran and Egypt (Gwinnett and Gorelick 1981, 1983, 1991). This work was followed by a number of studies focusing on Paleolithic bead assemblages from Europe (D'Errico 1993, White 1993, D'Errico *et al.* 2009). White's work on ivory and stone beads from Aurignacian Europe applied use-wear analysis as a means of recognising the construction of complex social systems through the manufacture of personal ornamentation (White 1993, 55). White's studies identified that the design process was already established prior to the beginning of bead manufacture, implying that standard styles of personal ornamentation were already in use. These pre-established typologies of ornamentation were reflected throughout the burial record affirming the notion that social systems of personal ornamentation arose prior to and independent of economic systems (*ibid.*, 56). Vanhaeran and D'Errico's work on Paleolithic beads frequently utilises use-wear as a means of understanding technical practices, social relationships and reconstructing composite artefacts such as necklaces and bracelets (Vanhaeran and D'Errico 2006, D'Errico and Vanhaeran 2007, 2009, Vanhaeran *et al.* 2006). For example, their use-wear study of 92 Paleolithic shell beads from Blombos cave in South Africa allowed them to reconstruct the most probable way that the oldest beads in the world were strung (Vanhaeran *et al.* 2013, 515).

Recently, use-wear has been developed and advanced considerably with the aim of addressing questions related to the possibilities of the decorative and functional use of beads (Cristiani and Boric 2012, Damick and Woodworth 2015, Vanhaeran *et al.* 2013). There remains no standardised method of discerning use-wear on bead assemblages. However, a number of progressive studies have demonstrated the viability of use-wear analysis in reconstructing the original purpose and appearance of these artefacts (Bonnardin 2008, Rigaud *et al.* 2014, Cristiani *et al.* 2014). The following two examples highlight the results that can be achieved in use-wear investigation.

5.2.1 Paleolithic beads from Abri Pataud, Le Blot and Les Pergues, France

Use-wear analysis was carried out on rectilinear beads, including examples of bone, antler, shell and steatite, from three key Paleolithic sites in France: Abri Pataud, Le Blot and Les Pergues (Rodière 2011, 276). The challenge was to investigate the relationship between bead typology and usage. The study sought to identify whether particular types of beads had a specific status or function (Reiche and Gourrier 2016, 100). SEM was used to study the micro-topography of the artefacts, and the results were compared to experimental studies carried out on modern material. These studies subjected bead replicas to various vibration frequencies and periods of time resting against a tanned hide on a vibration table (Fig. 5.1) to simulate diagnostic features of wear (Rodière 2011, 278). The results produced two likely scenarios. The beads with convex wear patterns on both sides were likely to have been utilised in a composite piece such as a necklace or bracelet. The second type, with a perforation visible on the flatter surface, featured a concentric depression likely to be formed on appliqués, sewn onto garments as embroidered beadwork (Reiche and Gourrier 2016, 102).



(a)

(b)

Figure 5.1: Experimental work on steatite beads (a) Experimental necklace featuring steatite beads and dentalium shell spacers; (b) Resulting use-wear on experimental steatite bead (after Rodière 2011, 281).

5.2.2 Late Mesolithic burials at Vlasac, Serbia

One of the most innovative and successful bead use-wear studies in recent years focused on beads from two Late Mesolithic burials from the same cemetery, that of an adult female and a child. They were excavated in 2006 at the site of Vlasac, in the Danube gorges of the Central Balkans (Cristiani and Boric 2012, 3450). A high volume of fish teeth (carp) and gastropod beads were recovered from the site, described as 'sprinkled' over the bodies due to their unusual deposition pattern. However, researchers noted that a high frequency of these beads were found as close-knit lines beneath the remains and attempted to investigate the significance of this patterning (*ibid.*, 3452). The team utilised low and high magnification use-wear approaches and established analytical criteria for the technological interpretation of the beads (*ibid.*, 3456). Observations made on archaeological samples were compared to ethnographic examples of beadwork. The analysis of technological and use-wear traces indicated that these Late Mesolithic beads could be classified as appliqués, embroidered onto clothing utilising the perforation and/or natural neck of the carp tooth. The distribution of the beads suggested that each bead was sewn onto the back of a garment separately in a decorative display that allowed the white base of the bead to face outwards (Cristiani and Boric 2012, 3461). The distribution of the beads was confined to the back and upper legs of both individuals suggesting they were wearing similar garments, likely cloaks or decorated blankets (Fig. 5.2). The degree of wear suggested that these garments had been used over a considerable period of time as personal attire, ceremonial wear, or heirlooms (*ibid.*, 3467).

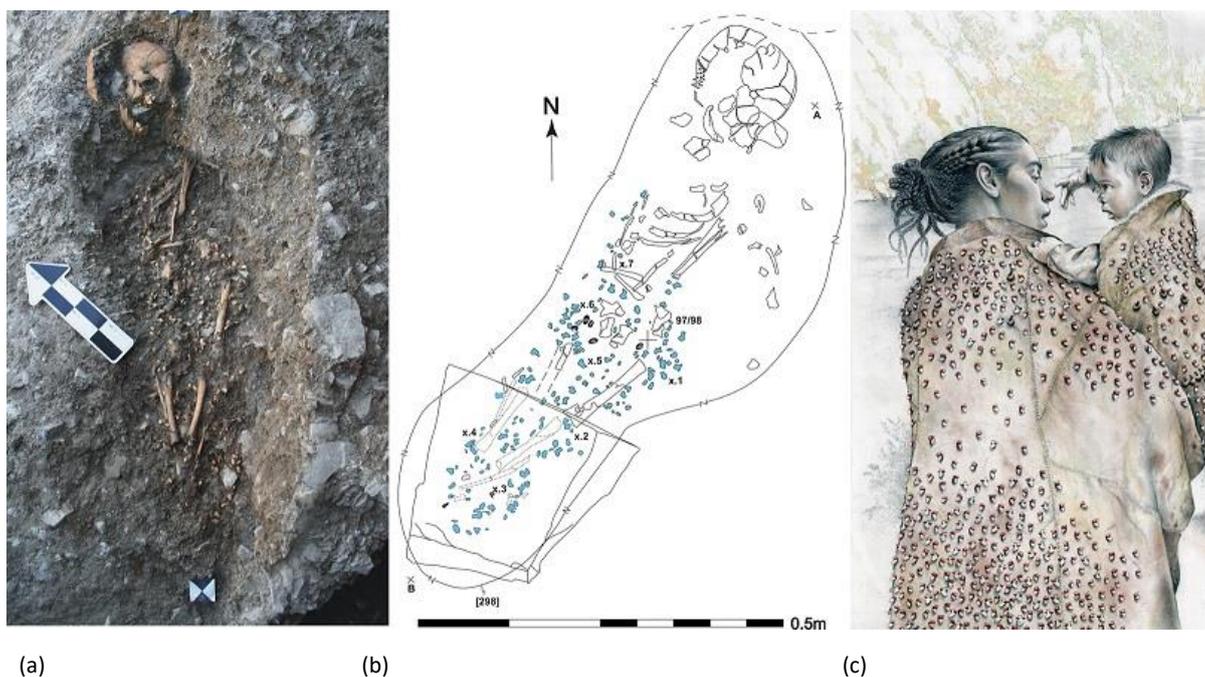


Figure 5.2: Burial H297 from Vlasac, Serbia, showing (a) the child burial in situ; (b) the distribution of beads; (c) the reconstruction of the garment on the female and child following SEM analysis (after Cristani and Boric 2012, 3455-3467).

These two studies have exploited use-wear techniques to facilitate a clearer reconstruction of the ways in which beads were employed, both aesthetically and functionally. Both investigations reflected the way in which beads were displayed on the body, their use over a considerable period prior to their deposition, and the technologies used to manufacture beads. The results of this type of analysis ultimately distinguish the role of beads as ritualised objects, or as socially valued goods.

[5.3 Considerations of use-wear](#)

There are a number of significant variables to be considered when identifying use-wear characteristics on stone artefacts, including the nature of the rock material (hardness, quartz inclusions etc.), the morphology of the artefact, the longevity and intensity of use, and the fastening method used (Gibaja and Conte 2009, 96). Difficulties arise when attempting to distinguish these modifications versus those caused by taphonomic changes that occur after deposition (Asryan *et al.* 2014). The regularity, distribution and orientation of

these alterations are essential when ascertaining the division between evidence of wear (Bonnardin 2008, 299) and post-depositional surface modifications (PDSM).

5.3.1 Common features of use-wear in beads

(1) Changes in original colour: characteristic discolouration may be observed on areas that are subjected to intense pressure such as compression or rubbing (Fig. 5.3) (Cristiani *et al.* 2014, Rigaud *et al.* 2014). Experimental work has shown that wearing a stone bead can change its colour as a result of the nature of the material against which the beads were rubbed. For example, steatite beads worn on bare skin have been shown to change colour in contrast to beads worn over fur or leather (Rodi re 1996, 279).



Figure 5.3: Discolouration due to compression (after Cristiani *et al.* 2014, 298).

(2) Polishing: Although polishing may result from alterations due to use, this is the least reliable evidence of wear as stone beads were often intentionally polished as part of the manufacturing process (Praud 1993, Jeunesse 1995). These areas of polish are generally characterised by shiny, flat surfaces (Fig. 5.4).



Figure 5.4: Polish inherent on stone bead(after Praud 1993).

(3) Rounding: The edges of perforations and external contours of objects are prone to rubbing when an item is worn (Fig. 5.5). As a result, their edges may be smoothed or become very rounded (Bonnardin 2012, 299).



Figure 5.5: Rounding of the perforation(after Bains 2012, 169).

(3) Faceting: Pronounced wear occasionally results in pitting on the surface of an object (Fig. 5.6) which may eventually assemble into nicks or breakage of the object (Bonnardin 2008, 300).

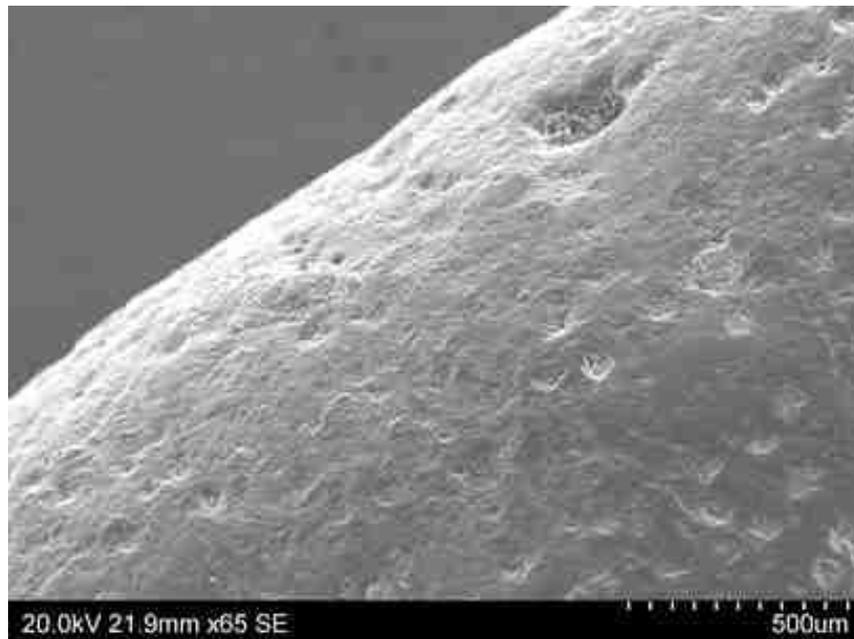


Figure 5.6: Faceting on the edge of the bead(after Bains 2012, 155).

(4) Striations: These may appear as micro-fractures and faint linear striations (FLS) perpendicular to the manufacturing marks visible within the perforation and also on the face of the bead (Fig. 5.7). They are the result of the rubbing and compression action of a string or other binding agent (Bains 2011, 167), or the result of rubbing action against a material or objects.

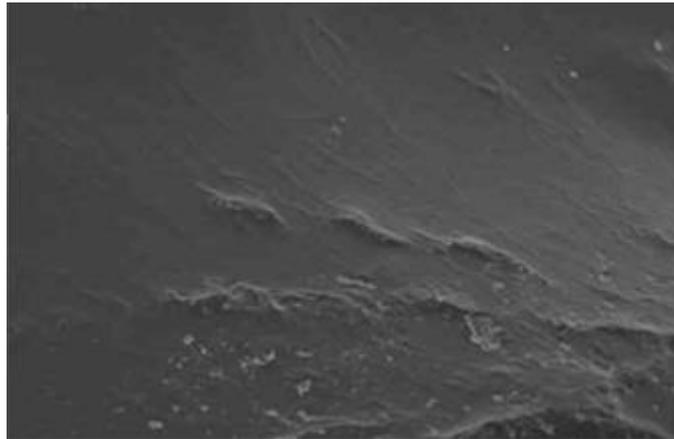


Figure 5.7: Striations visible within a perforation (after Bains 2012, 161).

(5) Grooves: The tension of a stringing agent passing through the perforation may create distinct grooves that will reach through the hole and extend onto the aperture and occasionally the face of the bead (Fig. 5.8). These are elongated depressions that end in a widening out, U-shaped profile (Bains 2012, 167). The pattern of grooves may be multiple and may indicate how the beads were fastened.

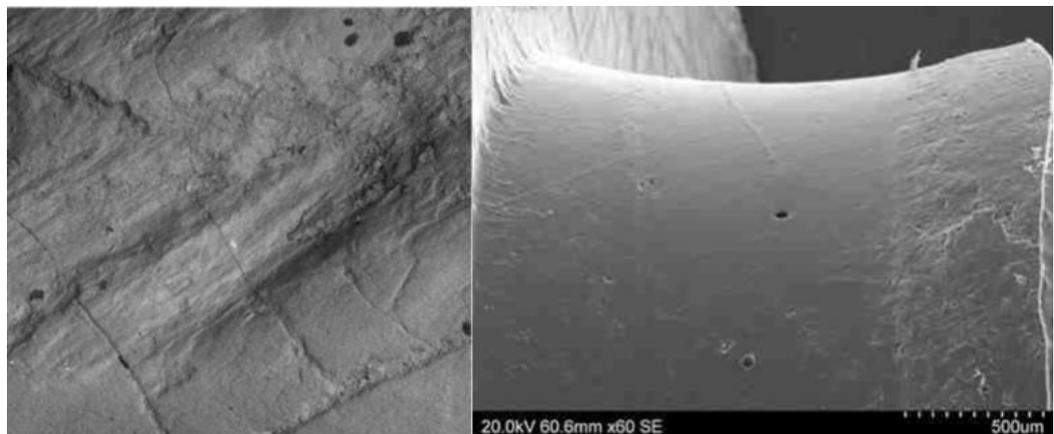


Figure 5.8: Groove Marks (a) Groove mark on the exterior of the bead (after Damick & Woodworth 2015, 607); (b) Groove mark evident on a perforation negative (after Bains 2012, 162).

(6) Indentations: The tension of the fastening material passing through the perforation may create an indentation that stretches the lip of the perforation beyond its initial morphology, occasionally extending beyond the external edges of the object (Fig. 5.9). The result is the misalignment of the perforation. This may have been caused by the bead being knotted tightly on one side (Bonnardin 2012, 299).

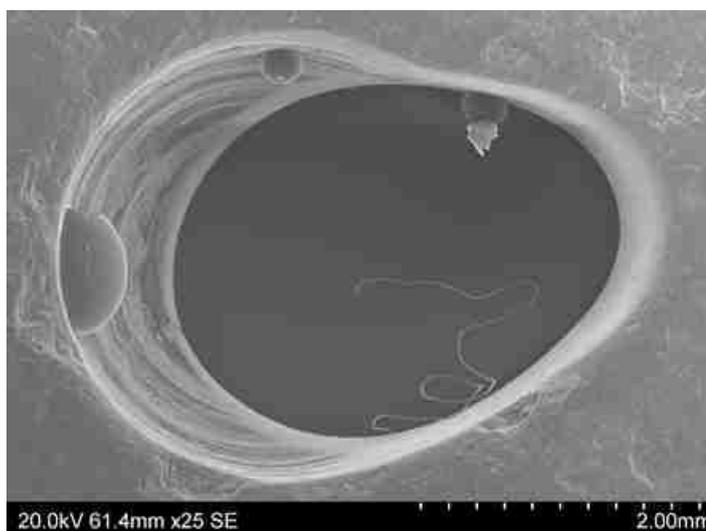


Figure 5.9: Teardrop indentation on perforation(after Bains 2012, 162).

(7) Fractures: These may appear on the surface of an object and are considered the result of material shrinkage. Irregular, linear fractures are referred to as surface crazing. Small circular patterns of fractures also occur (Fig. 5.10). These fractures may result in a flaking of material often referred to as ‘pot-lid’ fractures (Frick *et al.* 2012, 310).



Figure 5.10: Pot-lid fractures under SEM(after Frick *et al.* 2012, 311).

5.3.2 Common features of post-depositional surface modifications (PDSM)

Artefacts can be subjected to various mechanical and chemical surface changes after their deposition. These post-depositional surface modifications can often mimick the appearance of use wear and are considered important factors in discerning use-wear (Van Gijn 1990, 51).

(1) Sheen formation: Refers to a glossy surface which may cover all or part of the bead surface and may extend into the perforation (Fig. 5.11). This may also be referred to as 'staining' in the archaeological literature. It is a chemical alteration caused by a number of factors, which may include: circulation of dissolved plant material through localised groundwater, loosely defined as 'soil-sheen'; polishing by extremely fine soil particles; or exposure to sunlight (Van Gijn 1990, 53). This may also be the result of repeated handling during the post-excavation process known as 'meat-polish.'



Figure 5.11: Soil sheen on stone (after Van Gijn 1990).

(2) Fractures: May be randomly distributed across the circumference of the artefact or may appear uni-facially only (Fig. 5.12). They may also occur as cracks, pressure cones (striations radiating out from the apex) and cryoturbation retouch (mechanical abrasions on the surface of the artefact caused by the movement of sediments during freezing and thawing action) (Van Gijn 1990, 53). A number of

factors may contribute to fractures including exposure to heat, weather conditions and absorption of groundwater.

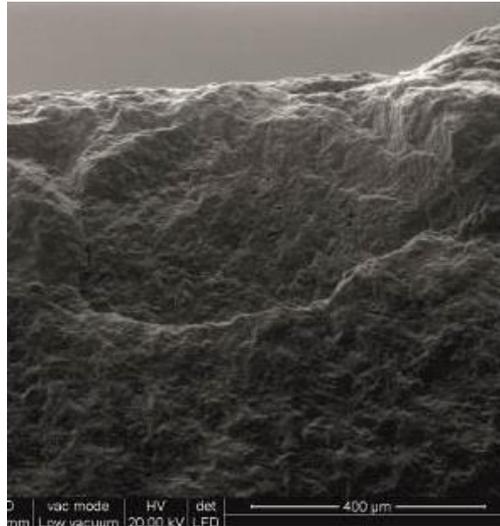


Figure 5.12: Fractures due to tumbling to simulate soil creep (after Asryan et al. 2014, 20).

(3) **Striations:** These can be easily confused with striations caused by use-wear (Fig. 5.13), but may also be caused by trampling, post-excavation processes such as sieving and washing, or soil creep and compaction (Van Gijn 1990, 54).

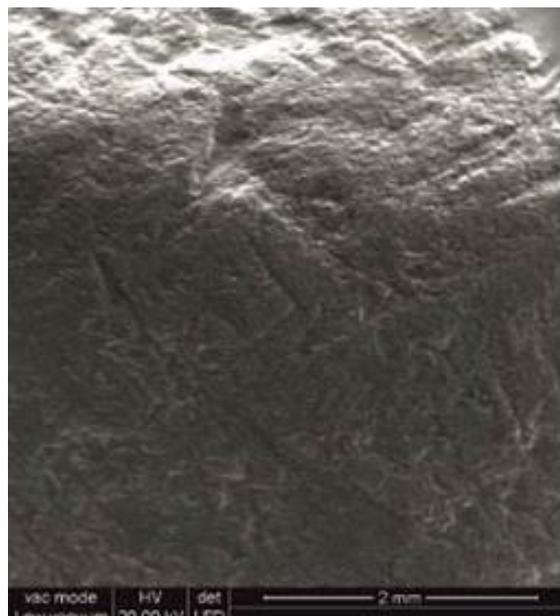


Figure 5.13: Striations from trampling (after Asryan et al. 2014, 20).

(4) Rounding: The visible rounding of edges and the face of the bead (Fig. 5.14) resulting in the loss of volume may occur following heavy pressure due to soil compaction, soil creep and trampling (Asryan *et al.* 2014, 31).

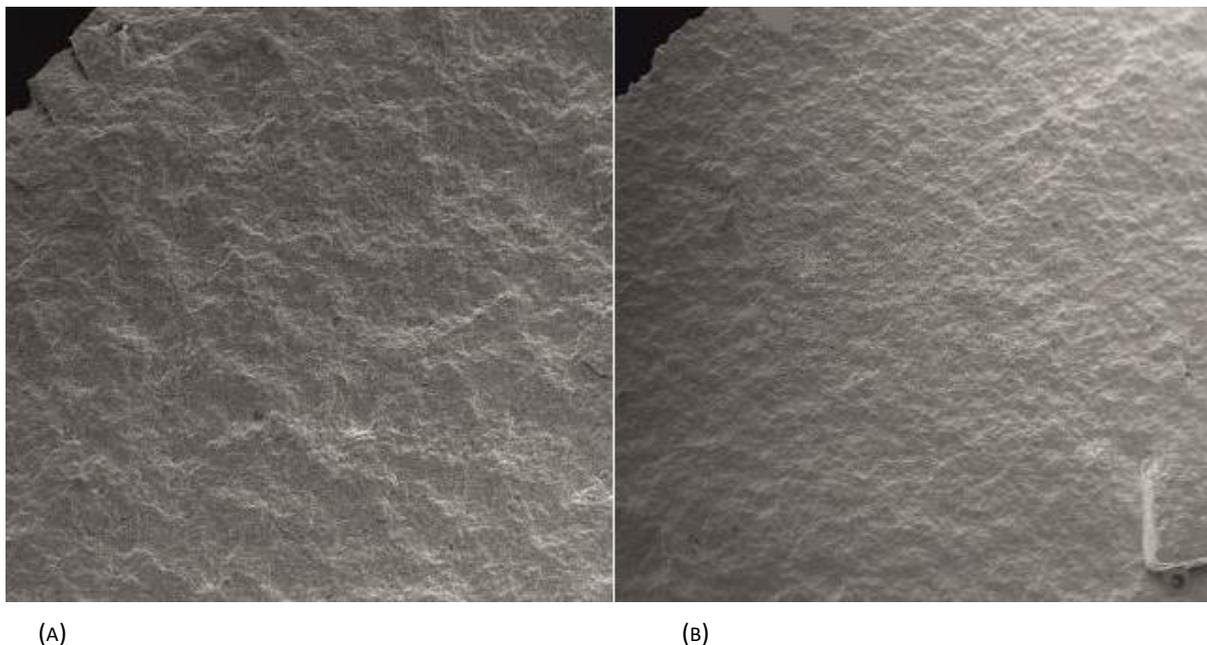


Figure 5.14: The effect of soil compaction and trampling on the surface of a stone tool (a) Before experiment; (b) After experiment (after Asryan *et al.* 2014, 20).

(5) Colour changes: Discolouration may reflect a number of changes inherent in the chemical make-up of the artefact. Coloured patinas are known to develop as a result of dehydration of the lithic matrix, subjection to a highly alkaline environment, and desiccation and exposure to the elements (such as sun, dew and temperature differences) (Van Gijn 1990, 53).

5.3.3 Common features of heat treatment

Another possible explanation for fractures and flaking visible across the surface of a bead is exposure to varying degrees of heat. Characteristics of heat exposure tend to manifest at about 200-300 degrees Celsius (Oestemo 2013, 4439). These characteristics can include colour change, rock cracking or spalling. In general, higher temperature and rapid temperature change result in more cracking, whereas low levels of spalling suggest the thermally induced stress may not have been intense enough to overcome the tensile strength of the rock. Higher levels

of thermally induced stress are required to overcome the tensile strength of some types of rock and so this evidence is assessed on a case by case basis (*ibid.*, 4439).

Patterns of spalling and fractures are sometimes observed on burnt stone bead artefacts, termed 'pot-lid' fractures (Yaroslavski and Mayer 2015, 81). Intense heat may also result in a polishing of the surface, or the flaking of the outer material (*ibid.*). Changes tend to be inherent to the lithology and can vary depending on temperature and period of exposure, making this aspect of use difficult to discern (Oestemo 2013, 4439). As a result, PDSM and heat treatment features are often indistinguishable (Van Gijn 1990, 53). This is an important factor in assessing whether beads were part of the cremation process. For example, cremated human remains are a primary constituent of passage tomb assemblages (Hensey 2014, 7). Evidence of heat exposure on passage tomb artefacts is generally considered a consequence of their inclusion in the cremation process (*ibid.*). However, exposure to heat may have occurred at a number of stages throughout the life cycle of a bead (Yaroslavski and Mayer 2015, 84). It is possible that the raw material had previously been exposed to heat, or that heat played a role in the manufacturing process (*ibid.*). Beads may also have played a role in ritual action related to fire, exposed independently for short periods of time, or for a prolonged period of exposure. It is possible that this exposure was in association with the cremation of an individual as some form of personal adornment. It is equally as likely that subsequent activity within a passage tomb resulted in exposure to heat in later centuries. Unfortunately, beads have received very little research in this respect. The only way to clarify this issue is by conducting a series of experiments simulating the effects of hypothetical burning scenarios with differences in duration, maximum temperature, average temperature and intensity of burning on numerous lithologies to create comparative datasets which will allow us to discern individual processes and reconstruct the biography of an artefact.

5.3.4 Additional constraints of SEM analysis

It has been established that there are a series of variables that have a significant influence on the formation and development of use-wear on beads. Additional factors need to be considered to ensure results are accurate: the way bead wear varies significantly from one artefact to another depending on the raw material, the position of beads on a composite piece (mechanisms of wear), as well as the type and intensity of use (developmental stages of wear) (Bonnardin 2012, 300).

Raw material: Although certain characteristics such as scars and rounding may be shared by materials with different mineral composition, the degree of development depends to a large extent on the type of rock utilised (Gibaja and Conte 2009, 93). Some materials exhibit a slow development of use-wear traces due to properties such as hardness of the material while other softer materials may develop use-wear patterns in a very short period. In experimental use-wear studies of lithics, materials such as flint and quartz have received preferential treatment and continue to be utilised as a reference for other materials (*ibid.*, 96), despite inherent differences in their physiological behaviour.

Mechanisms of wear: These may be discerned by the geometric analogy of the bead including the perforation angle and the curved radius of the face deformations (Rodiere 2011, 276). By combining use-wear results with ethnographic data, a variety of prehistoric ornaments can be reconstructed (Cristiani *et al.* 2014). Mechanisms of wear can include composite necklaces and bracelets, single piece necklaces and bracelets, embroidered bibs, embroidered garments, and belt ornaments (Bonnardin 2012, 302). The reconstruction of a sequence of wear can thus provide a previously unexplored line of evidence for behaviour and customs.

Developmental stages of wear: Diagnostic wear features have recently been used to establish development of wear stages of shell beads (Bonnardin 2012, 298). This is an important aspect as it allows us to ascertain the longevity of use of an ornament. Studies have shown that ornaments may have been altered throughout

their life cycle, with newer pieces replacing broken ones or heirlooms incorporated into a new set (Danaher *et al.* 2014, 41).

As a result of the above factors, it is almost impossible to ensure a valid, quantitative hypothesis as to the definitive use of the material. To provide definitive results, a thorough evaluation of an experimental reference collection featuring the entire range of raw materials is necessary, as we cannot directly apply the results obtained from previous experimental models fabricated from other raw materials simply because a morphological analogy exists (Gibaja and Conte 2009, 96). Additionally, a full range of technological solutions utilised in the manufacture of ethnographic ornamental objects by diverse human groups is key in interpreting the nature of use-wear traces (Cristiani *et al.* 2014).

[5.4 Archaeological case study- Knockroe bead and pendant assemblage](#)

The Late Neolithic Type 3 passage tomb at Knockroe, Co. Kilkenny is known locally as the 'Coshel.' It is situated in agricultural land close to the Linguan River (Quinlan 2011, 5), and on the border between counties Kilkenny and Tipperary (Fig. 5.15). The monument is situated on sloping ground in a landscape of low hills, dominated by the mountain *Sliabh na mBan* to the west. The surrounding landscape is pocketed with abandoned slate quarries (O'Sullivan 2003, 35).



Figure 5.15: Knockroe and the surrounding landscape (after O'Sullivan 2011).

The site consists of a roughly circular denuded cairn approximately 20m in diameter which incorporates the remains of two passage tombs located on the south side of the monument and referred to as the Eastern and Western passage tombs respectively (Fig. 5.16) (O'Sullivan 2011, 2). The southern side of the tomb rests on a built-up platform of yellow clay that extends beyond the perimeter of the tomb to form a staging area, likely to be used for ritual activity (Hensey 2015, 97). The boundary is defined by a kerb of megalithic slabs that extends across the front of the east tomb, but on the west side, a flanked winged façade opens out from the tomb and merges into the kerb (O'Sullivan 2004, 47). A variety of local stone types of different hue were utilised in its construction, considered an expression of architectural symbolism (O'Sullivan 2009, 10). Artwork occurs extensively throughout both tombs, on at least 30 kerb stones (O'Sullivan 2004, 47). The east tomb is aligned to rising sun at mid-winter solstice, with the west tomb aligned to sunset on the same day (O'Sullivan 2004, 47). The monument is in a state of deterioration as a result of a number of factors including tree growth, weathering, and human activity (O'Sullivan 2011, 6).



Figure 5.16: Laser scan of the Knockroe Monument (after kkap.ie 2009).

Although first noted by the Ordnance Survey in the 19th century, the site escaped wider recognition until archaeological investigations were undertaken between 1990 and 1995 (O'Sullivan 1993, 1996, 2003, O'Sullivan *et al.* 2010). The site was deemed vulnerable and a conservation plan was commissioned by the Commissioners of Public Works to address structural stabilisation and necessitate visitor access (Quinlan 2011, 3). The development of this conservation plan facilitated further excavations in 2010 (O'Sullivan 2011, 2).

Both tombs contained impressive quantities of cremated human bone, pottery sherds that range in date from the Late Neolithic to the Early Bronze Age, antler and bone pins, pendants, beads, flint scrapers, struck flint, bone spacers and decorated bone artefacts (O'Sullivan 2011, 2).

5.5 Analysis of the Knockroe stone bead assemblage

Thirteen stone beads and pendants from a range of contexts were recovered from Knockroe at the time of this analysis, although post-excavation analysis continue to identify more examples (Table 7). These artefacts were assessed by this author in 2016 to assess potential evidence of use-wear macroscopically prior to a microscopic investigation.

Small Find No.	Description	Context	Context description
188	Sandstone pendant	C.151	Disturbed outer compartment of the east tomb in the same context as a bone spacer, and flint rolled pebble
189	Mudstone bead fragment	C.144	Recovered at sillstone 4 at the entrance to the right-hand recess, possibly in association with Carrowkeel Ware
323	Steatite pendant	C.208	Recovered from the inner chamber of the western tomb against orthostat R8 with pottery sherds and enclosed by undisturbed cremation deposits
339	Steatite bead	C.172	Area 2 south of the tomb in association with Neolithic artefacts
352	Steatite bead	C.210	Passage in the west tomb in front of orthostat 10
414	Mudstone pendant	C.216	Recovered from the uppermost layer of the cairn around the entrance to the west tomb in association with quartz fragments and Neolithic and modern artefacts
432	Slate bead	C.210	Passage in the west tomb in front of orthostat 10
442	Steatite bead	C.172	Recovered from the chamber of the west tomb in front of orthostat 7

445	Jasper bead fragment	C.172a	Passage of the west tomb between orthostats 4 and 5
600	Steatite bead	C.234	Deposit of material that originated within the tomb but leaked through a gap in the sill and orthostat 1 including cremated bone, and other passage tomb artefacts.
614	Shale pendant	C.236	Between floor slab L5 and L6 in the inner compartment, above packing stones in association with cremated human bone and additional Neolithic artefacts including bone spacers
649	Sandstone pendant	C.210	Passage in the west tomb in front of orthostat 10
2000	Steatite bead	C.218	A dense area of cremated remains in the middle compartment and extending into the passage of the west tomb, containing a mix of artefacts including bone and antler pins, beads, pendants and spacers

Table 7: Table of beads from Knockroe passage tomb (by author).

5.5.1 Equipment and methodology used

The analysis of the Knockroe beads and pendants was facilitated by Prof. Muiris O’Sullivan at UCD over a four-day period in March 2016, with the assistance of geologist Dr. Patrick Orr. Initially, the entire assemblage of beads was examined macroscopically, over one day, and the specimens were catalogued (Appendix A) including information relating to their appearance and context. Possible use-wear indications were evident on eleven of the beads at this stage. These were then subjected to microscopic examination, employing the Optical Microscope (OM) and the Scanning Electron Microscope (SEM). Six of these 11 beads produced discernible use-wear elements.

5.5.2 Identifying wear patterns on beads

The methodology utilised to identify wear patterns on the Knockroe assemblage was adapted from methodologies established in previous bead use-wear studies (Bains 2012; Bonnardin 2012; Cristiani *et al.* 2014). Areas that may be indicative of use-wear traces are often referred to as ‘stigma’ throughout the literature (Bonnardin 2012, 299). Stigmas on the Knockroe material identified from comparisons with previous use-wear analysis studies. The location of a stigma was observed on both faces (F1 and F2), and both edges (E1 and E2), with each stigma numbered and information related to morphology, extent and organisation noted. F1 was identified by establishing the point of higher penetration for perforation and E1 was to the left of F1. Instances of stigma were recorded on schematic diagrams (Fig. 5.17) and images were captured and used for comparative purposes.

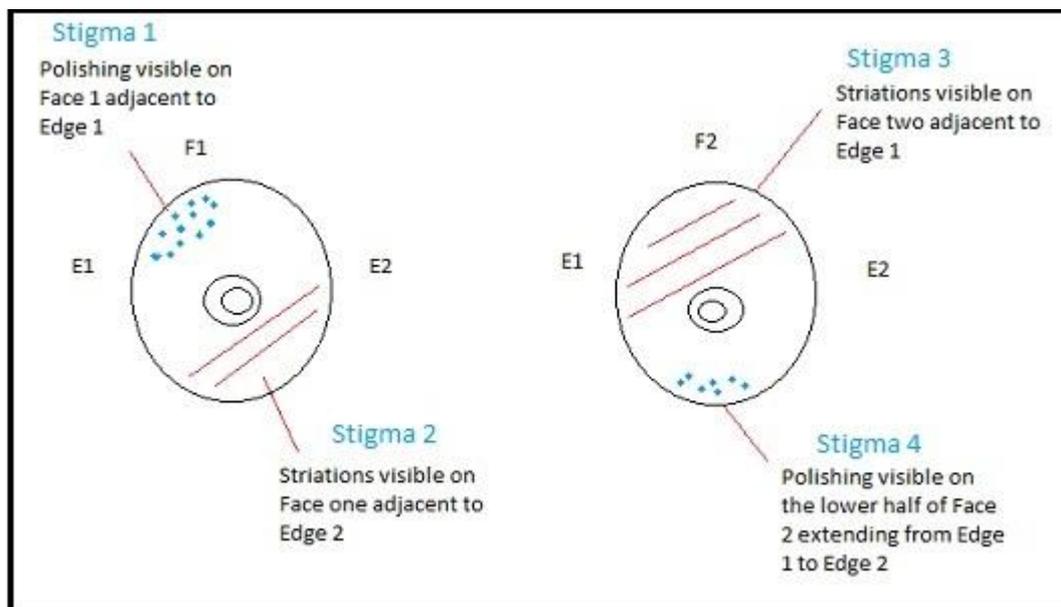


Figure 5.17: Example of schematic diagram recording stigma on bead faces (by author).

5.5.3 Optical microscope methodology

The 11 Knockroe beads and pendants were examined using hand-made plastic mounts under a Leica EZ4 HD at a range of magnifications. This microscope allowed the beads to be examined under various reflections of light which

facilitated high quality illumination and contrast of use-wear features for easier identification at low magnifications. Images of possible stigma were captured using the integrated HD digital

camera and noted on schematic diagrams for comparison with SEM images. This examination was carried out over a one-day period, recording images of the beads at a range of angles, to facilitate clearer assessment of the area within the perforation.

5.5.4 SEM methodology

For this study, the Hitachi TM-1000 SEM-EDX was employed for examination of the beads at a higher magnification over a two-day period. The beads were mounted individually on carbon-coated sample holders but were not coated in carbon as there was a possibility that the beads might be affected. Typically, studies of this nature utilise silicone casts of the beads to obtain clear negatives of the use-wear features from the shape of the bead and the interior of the perforation (Bains 2012, 35). These casts are usually coated in carbon to facilitate the production of clearer images using the standard SEM. This allows an enhanced degree of examination and increased field of vision as in many cases the depth of the perforation in an artefact may render it impossible to view the interior in great detail (Gwinnett and Gorelick 1978, 51). It was decided that the manufacture of these casts was not appropriate because in some instances, they can cause staining on the artefacts. The ESEM (Environmental Scanning Electron Microscope) would have been a more preferable but was unavailable at the time. Images at various magnifications were captured of possible use-wear stigma for comparative study with the Optical Microscope images.

5.5.5 Analysis of the images

The stigma documented on the images from microscopic analysis were compared and contrasted to images of an established experimental reference collection of stone beads provided by previous investigations (Bains 2012). Previous studies of

post-depositional alterations of stone artefacts acted as a reference for evaluating taphonomic modifications and differentiating them from use-wear traces (Fischer 1995, Asryan *et al.* 2014).

5.6 Evidence of use-wear on the Knockroe assemblage

Of the 13 beads and pendants assessed from the Knockroe passage tombs, the optical microscope identified 11 artefacts with possible wear patterns. Of these six specimens produced discernible evidence of use-wear. The remaining seven beads had no apparent evidence of wear under the scanning electron microscope. The characteristics of wear varied among the six modified examples and included visible rounding of the periphery of the perforation; limited compression marks; and the obliteration of manufacturing striations within the perforation interior. The results of the investigation are detailed below by excavation find number.

5.6.1 Pendant 188

This tiny sandstone pendant was recovered with a number of bone spacers and fragments and a polished flint pebble in outer compartment of the eastern tomb. It is a small axe-shaped pendant, dusky red in colour with naturally occurring, vertical, coloured striations across the entirety of the object (Fig 5.18a). This artefact displayed virtually no manufacture marks within the perforation despite the high degree of preservation. Textile fibres and dried residue were observed on F1 directly beneath the base of the perforation (Fig. 5.18c). The textiles, fibres and residues initially seemed promising. However, EDX confirmed the textile fibres to be modern cotton, and the residue is likely a modern gluing or cleaning agent. It is likely, therefore, that this stigma is the result of post-excavation practices, possibly cleaning or cataloguing. The cotton may have adhered to the stone bead, and although removed, was not cleaned entirely.

The face and edges of the pendant are highly polished (Fig. 5.19) with some instances of sheen as observed in Pendant 414. There are extremely faded examples of vertical striations within the perforation (Fig. 5.18d), which appeared

in the form of cracks and furrows (Fig. 5.18b). The chalky exterior is indicative of burning.

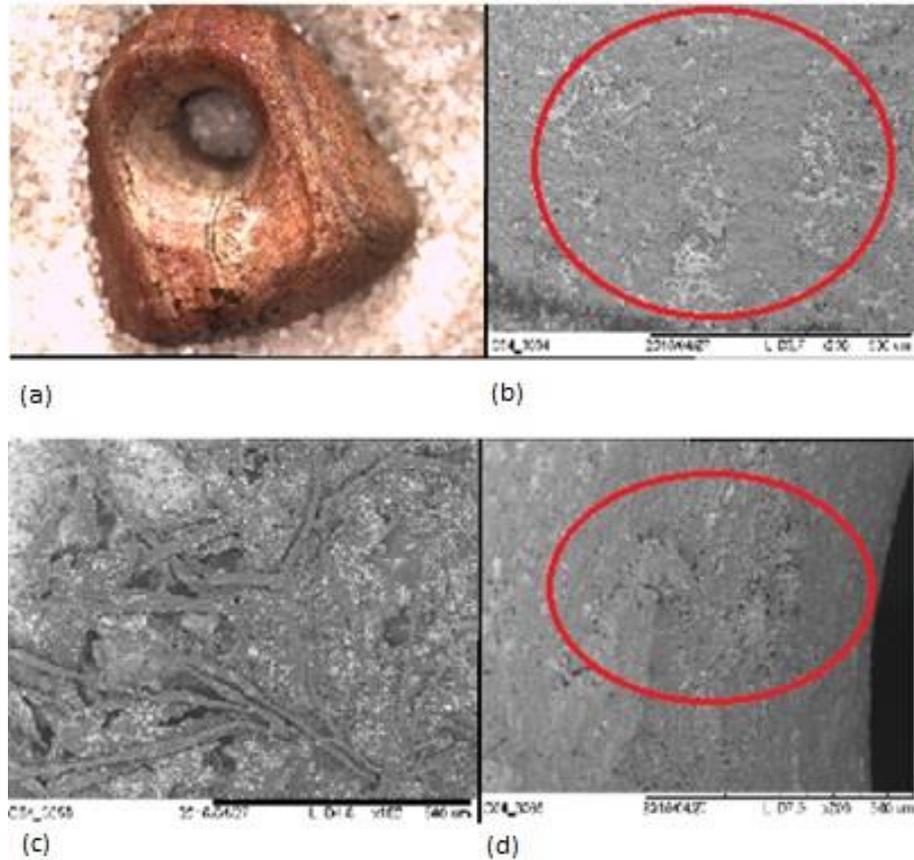


Figure 5.18: Pendant 188 (a) no wear marks evident on the perforation, (b) groove marks within the perforation, (c) fibres visible on the surface, (d) abrasion marks within the perforation (by author).

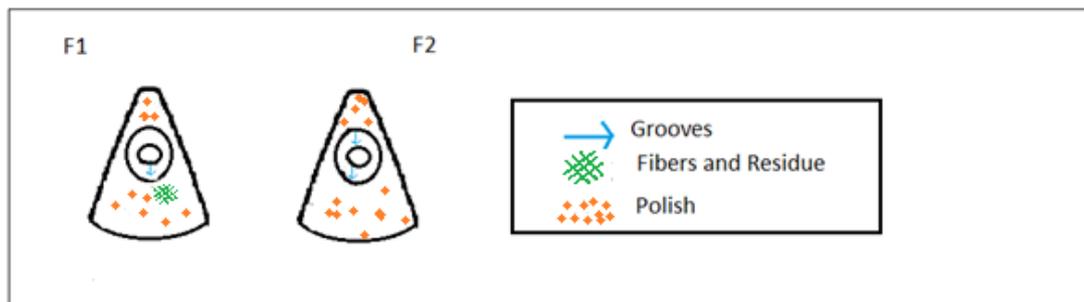


Figure 5.19: Stigmas on Pendant 188 (by author).

5.6.2 Pendant 323

This pendant was recovered from the inner chamber of the western tomb against orthostat R8 in an undisturbed cremation deposit. It is a grey macehead shaped pendant covered by a rust coloured patina that is currently flaking away. The pendant retains good quality manufacture marks (Fig. 5.20a) and exhibits more pronounced cracks and worn grooves than any of the other examples (Fig. 5.20b/c). This is interesting as there is little to no evidence of wear visible surrounding the perforation. The possible evidence of wear on the perforation occurs on Face 2 to the right side at the base. There are also miniscule cracks visible across the entire surface of the pendant (Fig. 5.21).

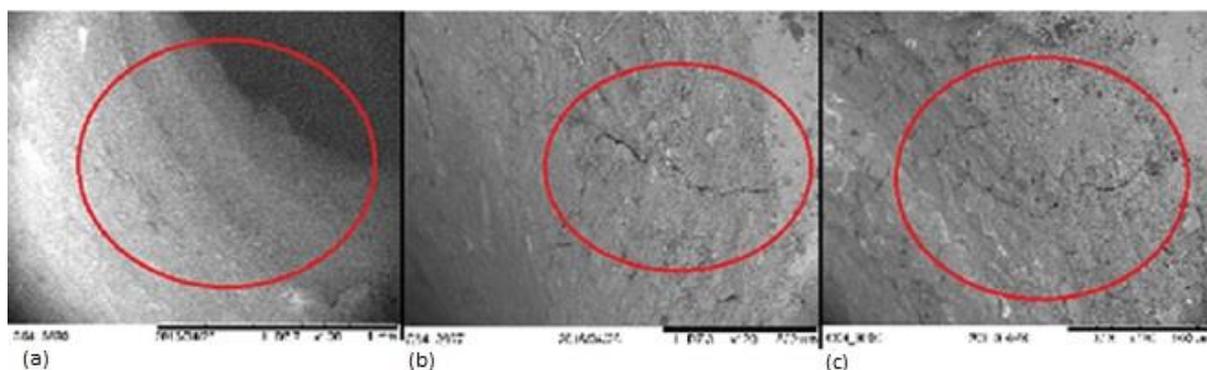


Figure 5.20: Pendant 323 (a) manufacture marks, (b) cracking evident within the perforation, (c) cracking at the perforation aperture (by author).

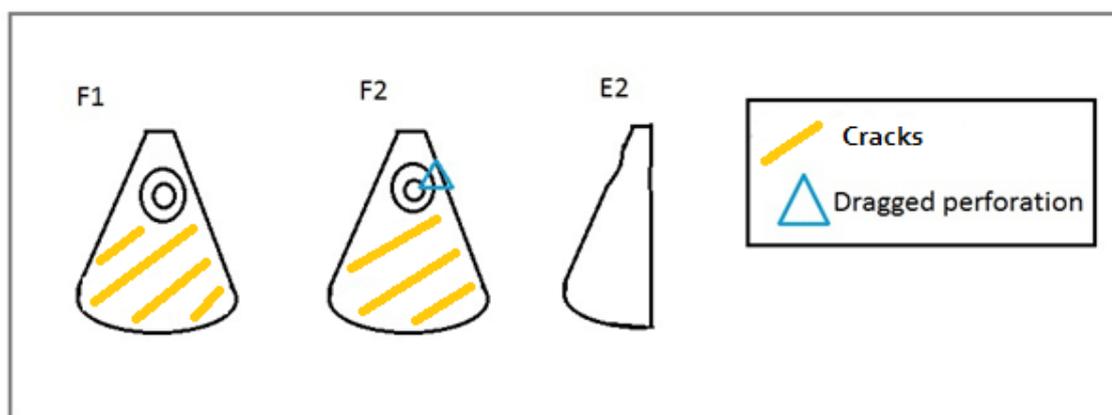


Figure 5.21: Stigma identifiable on Pendant 323 (by author).

5.6.3 Bead 339

This bead was recovered from an area slightly south of the tomb containing bone spacers and other Neolithic artefacts. This round stone bead is grey in colour with a cream coloured mottling on the exterior (Fig. 5.22). The internal fabric visible through one area of cracking is rust coloured. The bead is well polished and has similar elements of a gloss as seen on some other examples. F1 has some areas of cracking and spalling visible (Fig. 5.22b), with sections of the bead deeply cracked and pitted (pot-lid fractures). The exterior appears to be flaking; this extends within the perforation. Either side of the hole at F1 is marred by deep indentations (Fig. 5.22a). These extend within the perforation in the form of grooves and faint linear striations (FLS).

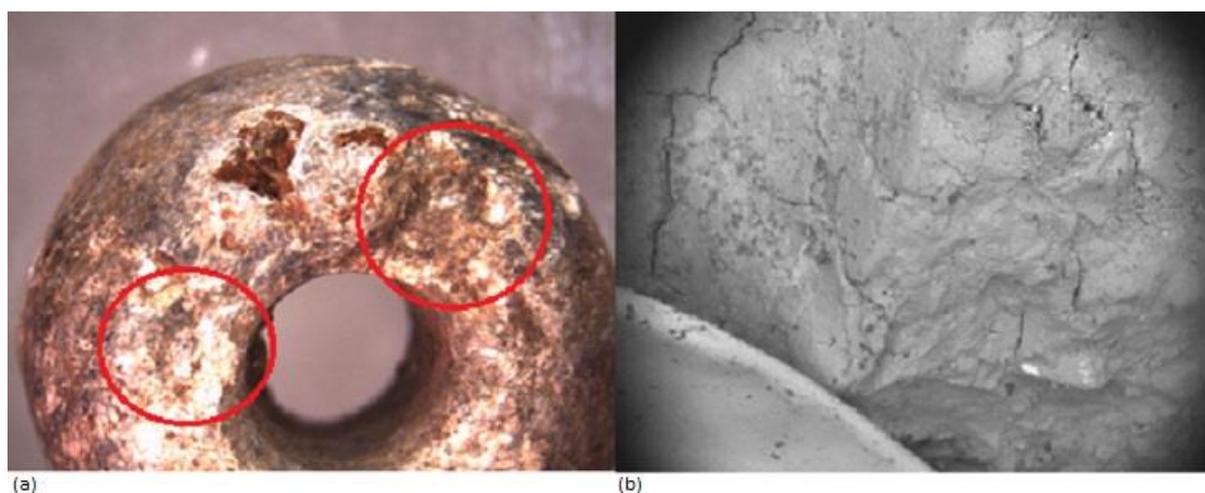


Figure 5.22: Bead 339 (a) cracking on the surface of the bead F1, (b) semi-circular pitting on the surface (by author).

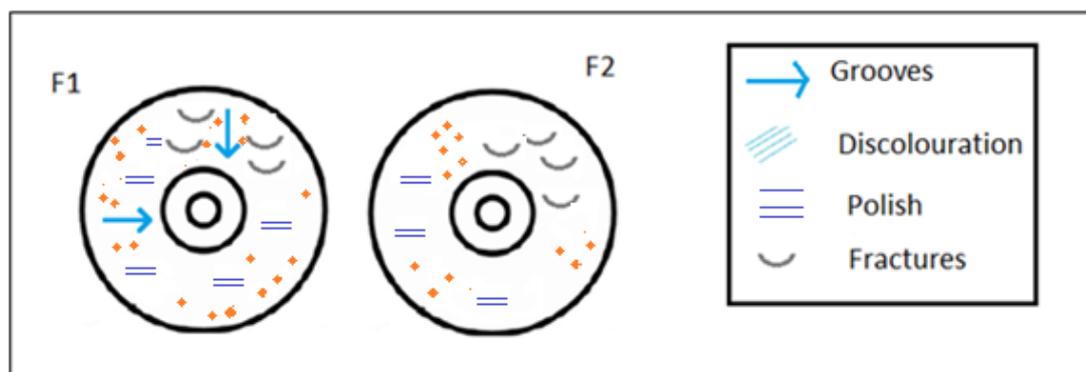


Figure 5.23: Stigmas identified on Bead 339 (by author).

5.6.4 Pendant 414

This mudstone pestle pendant was recovered from the entrance area of the western tomb in association with quartz fragments and Neolithic artefacts. Pendant 414 was recovered in association with Neolithic artefacts including bone spacers. Two of these artefacts demonstrated very developed wear traces. It is pestle-shaped and primarily grey in colour. The face and edges of the pendant are covered in a cream coloured patina (Fig. 5.24a), with some areas exhibiting a highly glossed sheen (Fig. 5.24b). This patina and sheen extends into the perforation in parts. The pendant displays very developed elements of use-wear across the face of the bead and also within and surrounding the perforation. Indistinct cracks are visible across the entire surface of the artefact. The most obvious stigma of wear is a missing segment of the artefact visible to the right-hand side of the perforation (Fig. 5.24d). This wear is mirrored on the underside of the

pendant (Fig. 5.24e), although it is much less developed. Face 2 appears much flatter than the front face. The interior of the perforation displays faint concentric linear striations. The top of the interior of the perforation is marred by possible furrows (Fig. 5.24c). Abrasion facets are apparent in this area and reflected on both F1 and F2 (Fig. 5.25).

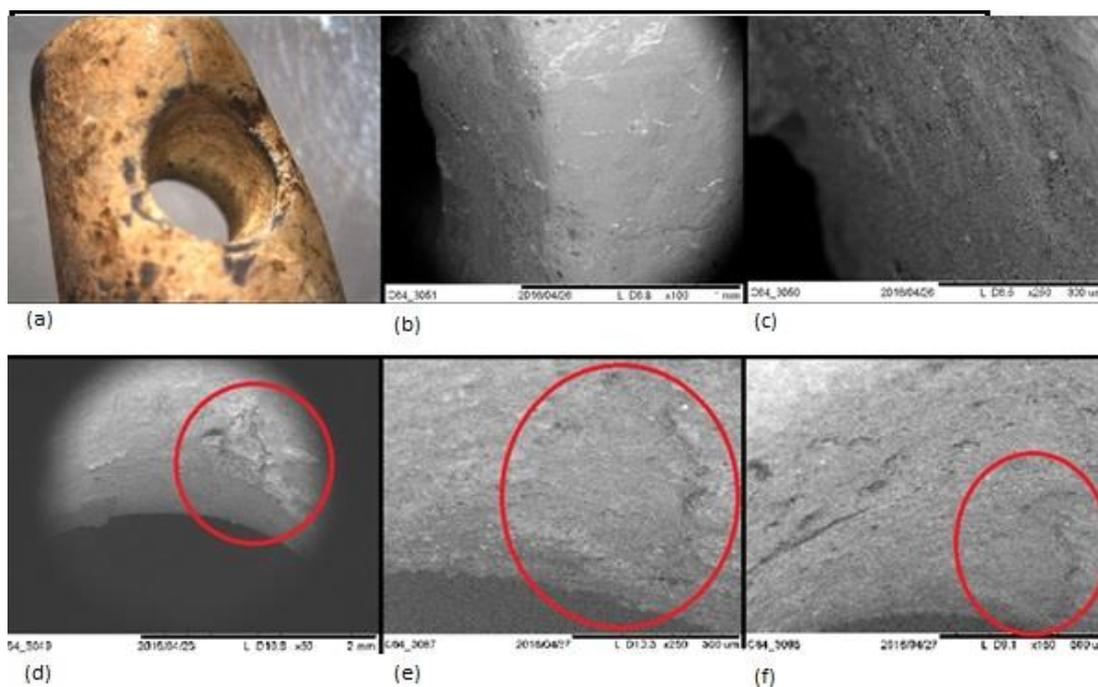


Figure 5.24: Pendant 414 (a) Wear at the edge of the perforation, (b) glossy sheen, (c) pitted surface, (d) wear on perforation F1, wear on perforation F2 (by author).

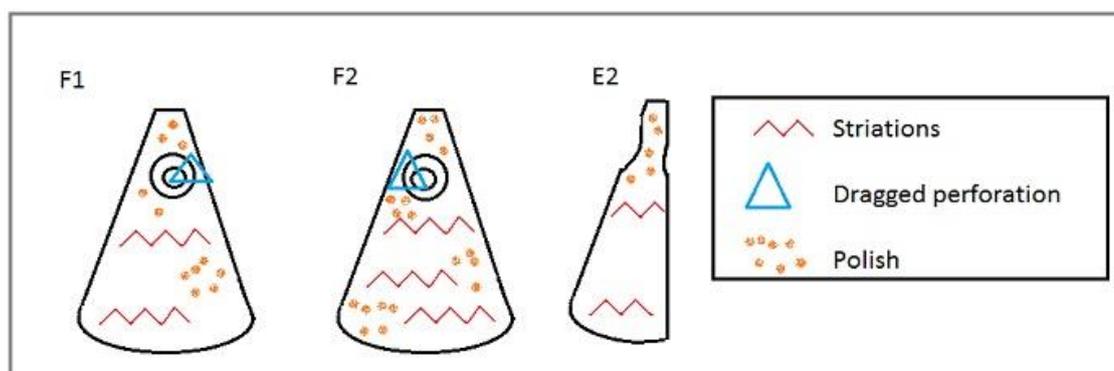


Figure: 5.25 Stigmas identifiable on Pendant 414 (by author).

5.6.5 Bead 432

This tiny slate bead was recovered in the passage of the western tomb in front of orthostat 10. Most of the face of this disc bead is a pinkish colour, covered by a highly glossed surface with grey patches across the entire face topography (Fig. 5.26). It is missing a large portion of material from the right-hand side on Face 1 Edge 2. Dragging is evident at the top of the perforation, apparently related to a number of compression marks extending across the face of the bead (Fig. 5.26a).

This dragging is also mirrored on the underside of the bead, with markedly fewer compression marks (Fig. 5.26b/c).

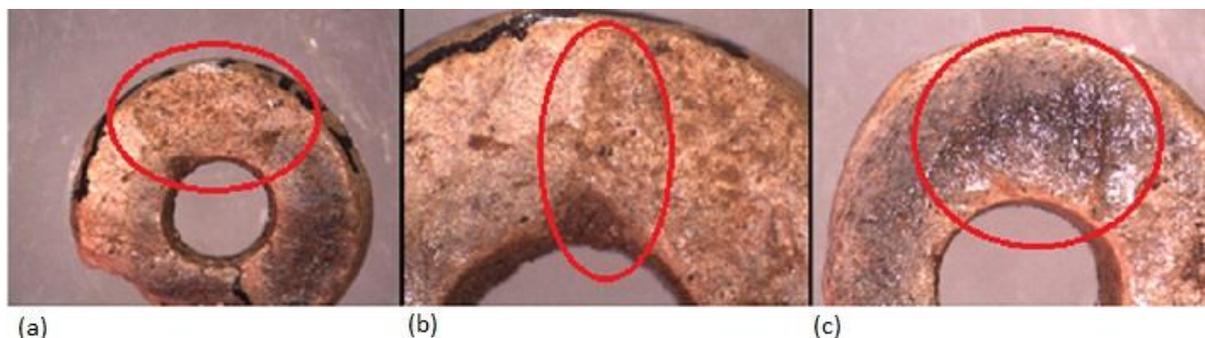


Figure 5.26: Bead 432 (a) compression mark F1, (b) possible compression mark F2 base, (c) compression mark F2 (by author).

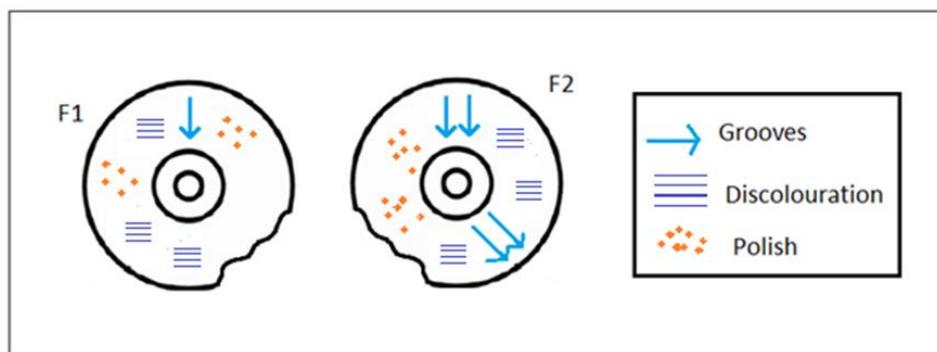


Figure 5.27: Stigmas identified on Bead 432 (by author).

5.6.6 Pendant 614

This hammer-shaped pendant is grey in colour with a flaking surface. It was recovered in the internal compartment of the western tomb between L6 orthostat and the floor slab. This pendant was associated with another bead fragment, a number of spacers and a bone pin. The pendant displays distinct flaring of the perforation lip at the top portion of the perforation (Fig. 5.28). It is markedly more visible on Face 1 (Fig. 5.28b) than Face 2 (Fig. 5.28a). It is situated adjacent to Edge 1 at Face 1 and closer to Edge 2 at Face 2. The surface of Face 2 appears markedly flatter than Face 1. The entire surface of the pendant features tiny micro-striations visible at a high degree of magnification (Fig. 5.28c). There are very developed manufacture traces visible within the perforation.

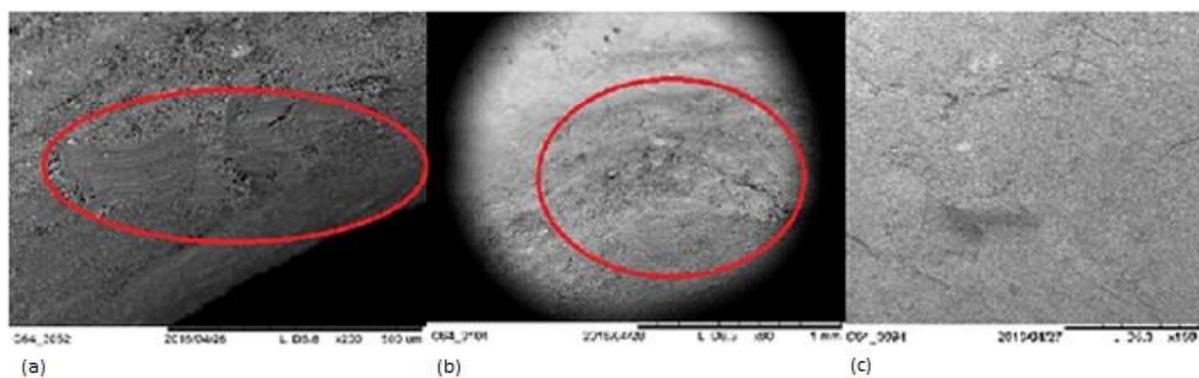


Figure 5.28: Pendant 614 (a) wear along the top of the perforation F2, (b) wear on the lip of the perforation F1, (c) Micro-fractures across the face of the pendant (by author).

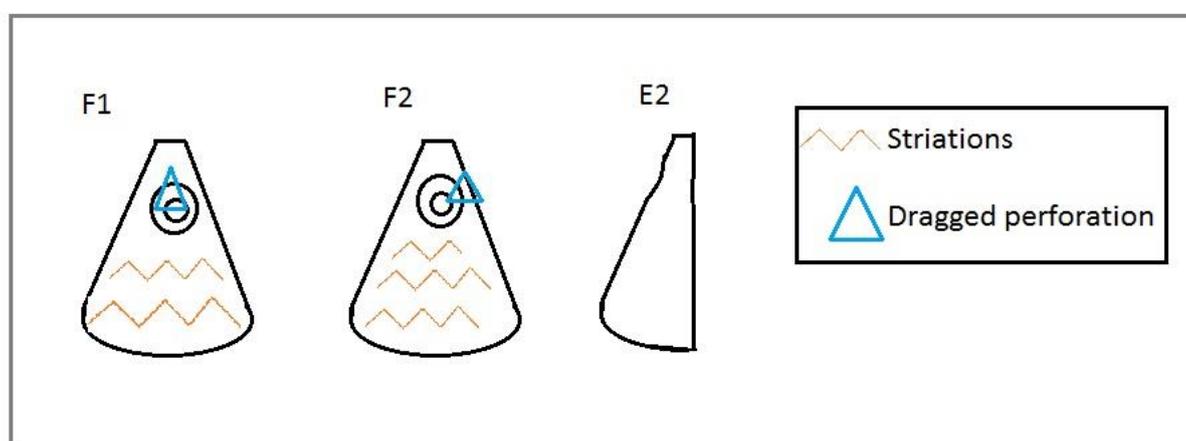


Figure 5.29: Stigma identified Pendant 614 (by author).

[5.7 Discussion of the Knockroe bead assemblage analysis](#)

The main feature of wear exhibited by the of beads and pendants from Knockroe is the scarcity of manufacture marks around and inside the perforation (Table 8). Manufacture marks made within the perforations are often erased by rubbing and abrasion caused by use, particularly by their association with a stringing or binding agent. The poor preservation of manufacture marks is evident on five of the artefacts (414, 188, 432, 339, 323). Only one bead (614) retained good quality manufacture marks. The preservation of clear manufacture marks may also be determined by the properties inherent in the raw material. Softer materials wear easier and result in fainter manufacture marks. If the marks were erased due to the soft properties of the stone, we would expect to see an overall rounding of the

additional features such as the perforation aperture and the edge of the artefacts, which does not occur on these examples. In this instance, the removal of manufacture marks would suggest significant use prior to deposition for most of the artefacts, despite their well-preserved condition.

Bead/Pendant	Discolouration	Polishing	Roundin g	Facetin g	Striation s	Grooves	Indentation s	Fracture s	Manufactur e Marks
188	X	✓	X	X	✓	X	X	X	X
323	X	X	X	X	X	X	X	✓	✓
339	✓	✓	X	✓	✓	✓	✓	✓	✓
414	✓	✓	X	X	✓	✓	✓	✓	X
432	✓	✓	X	X	X	X	✓	✓	X
614	✓	X	X	X	X	✓	X	✓	✓

Table 8: Table of stigma identified (by author).

The question related to these observations is whether these artefacts were utilised daily by the people whose remains were deposited in the tombs, or whether these items were reserved for ceremonial occasions, which may also have included their interment in the passage tomb. The level of wear would suggest that these six beads were utilised over a considerable period and were not manufactured as a specific form of mortuary dress. There is also the possibility that the mortuary personal ornamentation may have included heritage elements that had been recycled and incorporated into new items over time, which would explain the varying degrees of wear on related artefacts. In turn, there is the possibility that these artefacts are primarily associated with alternative ritual actions related to the tomb, and not related to the interred human remains.

As well as a high degree of wear, five of the beads (414, 188, 432, 614, 323) displayed a range of use-wear factors that may indicate heat exposure ranging

from discolouration to micro and macro cracks and pot-lid fractures. Beads 432, 323 and 339 are enveloped by rust coloured patinas that appear to be flaking away on the surface. Bead 432 displays grey discolouration in patches across its dusky pink surface, not concentrated to a particular area. Bead 339 also displays evidence of pot lid fractures on Face 2 Edge 1 and cracking, likely to be the result of prolonged exposure to heat. Beads 414, 323 and 614 are covered in fine micro-fractures across their entire face often extending into the perforation. Numerous bone spacers similar to those recovered at the Mound of the Hostages (Chapter 2) were also recovered at the site (O'Sullivan pers. comm). It is curious that most of the spacers recorded from the site are also discoloured from heat exposure. It appears likely that beads, spacers and other passage tomb artefacts may have played a role in ceremonial rites related to fire. They may have been exposed to fire independently, as secondary ritual activities related to fire, or as inclusions in the cremation process.

It is well documented that cremated bone forms one of the primary constituents of the passage tomb assemblage (Hensey 2014, 7). The purpose of the cremated remains recovered from passage tomb sites are not well understood despite extensive research into the phenomena. It is suggested that their inclusion in the monument may be reflective of some category of ancestor worship or that the inclusion of these remains are a means of tying these individuals and their descendants to the landscape. It has also been considered that these remains are reflective of the Neolithic funeral rite (Cooney 2000, Hensey 2015). The adornment of the body for the funerary includes in many societies mortuary garments, of which beads can be a decorative element (Parker-Pearson 1999, 9). It has been generally assumed that evidence of heat exposure on beads and pendants are a direct result of their inclusion in this rite (Hensey 2014, 7). Further experimental analysis would be required to prove anything definitively. This 'cremation' experiment would consist of the construction of a funeral pyre and the insertion of beads and pendants of various materials into the pyre. Each bead would be marked for later referencing. They would be inserted in the beginning

with organic remains to simulate cremation on the body and then added to the pyre and the organic material at various stages throughout the process. The beads would be removed, and the results documented using images. These images could then form an experimental reference collection for comparative analysis of bead artefacts. This analysis may indicate whether beads with evidence of heat exposure were included in the mortuary practice of cremation, whether they were removed at a particular stage of the process, or whether they were exposed to fire independently and not in association with the cremation of human remains.

Some beads display individualised elements of wear that were not reflected in other examples. Of particular interest is the distribution and orientation of indentations on Bead 432 which would indicate that a tightly bound stringing agent fastened the bead to a garment utilising the perforation. This bead displays indentations concentrated across two distinct sections at the upper portion of both faces. This may indicate that the bead was employed as an element of embroidered beadwork by interlacing a number of beads as shown (Fig. 5.30).

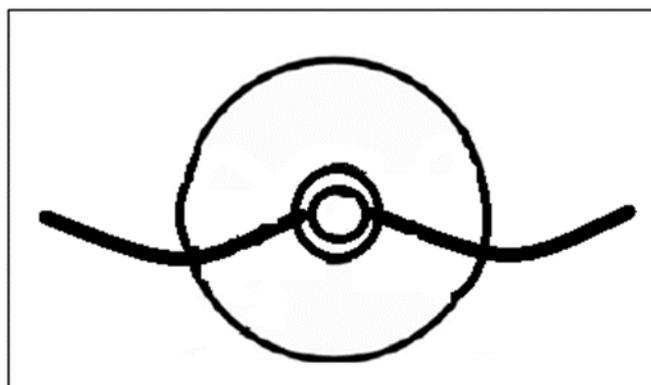


Figure 5.30: Reconstruction of Bead 432 fastening system (by author).

This disc shaped bead is the smallest of the entire collection with the widest perforation, which may be significant. The size and shape of the bead may have facilitated a neater design if utilised as an element of embroidered beadwork.

Additionally, two pendant artefacts (414, 614) recovered separately from the interior compartment of the western tomb and associated with additional beads

displayed individual elements of wear. The apertures of both perforations display a dragging effect caused by the compression of the stringing agent to one side of the hole. The nature and distribution of use-wear traces coincide with functional modifications previously observed on ornaments utilised as composite pieces such as necklaces or bracelets. The splayed nature of this wear suggests that these examples hung loosely next to additional items with little constraint on the artefact. These pendants also retained more developed traces of wear around the perforation of one face, with less developed traces on their secondary face. This is accompanied by the loss of volume and pitting on the back face as a consequence of direct rubbing against additional beads. As a result, we can infer that these pendants were arranged to be placed on the fringes of a bead arrangement (Fig. 5.31) and not the central focal point as is generally presumed. This requires us to re-evaluate the presumed role of these two artefacts as pendants. Pendants are generally depicted in the literature as a focal or central piece, however, these artefacts appear to be a feature of the periphery of a composite item.

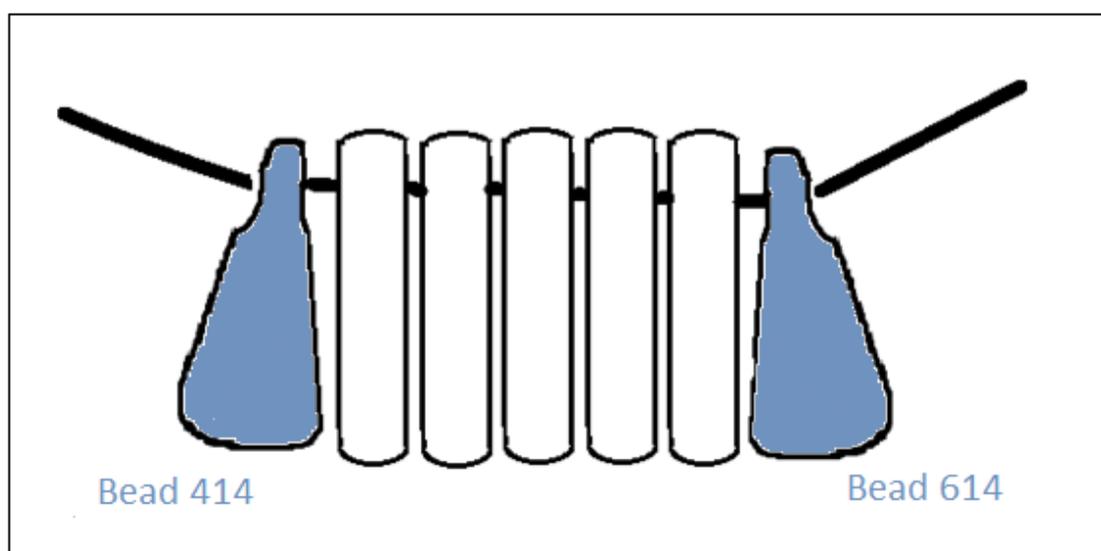


Figure 5.31: Reconstruction of composite piece featuring Beads 414 and 614 (by author).

Most of the Knockroe beads and pendants (414, 188, 432, 339, 614) that displayed use-wear were recovered from contexts with additional Neolithic artefacts. These associated artefacts raise some important considerations. Are these items

elements of a larger more composite piece of personal ornamentation as demonstrated below (Fig. 5.32) Or is it more likely that these items are individual depositions? It is probable that beads 414 and 339 are in some way related due to their associated context and similar degree of wear, although it is impossible to discern this for the other examples. It is curious that the majority of the Knockroe assemblage that display evidence of use-wear were recovered from the western tomb.

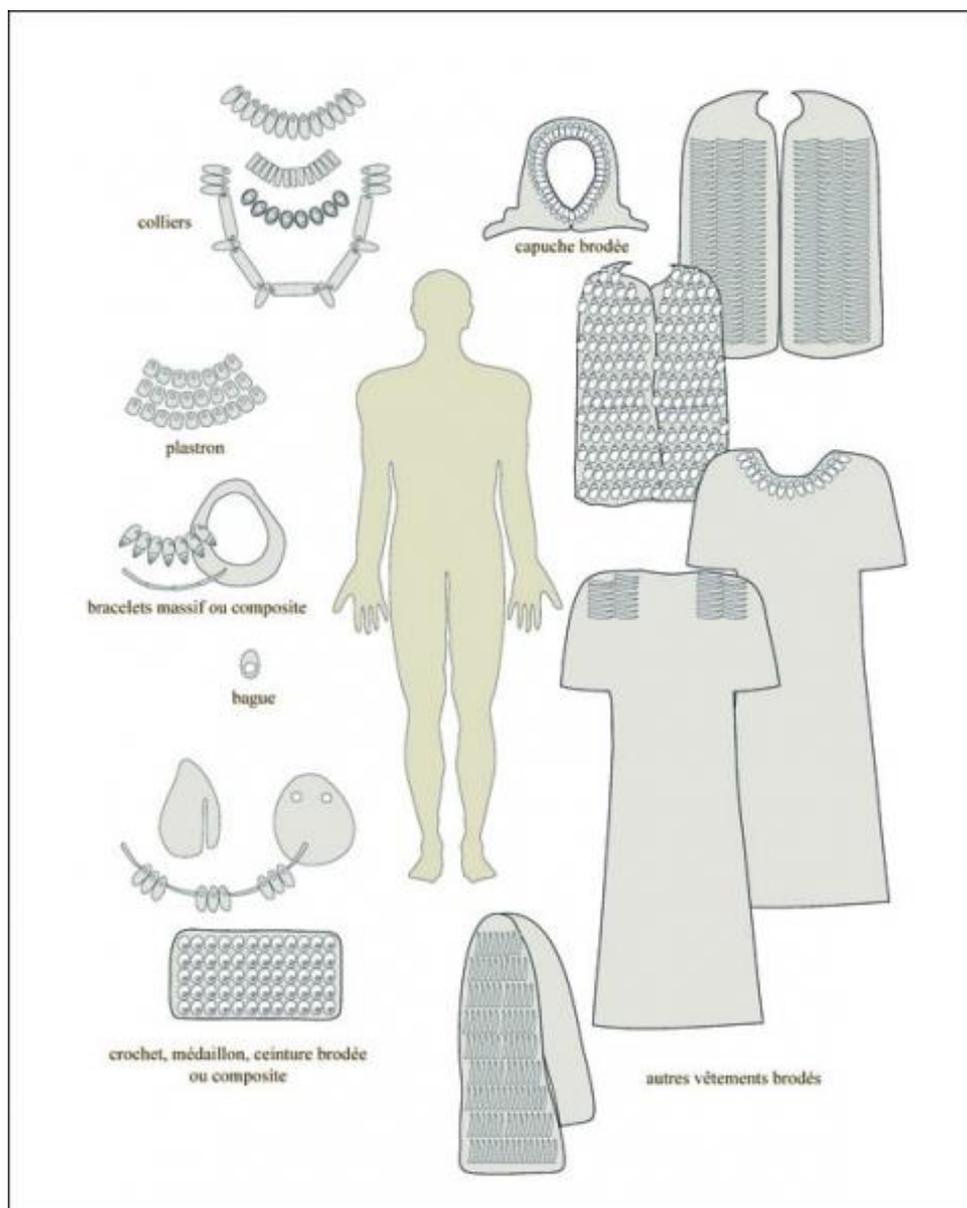


Figure 5.32: Possible composite items utilising beads (after Bonnardin 2012).

[5.8 Conclusions](#)

Many valuable insights were attained through the analysis of the Knockroe assemblage. The stone beads analysed indicate that a significant number (over 40%) display identifiable aspects of use-wear. In instances where evidence of wear was not observed, in some cases, it may be likely that use-wear did not develop because the material is hard and resistant in comparison to other beads of softer more malleable stone. Each bead will display varying characteristics of wear dependent upon physical and chemical traits inherent in the lithology.

By identifying various markers of wear, it can be inferred that these six items were utilised prior to their interment in the tomb. It seems that these beads were not manufactured specifically for inclusion in the megalith but were in use over a considerable period. These may have been used every day as personal ornamentation. It is also possible that beads in Neolithic society had diverse biographies determined by an individual wearer's social and individual identity, and the culture of the period. Beads may have played a greater role in the lives of certain individuals rather than others. They may have been reserved for ceremonial occasions, and as such, the examples that displayed wear had longer life histories. The sporadic evidence of wear may also have been the product of the incorporation of heirloom beads into newer, more composite, pieces.

Six of the assemblage also produced evidence of heat exposure. Further analysis is required to establish whether their inclusion is indicative of manufacture, independent artefact ritual, or cremation. Each possibility will produce varying results dependent upon the lithology, period of exposure and temperature and, as such definitive conclusions could not be reached through this initial analysis. However, the fact that a large percentage of the artefacts display possible evidence of heat exposure provides an incentive to explore this avenue through experimental means.

Results of analyses of the pendants has highlighted the misconception that has been perpetrated in personal ornamentation from passage tombs, i.e that these

'pendants' represent a focal piece around which the composite ornament is constructed. Evidently, these pendants are more likely to have formed peripheral elements of a composite piece. We may be required to re-evaluate the significance of beads versus pendants, that is, the conviction that pendants are the principal concern when creating a necklace and that beads played a secondary role. It appears that beads and pendants played an equal role in Neolithic aesthetic attributes and symbology.

This case study was undertaken to address questions of function, morphology, and longevity of use of passage tomb beads. By combining the information provided by macro and micro examination of the bead and pendant artefacts and comparing these results to established analytical criteria for the technological interpretation of the beads from several publications as well as experimental reference collections, this study re-evaluated some of the previous conclusions regarding the way in which these artefacts were employed in passage tomb contexts. It has also provided a unique opportunity for assessing the advantages of this type of analysis, and to quantify the intrinsic limitations.

Chapter 6: Stringing Fragments Together

The results presented in Chapters 4 and 5 have demonstrated that key patterns and preferences can be identified in the stone bead and pendant material from Irish passage tomb contexts. This chapter explores these overarching trends and how they can inform us about the relationship between stone beads/pendants and Neolithic passage tomb rituals and society. Beads/pendants are renowned for conveying visual messages about society. Therefore, an examination of the physical characteristics including morphology, colour and raw material can illuminate the symbolic and social implications of their selection for deposition in passage tomb contexts. The biographies of the beads/pendants are then examined as a means of deconstructing the way in which they were deployed at successive stages of passage tomb ritual. This includes discussion of their use prior to deposition, their role in rites related to fire, and their placement in association with human bone. Lastly, an examination of the fractal nature of beads and pendants demonstrates their link to the construction of individuality and dividuality in Neolithic Ireland.

[6.1 Miniatures](#)

Many of the shapes represented in the stone pendant and bead artefacts are miniature representations of recognizable artefacts including axes, maceheads and carved stone balls (Eogan 1986, 284, Gogan 1930, Herity 1974, 126-7, Piggott 1954, 207, O'Sullivan 2006, 239). It is likely that these miniatures acted as 'ritual models' for familiar artefacts, imbued with the same symbolic and cultural implications as their counterparts (Foxhall 2015, 1, Kiernan 2015, 45, Knappet 2005, 88-91, Skeates 1995, 286). In many cases the miniaturisation of an artefact renders the object deliberately dysfunctional and in the case of ritualised objects such as axes, maceheads and carved stone balls, compaction of the object into a smaller size may have transformed or enhanced the specialness of the object. Furthermore, the creation of miniatures requires greater precision and a higher standard of technological skill in their execution (Foxhall 2015, 1). Miniaturisation

also allows a renegotiation of relationships with an artefact, enlarging the spectator, allowing them to exert a greater degree of control over, and intimacy with, the object (Bailey 2005, 33). This intimacy is increased when the item is worn on or near the body as personal ornamentation. We could therefore view the miniaturization of the artefact in terms of the condensing prestigious, cultural, and symbolic value of their reference points. As a result, miniatures are representations of the wider social landscape and the resources, experiences and relationships of those who manufactured and utilised them (Meskell 2015, 8). Additionally, miniatures may be employed in cases where the material required for manufacture is limited, through rarity or expense.

Miniatures are encountered in a range of ritual contexts in the archaeological and ethnographical record and functioned in a variety of roles (Allen 1997, Barfoed 2015, Foxhall 2015, Kiernan 2015). They are employed as ritual paraphernalia, as miniatures of personal possessions, as votive deposits or mnemonic devices (Allen 1997, Barfoed 2015, Foxhall 2015, Kiernan 2015). Miniatures are common in Morbhan, Scandinavian and Iberian megaliths, in particular passage tombs, although they are unusual finds throughout Britain (Bradley 2009, 87-8, Herity 1974, 196-201, Jones 2012, 46). In Brittany, axes are the most frequent miniatures but the pestle and hammer forms favoured in Irish passage tombs are not well represented (Herity 1974, 196). Axe pendants also occur across ritual contexts in the southern Central Mediterranean region, including Malta and Sicily (Skeates 1995, 281). The Irish bead and pendant miniatures are more characteristic of the amber pestle pendants (clubs) and waisted beads (double axes) from Scandinavian passage tomb monuments (Axel and Stringhomm 2003, Herity 1974, 198). Analysis of Swedish stone pendants suggest that the most common form are double axes and clubs, accounting for 52% (Axel and Stringhomm 2003).

Understanding the original reference points for these reproductions enhances our understanding of the role miniature beads and pendants played in their context.

To address wider questions about the significance of beads and pendants in Irish passage tombs, the significance behind these parent artefacts must be addressed.

[6.2 Maceheads](#)

Eighty percent of Irish passage tomb stone pendants appear to have been influenced by Neolithic maceheads. Macehead miniatures extend across all Type 2 and 3 monuments, featured at the majority of sites, in a variety of materials and levels of craftsmanship. At least 70 full size maceheads have been discovered in Ireland (Eogan and Cleary 2017, 463). Simpson's classification system (1988, 1989, 1996) divided Irish maceheads into several categories, the most common unifying feature is their manufacture from visually striking types of rock, including glacial erratics (Simpson 1988, 33). This feature is mirrored in the manufacture of passage tomb pestle pendants (Fig. 6.1) which are manufactured from visually distinctive material including jasper, serpentinite and glassy steatite. Furthermore, macehead pendants generally have a high degree of polish. The most common type of macehead encountered in Irish passage tombs are pestle-type. However, only two of the 32 examples from Ireland have securely dated contexts (Cooney 2004, 200, Simpson 1996, 69). Interestingly, the Maesmawr macehead from Knowth was identified as an imported exotic item indicating links with Scotland during this period (Eogan and Richardson 1982, 133-6, Sheridan 2004, 17). Dating evidence from Britain and Ireland suggests that maceheads were probably in use during the Middle Neolithic, sometime between 3300 BC and 2900 BC (Schulting *et al.* 2010, 34-5), and continued into the Late Neolithic, in line with the production and use of miniatures in Irish passage tombs. The function of these objects has been debated. Nevertheless, it is likely that the majority of maceheads were never functional tools. The investment of craftsmanship indicates that they were likely indicators of high status and, judging by their contexts, items of ritual and ceremonial importance.



Figure 6.1: Macehead and macehead pendant (a) Macehead from Knowth 1 (after Grogan and Cleary 2017, 443); (b) Pendant from Loughcrew X (by author).

[6.3 Axes](#)

Polished stone axes are often recognised as a key symbol of the Neolithic and have been the subject of extensive research (Bradley and Edmonds 1993, Cooney *et al.* 1998, Le Roux 1979, Sheridan *et al.* 2002). The symbolic significance of the stone axe throughout Neolithic Europe can be attested by their widespread exchange (Bradley and Edmonds 1993, Petrequin and Petrequin 2011, Skeates 2002), their inclusion in megalithic art (O’Sullivan 2000, Shee-Twohig 1981, 55-6), their occurrence as votive depositions in hoards (Bradley 1990), and recovery from ritual and funerary contexts (Bradley 1998, Cooney and Mandal 1998, 34, Midgley 1992, 281-4, Skeates 2002). Investigations in Ireland have shown that stone axes were abundant artefacts utilised in many contexts (Cooney and Mandal 1998, Sheridan *et al.* 1992): as grave goods, ritual depositions at causewayed enclosures, and as votive deposits in caches (Edmonds 1993, Cooney *et al.* 1995). They may symbolise control over nature, as a result of their initial procurement and manufacture from rock sources from important and potentially dangerous locations (Cooney 2015, 521-2, Whittle 1995, 252-4). Axes sometimes acted as expressions of power and prestige, at ceremonial occasions and social exchanges,

due to their widely-recognised value (Skeates 1995, 288). In tribal societies such as amongst Australian aboriginal groups and the Melanasiens, axes are central to ritual action acting as a vehicle for metaphorical expression (Battaglia 1990, Brumm 2004, Ray 2004). Additionally, they are often perceived as animate, charged with supernatural life force (eg. the Oceanic concept of 'mana', the Maori's 'hau', Islamic 'baraka', and Teutonic 'luck'), and as a consequence, are often treated as if they were human. It is similarly possible that axe-pendants served as amulets and talismans (Nicolucci 1879, 67, Orsi 1891, 63, 67, Colini 1903, 172, Taramelli 1904, 332). Given the apparent symbolic importance of the axe throughout the Neolithic, it is unusual that only 7% of stone pendant miniatures from Irish passage tomb contexts are of this form. It is widely suggested that four pendants from Carrowkeel G (Type 2) (Fig 6.2a) are inverted miniature copies of *haches à bouton* (Fig. 6.2b), a French Neolithic stone axe group from Plussulien in Brittany (Hensey 2014, Herity 1974, 129, Patton 2002, 22, Sheridan 2014, 308, Sheridan *et al.* 1992, 294, Walker 2015, 237). There are key morphological affinities, most notably the round button element which protrudes from the base of the pendant. Interestingly, miniatures of *haches à bouton* are not a feature of passage tomb assemblages from Brittany. Furthermore, full-size *haches à bouton* are incredibly rare in British and Irish contexts with only one example from England (Pulborough, West Sussex) and a single possible exception from Derryhoosh, Co. Monaghan (Herity 1974, 129, Walker 2015, 237).



Figure 6.2: Stone axe and pendant (a) Axe pendant from Carrowkeel G (by author); (b) Haches a bouton from Musee de Bretagne (www.musee-bretagne.fr/).

6.4 Carved stone balls

It has been suggested that the stone knobbed beads from Knowth 1 (I.D 132-133) (Fig. 6.3a) and the Mound of the Hostages are miniatures of Neolithic carved stone balls (Fig. 6.3b) (Eogan and Cleary 2017 443, Jones 2012, 47, Sheridan 2014), encountered throughout Scotland but particularly in the Aberdeenshire region (MacGregor 1999, 259). The majority (70%) of balls have six knobs, similar to the beads from Knowth, though they may also display significantly more or fewer knobs (Edmonds 1992, 190). Carved stone balls have not yet been recovered in association with megalithic architecture; in Orkney and the Western Isles they are more commonly associated with formal deposition at settlement sites or as stray finds in wetland areas (Armit 1996, Petrie 1968). Three examples were found at Skara Brae in a context that suggests a Middle to Late Neolithic date (3300-2400

cal BC) (MacGregor 1999, 259, Marshall 1976-7, 61-62,). Additionally, another was discovered at the Ness of Brodgar on Orkney in 2013. The site is currently undergoing an extensive radiocarbon dating programme, but initial indications suggest that most of the material is likely to date to between 3100-2100 cal BC (Card 2013). Only two full-sized stone balls have been discovered in Ireland to date. The stone ball from Ballymena, Co. Antrim is of the six-knobbed variety (Marshall 1976-77, 68), and a sandstone example was recently unearthed during the excavation of a late prehistoric enclosure at the Hill of Uisneach, Co. Westmeath (Carlin 2017, 7). The role of these artefacts is elusive; however, current interpretations suggest a functional or socio-political role as ritual equipment, status-markers, or individual and communal hereditary items (Clark *et al.* 1985, Edmonds 1992, MacGregor 1999, Thomas 1996). They were also subjected to the same 'social death' that axes suffered, i.e. removal from circulation through formal deposition or abandonment in watery places (Bradley 1998, MacGregor 1999, 260).



Figure 6.3: Carved ball and bead (a) Stone ball bead from Knowth 1 (after Grogan and Cleary 2018, 421); (b) Four-knobbed carved stone ball from Towie, Aberdeenshire, Scotland (after Sheridan 2014, 307).

[6.5 Black, white and red all over](#)

The analysis employed in this study revealed variations between colour preferences amongst the stone bead and pendant assemblages. Beads were spread across ten colour categories, whereas only seven categories were selected for the manufacture of pendants. Colour categories can be divided into three basic groups: light, dark and warm. The light grouping incorporates white and off-whites (including nudes and beiges); the dark grouping incorporates blacks and greys of varying hues; and the warm grouping incorporates browns, reds and oranges.

Interestingly, these three colour groups reflect the three colour groups deemed significant in many traditional societies: white, black and red (Trevvarthen 2000, Turner 1967). In tribes such as the Yoruba of Nigeria (Drewel and Mason 1998), the Zulu of Southern Africa (Wicklar and Zeibt 1995) and the Ndembu of north-west Zambia (Turner 1967), each of these colour terms comprise a range of hues and colours representing layers of symbolic meaning (Jones and Bradley 1999, 113, Keates 2002, 116, Turner 1967). In these cultures, only black, white and red are primary colours linguistically, whereas other colours derive etymologically from, and refer to, plants, animals or other natural objects. The symbolic significance of this triad has also been the subject of cross-cultural parallels in prehistory (Gage 1999, Jones and Bradley 1999, Spence 1999, Tilley 1996, 322), and dominates the cultural symbolism of many tribal communities (Keates 2002, Jones 1999, Spence 1999, Turner 1967, Trevvarthen 2000). Even in cultures with access to a wealth of colour terms, black, white and red still resonate with symbolic importance. These colours are key symbols in rites of passage in many traditional cultures, including the Ndembu of north-west Zambia, the Ngonde of northern Malawi, and Bembu of Northern Rhodesia, incorporated through colour tints, coloured clothing and objects (Turner 1967, 54-57). Rites include initiation rituals for both males and females, and also rituals associated with death. This symbolic structure is established through myths and social understandings shared in preparation for these rites (Morris 1987, 244).

Similarly, black, white and red appear to be of primary significance in the construction of Neolithic monuments, selectively employed in complex relationships with tomb orientation and astronomical alignments (Jones and Bradley 1999, 114, Bradley 2000, 14-39, Hensey 2008, Lynch 1998, MacGregor 2002, Ramirez *et al.* 2015, Scarre 2000, 232). The complex relationship between the significance of colour and lithology in the selection of structural stones for Neolithic and Bronze Age monuments has been explored in numerous studies (e.g Bergh 1995, Bradley 2000, Darvill 2012, Jones 1999, Lynch 1998, MacGregor 2002, Scarre 2000, Tilley 1996, 317, Trevarthen 2000). Patterning of white, black and red was observed in megaliths from Iberia, Brittany, Scotland and the Netherlands (Darvill 2013, Lynch 1998, Ramírez and Behrmann 1997, Scarre 2004, Steelman *et al.* 2005). White, black and red stones also occur at the entrances to several Irish passage tombs (Jones 1999, Sheridan 1985/6) including: Newgrange: black and white (O’Kelly 1982, 21); Knowth 1: white and black (Mitchell 1992); and Knockroe: red and white (O’Sullivan 2010). The use of coloured stones at Irish passage tombs appears to emphasise zones of orientational importance (Darvill 2012, Sheridan 1985/86). Scarre (2002) concluded that the black, white and red colour triad is an important feature in almost all prehistoric studies of colour symbolism. This appears to be reflected in the colours of stone beads and pendants also.

Research has demonstrated that the use of colour was important in the manufacture of Neolithic maceheads and axes (Cooney 2002, Simpson 1988, 1989), two forms that consistently appear as miniature pendants in passage tombs. In the cases of axes, each of the eleven primary colour terms utilised in this study are represented with the exception of red, the dominant colour featured throughout the bead and pendant assemblage (Cooney 2002, 97). Cooney suggests that in the case of axes at least, colours were representative of the source of the raw material and connected the axe head to its place of origin in the landscape (*ibid.*, 96). Additionally, the transformation of the colour of the raw material through grinding and polishing mirrors the transformation of the object

from raw material to final product (*ibid.*, 96). In this way colour is an important aspect of a suite of characteristics that define the symbolic significance of an artefact. This may also have been the case for other symbolically important artefacts including beads and pendants. It is widely established that white had symbolic importance in the Neolithic as witnessed by the use of white quartz as entrance features in megaliths and also as a tempering agent in pottery (Cooney 2000, 176-7, Koeberl 1997, Woodman and Scannell 1993). Cooney (2002) has suggested that red grinding stones and jasper pendants encountered at the Lambay Island axe quarry were two separate expressions of the life-giving power associated with redness.

However, it has been noted that treatment of colour classification and symbology can be too straightforward in many archaeological studies (Baines 2007, Jones and MacGregor 2007). It is still unclear whether our preconceived notions of colour groups are universal or purely cultural, which can cause issues with colour analysis of artefacts. The idea of a universal notion of colour has been debated for decades and consensus has swung back and forth between two schools of thought. Universalists argue that colour perception is a universal effect determined by biology, while relativists suggest that colour perception is influenced by the way colour is communicated through language and culture (Regier and Kay 2009). Many psychological and physiological studies have supported this universal perspective (Franklin *et al.* 2005, Witzel and Gegenfurtner 2011, Yang *et al.* 2016). Relativists suggest that our perception of abstract modes of thought such as colour are linked to the language and culture that we are exposed to from birth (Athanasopoulos *et al.* 2011, Gonzalez-Perilli *et al.* 2017). This is supported by a number of cross-linguistic studies regarding the functional organisation of colour categorical perception in the brain (Gilbert *et al.* 2006, Roberson *et al.* 2008, Winawer *et al.* 2007).

Recent studies have suggested the adoption of a more complex amalgamation of universalism and relativism (Franklin *et al.* 2005, 2008, Lupyan and Clark 2015,

Tajima *et al.* 2016). These studies indicate that colour perception is biologically universal but influenced culturally and linguistically (Baines 2007, Roberson *et al.* 2000, Hayney and Bower 2016, He *et al.* 2019, Regier and Kay 2009).

This evidence suggests that the use of colours in wider systems of symbolism is a culturally relative phenomenon and so it is impossible to understand what these colours definitively meant to Neolithic people (Keates 2002, 115). Nonetheless, the preferences demonstrated in the colour analysis in this study indicate that a significant tripartite colour system was employed in the selection of beads and pendants for inclusion in Irish passage tombs. It appears that these colours were deemed significant in the socially constructed symbolic system associated with passage tomb ritual, and it may be useful to understand the significance of these colours in traditional societies. The themes associated with these colours in traditional societies and cross-cultural investigations revolve around death, birth and transformation. The meanings of the colours in various cultures are summarised in Table 9, but there are some overarching themes. White is intended to be positive and beneficial signifying light and brightness (Morris 1987, 244-45, Turner 1967, 52-53), in opposition to black which is often seen as destructive or otherworldly (Morris 1987, 244-45, Turner 1967, 55). Red tends to be an active and powerful force associated with good or bad, depending on the context (Morris 1987, 244-45, Turner 1967, 52). These meanings can be summarised as a contrast between white and black, light and dark, good and bad, life and death, with the addition of red and its association with blood, life and the present. White, black and red are juxtaposed in rituals associated with a transformative state, in particular in initiation and funerary rituals; from childhood to puberty, from puberty to manhood and womanhood, and from life to death.

Culture	Red	White	Black
Ndembu (Zambia)	Life Sex Blood (in murder, childbirth, circumcision, menstruation, witchcraft) Visible	All Life Procreation Goodness Strength Health Luck Power Semen	Death Sexual Desire Evil Bad Luck Disease Witchcraft Night Shadowy
Mandari (Sudan)	Positive Dynamic Violence Tension Life	Beneficial High Status Preferred moral/intellectual values	Malign Obscuring Low Status Can be positive
Fipa (Tanzania)	Energy Labour Movement Sexuality Reproduction Childbirth Femaleness Animality Strangerhood Warfare Killing Violence Pain Bloodshed	Wholeness Oneness Truth The Sacred Kingship Seniority Intellect Maleness Settlement Benign spiritual powers	Generation Pregnancy Germination Generosity Gift-giving Occult Transformation Sorcery Deception Pollution Death Malign spiritual powers
Ancient Egypt	Life Celebration Victory Rage Seth as evil deity	Purity Sanctity	Gestation The Neverworld
Hindu	Fire Active Passionate Creative Choice Will Desire Hesitation Subjugation	Water Goodness Preservative of the Intellect Enlightenment	Air Inert Lethargy Sensual appetites Degenerative Destructive
Christian/Western tradition	Strong emotion Sovereign Power Action Rage Strife Danger Courage Virility Sex Blood Fire	Truth Peace Innocence Purity Sanctity	Penance Mourning Sickness Death The Underworld Witchcraft The Devil Negation
Alchemical stages:	Relating unconscious with conscious	Disintegration of the corpse.	Death of normal conscious outlook.

Table 9: The meanings of the colours red, white and black in various cultures (after Trevarthen 2000, 313).

These associations mean the selective use of white, black and red beads and pendants in Irish passage tomb contexts is likely deliberate. Passage tomb contexts are associated with the transformation of human remains from the world of the living to that of the ancestors. It seems apparent that beads and pendants played some role in the cremation process, or alternative ritual action related to fire and fragmentation. It is likely then that these colours acted as symbolic metonyms and metaphors in a non-arbitrary fashion in this ritual, employed at varying stages to signify life and positive forces, or death and negative connotations. Interestingly, the number of stone beads and pendants diminish in Type 3 monuments (including Knockroe, Knowth and Newgrange) to be replaced by ceramic skeumorphs. These ceramic imitations are manufactured from brown and red clay increasing the number of artefacts included in the warm category to over 59% of the entire assemblage. This change may have been influenced by the increased importance of the warmer 'red' grouping.

Red symbolises present active forces and is considered the most dynamic of the triad moving between good and bad depending on the context. Darvill (2012, 239) suggests that creating or colouring items red infuses them with life and makes them active. This intensified concern with redness occurs in a period where passage tomb architecture demonstrates an increased interest in the visual spectacle of passage tomb ritual, in order to engage larger groups in ritual action (Eogan 2007, Hensey 2015, O'Sullivan 2004). The adoption of red ritual equipment at this time may have been intended to signify the active influence of ritual action involving red beads/pendants in the present.

Perhaps what is more significant is the lack of certain colours. Greens (3.6%=n.7) and blues (3%=n.6) constitute a very small percentage of the entire stone bead and pendant assemblage from Irish passage tombs. Green and blue are interchangeable in a myriad of traditional and ancient cultures including the Zulu tribe of Southern Africa, the Iroquian tribe of North America, and in Ancient Egypt (Baines 1985). In Ireland, the only passage tomb to have produced green artefacts

is the Mound of the Hostages (O'Sullivan 2005, 136-150). The examples discovered included three stone pendants (I.D. 35,45,54) and two stone beads (I.D. 63, 70), two of which are quartz (Fig. 6.4). In addition, two beads from the foundation of a hut site directly opposite Newgrange passage tomb have a pale green tinge and mottled blue colouring over their surfaces (O'Kelly 1982, 296).

The paucity of green material from Irish passage tombs contrasts markedly with bead material from ritual contexts elsewhere in Europe. Greenstone beads and pendants are common artefacts from passage tombs in Brittany (Querre *et al.* 2014, 149), and ritual contexts in Spain, Malta and Italy, including caves and temples (Thomas 2011, 34-36). Green beads and pendants are more common in 'domestic' ritual contexts in Ireland including settlement sites and pits. In these instances, there are abundant examples manufactured from green or green/grey material at sites such as Circle L at Lough Gur, Co. Limerick (Grogan and Eogan 1987, 391), Corbally, Co. Kildare (Grogan 2002, 521), and Carrickmines Co. Dublin (Ó Drisceoil 2006, 143). The limited use of green and blue in the bead and pendant assemblages from passage tombs is significant, as stone bead studies in the Near East have identified a surge in the number of green materials utilised in stone bead manufacture, including amazonite, apatite and serpentine in the early Neolithic, and expanded use throughout the Neolithic (Baines 2011, Bar-Yosef Mayer 2008). Over time, green materials were imported from increasing distances to meet manufacturing demand. This change is considered reflective of the renewed importance of fertility, abundance and growth in relation to vegetation following the onset of agricultural practices (Bar Yosef Mayer 2008, 8548). In addition, the widespread use of green materials including variscite and jadeite throughout the European Late Neolithic in France, Spain, Malta and Italy was more likely the result of its intense green colour than mineral content (Patton 1993, 110, Thomas 2011, 35, Querre *et al.* 2014).

Green coloured stone was utilised in the construction of some passage tombs including Newgrange and Knowth. Green coloured Palaeozoic greywacke quarried

from nearby outcrops was used for most of the orthostats in the chambers at Newgrange (Mitchell 2002). Green material was not utilised in areas associated with audiences, including the entrance and exterior of the monuments. The inclusion of green material does not extend to the range of funerary equipment regularly associated with these passage tombs including beads and pendants, pins, stone balls, pottery, axes, flint, chert, quartz basins and maceheads. The scarcity of green beads and pendants in Irish passage tombs, and their alternative use in domestic contexts, makes sense to some extent. The dedication of objects in foundation deposits, and at liminal places within domestic space (including walls and thresholds), is common in both prehistoric and traditional societies as a means of influencing fertility and prosperity through sympathetic magic (Brück 1999, Chapman 2000, Schraven *et al.* 2011, Thomas 1991). In these instances, green beads and pendants representing fertility, abundance and growth may have been deemed more suitable than the black, white and red common in passage tomb contexts. Their inclusion in passage tomb ritual may have only been required in exceptional circumstances. The examples from the Mound of the Hostages were recovered from the main cremation mass in the passage and chamber of the passage tomb (O'Sullivan 2005, 136-150). As a result, the mitigating circumstances resulting in their inclusion remain elusive.



Figure 6.4: Green beads and pendants (a) Pendant and two beads from Mound of the Hostages; (b) Pendant from Mound of the Hostages (by author).

6.6 Decorated pendants

The proportion of decorated stone beads and pendants is extremely low (1.5%=n.3) and restricted to pendants. The incised geometric art which occurs on the two decorated stone pendants from the Mound of the Hostages (I.D. 035, 054)(Fig. 6.5a, Fig. 6.5b) and the decorated pendant from Carrowkeel G (I.D. 175) (Fig. 6.5c) is a recurrent theme in the Irish passage tomb tradition. The carvings may be interpreted as a spiral design, or a series of parallel chevrons encircling the stone. Adornment of this nature more commonly occurs on bone pendants from Irish passage tombs including Loughcrew R2 and S (Fig. 6.6d, Fig. 6.6e) and at the Mound of the Hostages, Cist II (Fig. 6.5f, Fig. 6.5g). Similar spiral motifs appear on bone and antler pins from a number of sites, including Fourknocks 1 and Carrowmore 27 (Fig. 6.5h), and the grooved sandstone conical object from Knowth 1 (Eogan 1984, 163). These motifs emulate the combination of spirals, chevrons and lozenges which occur as threshold symbols on passage tomb orthostats at Fourknocks, Knowth 17 and Newgrange (Robin 2010, 388-9).

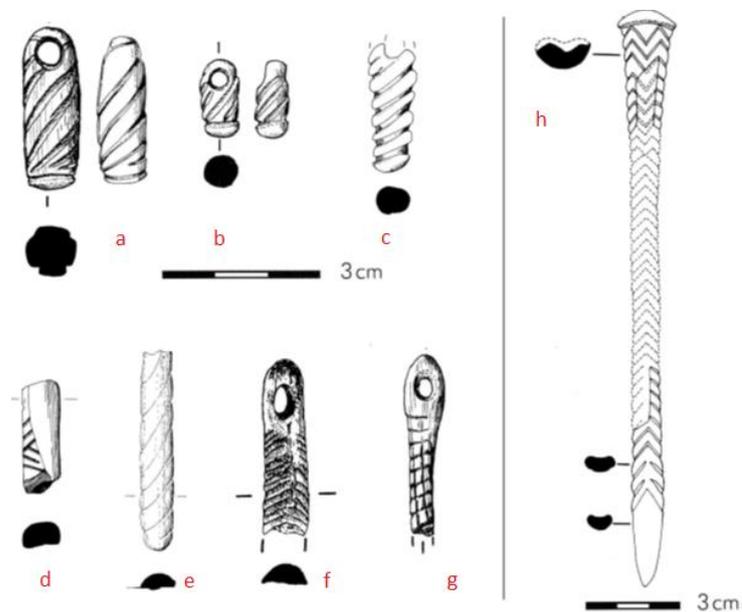


Figure 6.5: Decorative Motifs (a) Stone pendant from the Mound of the Hostages; (b) Stone pendant from the Mound of the Hostages; (c) Portion of a stone pendant from Carrowkeel G; (d) Possible portion of a bone pendant from Loughcrew S; (e) Possible portion of a bone pendant from Loughcrew S; (f) Bone pendant Cist ii the Mound of the Hostages; (g) Bone pendant from Cist ii the Mound of the Hostages; (h) Bone pin from Carrowmore 27 (After Carlin 2017, 10).

Megalithic motifs in Ireland are almost exclusively associated with passage tomb contexts (Carlin 2017, 09), contrasting with other regions including Orkney where megalithic symbols are transmitted to everyday contexts, such as settlement sites (*ibid.*, 09). These designs have been encountered in additional ritual contexts outside of the passage tomb tradition in Ireland, including two instances of Grooved Ware associated with a pit at Coole, Co. Cork (Cleary 2015), and Grooved Ware associated with a timber-circle-like structure at Slieve Breagh, Co. Meath (de Paor and Ó Eochaidhe 1956). Additionally, an unusually carved stone object featuring megalithic motifs was recovered from the post-hole of a mid-third millennium timber circle structure at Ballynacarriga Co. Tipperary (Carlin and Cooney 2017). The significance of these motifs in the manufacture of ritual equipment for deposition in passage tombs is significant. Carlin (2017), Thomas (1010) and Bradley *et al.* (2001, 64) suggest that in Neolithic Ireland, passage tomb motifs were associated with the transition between death and the otherworld. Decorated pendants may have had the same symbolic function during ritual actions as threshold motifs in passage tomb architecture, in that they were visual markers of the transition that occurred at a specific juncture in the cremation ritual.

[6.7 Origin story](#)

Chapter 5 illustrated that there were 12 different rock types and one example of amber resin utilised in the manufacture of beads/pendants from Irish passage tomb contexts (Table 10). This reveals clear preferences and patterns in the rock types that were deemed suitable for their manufacture. Raw material selection is influenced by many factors including aesthetic preferences (colour, lustres, natural patterning) (Kenoyer 2003, 14, Tite 2001, 446); technical qualities of the rock (ability to be polished, texture); availability; and cultural and social influences; as well as symbolic beliefs connected to particular rock types (Boivin 2004, 2, Miller 2007, 49).

Rock Type	Technical and aesthetic properties
Steatite	either a waxy, pearly, or greasy texture, malleable, retains heat
Limestone	smooth and polishable, fine-grained, malleable
Mudstone	Fine grained, smooth, highly polishable
Jasper	smooth to the touch, fractures conchoidally, hard and durable material
Serpentinite	smooth texture, polishable, coarse to medium-grained therefore crystals can be seen with naked eye, durable
Sandstone	medium-grained rock therefore crystals can be seen with the naked eye, malleable
Gabbro	coarse-grained rock
Shale	slight micaceous sheen, fine-grained and finely-laminated
Slate	fine-grained rock with a slaty cleavage, easy to split and work
Tuff	fine to medium-grained rock with pockets of crystals
Dolerite	medium-grained rock with smooth texture
Quartz	smooth, siliceous, and translucent
Amber	translucent, glossy, smooth to the touch

Table 10: Technical and aesthetic properties of the raw materials (after Pellant 1992).

The most commonly occurring rock types across both categories include steatite, limestone, mudstone and jasper. The material palette for beads is broader than that of pendants, encompassing a wider range of materials. Previous accounts of passage tomb beads and pendants have emphasised the exotic nature of the material exploited for pendants (Herity 1974, Eogan 1986, O’Sullivan 2010), but it is now clear that the raw materials utilised for passage tomb pendants and beads were predominantly available locally, as primary outcrop material or as easily accessible secondary sources such as cobbles from rivers, beaches or glacial

deposits (Mandal 2005, 2017). It could be suggested that the choice of sources was guided by seeking rocks that were available in the vicinity, with suitable properties for manufacture and use, but additional factors were also under consideration. Despite the widespread use of local materials, distribution patterns indicate Neolithic people were quite conservative in the materials they exploited and did not utilise all rock types available to them. For example, the dominant rock type available in Irish geology is limestone (Mitchell and Ryan 1997), readily available at all sites, and with a Mohs hardness of 3 ideal for bead making, providing both malleability and durability (Kenoyer 2003). Despite this, discounting the Mound of the Hostages assemblage, limestone constitutes a very small portion of the overall assemblage of stone beads and pendants (8%). At the Mound of the Hostages limestone appears as the dominant geology utilised in the manufacture of beads/pendants. It is also the only site which has not produced steatite material. Steatite beads/pendants occur throughout the assemblages of other sites in the vicinity, including Newgrange, Loughcrew X, S, R2, I and Fourknocks 1. It is possible that steatite was not deemed suitable for deposition at the Mound of the Hostages.

Brück (2004, 321) has noted that in traditional societies, links to particular places of personal or communal significance can be represented and sustained by material from these places. The use of a specific local stone as a manufacturing media for beads/pendants could provide links between individuals or groups with key places in the landscape. Ownership and belonging could be visually articulated through this engagement with local, enduring materials from these significant places (Bradley 2000, Cooney 1999, 135-8, Fowler and Cummings 2003). These natural places may have garnered significance as far back as the Mesolithic (Bradley 2000) and material from these areas was appropriate for inclusion in contexts related to the transitional period of death and burial.

For example, it has been suggested that the amber pendants that feature in Scandinavian passage tomb assemblages were manufactured from beach pebbles

gathered from local coastlines. The significance of the seashore as a boundary between the living and the dead in Neolithic Scandinavian cosmology may have had a fundamental influence on this choice (Ballard *et al.* 2004, 388, Helskog 1999). Alternatively, the gathering of secondary sources of rock (pebbles, cobbles, erratics) is less labour intensive and eliminates the dangers of quarrying (Cooney 2011, 2015, 519-22).

In some cases, serpentinite and steatite (the most commonly occurring material) were imported, possibly from the north-western counties of Donegal, Mayo and Galway to sites in the east, including six sites in Meath and Knockroe in Kilkenny (Mandal 2005, 2017). The use of more exotic raw material may have required journeys of acquisition or the establishment of trade networks. In indigenous societies, the acquisition of material often involves long and dangerous ritual voyages. The prestige, power and esoteric knowledge obtained during this journey was key to adding value to the material (Cooney 2004, Helms 1988, Kristianson 2004, Taylor 2017). Australian aborigines undertook journeys to important mineral quarries to obtain valuable minerals for ochre, axes and grindstones; these journeys also fulfilled ceremonial obligations and were involved in initiation rites (McBryde 1997, 2000, Paton 1994). Similarly, the Wintu tribes in North America obtained obsidian through a semi-religious quest which involved fasting (Robinson 2004).

It is widely acknowledged that stone axes had a range of functional and symbolic values in the Neolithic (Cooney 2015, Patton 1991, Sheridan *et al.* 1992, Skeates 2002, Whittle 1995). As such, research into raw material procurement for the manufacture of axes offers considerable potential for comparison with additional symbolically significant artefacts from this period (such as beads/pendants). In Neolithic Britain and Ireland, local rock sources were often overlooked in favour of identical stone types that occurred in areas considered difficult and dangerous to reach, including secluded areas such as islands (Lambay, Brockley, Shetland) and mountainous regions that commanded stunning views across the landscape

(Great Langdale, Tievebulliagh) (Bradley 1993, 2000, Bradley and Edmonds 1993, Cooney 2015, 2017, Cooney *et al.* 2013). These spectacular locations facilitated the perception of quarries as special places (Cooney 2015, Cooney *et al.* 2013). The physical and spiritual risk involved in the procurement of raw material for axes (Tacon 1991, 203-4) added another dimension of value to the finished artefact. Furthermore, studies have illustrated that major rock sources tend to be visually distinctive, highlighting their places of procurement. Examples include green jadetite, eclogite and omphacitite axe-heads from Alpine sources (Pètrequin and Pètrequin 2011, Pètrequin *et al.* 2013), or the dark blue colour characteristic of the porcellinite quarries at Brockley, Rathlin Island off the north-east of Ireland (Cooney 2015, 519). It is suggested (Cooney 2002) that physical features would have connected the rock to its place of origin. In Papua New Guinea, people to the west of the main axe quarries at Mount Hagen were unaware of the whereabouts of the sources but differentiated axes based on the direction they hailed from and their physical appearance (*ibid.*, 97). In other words, the value and significance of the raw material for beads/pendants may have been more concerned with the source and the effort involved in obtaining it than the aesthetic or physical characteristics.

Alternatively, the presence of imported material may be an expression of relationships between communities in the west and the east of the country. Circulation of the raw material (serpentinite, steatite) or the completed bead/pendant artefact may have been the result of economic or symbolic exchanges between groups. The possession of this ritually significant material is likely to have communicated complex social messages of power. In a similar way, systems of exchange for symbolically meaningful stone axes have been proposed for areas in Europe (Bradley 1990, Bradley and Edmonds 1993, Skeates 1995, Thomas 1996, Whittle 1995).

The selection of raw materials was unlikely to be driven solely by availability, but also by aesthetic and technical considerations (Fig. 6.7). Whittle (1995, 524)

suggests that the physical qualities of the rock may be integral to the symbolic meaning of the stone. Each of the individual rock types possesses a variety of physical and visual traits which are distinctive and appealing for bead/pendant production for practical and aesthetic reasons. In terms of practicality, the majority of raw materials utilised (steatite, limestone, mudstone) have a total range of 1 to 5 on Mohs scale of hardness (Pellant 1992). Such a low hardness level renders these materials easy to reduce and manipulate, yet tough or durable enough to withstand abrasion and perforation without breaking (Kenoyer 2003). Harder materials of between six and seven (sandstone, jasper, quartz and dolerite) are utilised more infrequently. Harder materials are much more challenging to shape and perforate (less tough or more brittle) and require a higher level of skill in bead manufacture (Bains 2011, Kenoyer 2003). This may explain why they are present in such small numbers in Irish passage tombs; however, the more commonly used raw materials were abundant, relatively accessible and easier to work. Surprisingly, harder materials are not a feature in sites that exhibit Type 3 characteristics, which tend to be later in the timeline and exhibit a higher level of craftsmanship in architectural features and artefacts (Carlin 2017, 2, Hensey 2014, Sheridan 1986). Materials including jasper and quartz are more common at sites that exhibit Type 2 features and occasionally at Type 1 sites.

Polishing is also a feature of the assemblages, particularly in the case of pendants. It has been suggested that the act of polishing stone axes may not only have improved their usefulness by making them less vulnerable to breakage, but also made them more valuable by enhancing the distinctive character of the raw material (Bradley and Edmonds 1993, 49, Taylor 1996) which may be connected to the source of the raw material (Bradley 2000, 88, Cooney 2002, 96-10). The transformation of the colour of the raw material through grinding and polishing mirrors the transformation of the object from raw material to final product (Bradley 2004, Cooney 2002, 96). Although brightly coloured stone or stone from special places may have infused the rite of polishing with an added symbolic dimension, it is suggested here that it was the actual act of transformation which

made stone axes (and in turn stone beads/pendants) so significant in Neolithic ritual. Although the inherent properties of individual stones may have been seen as significant in their own right, it is also possible that they gained importance through their transformation by people (Bradley 2004).

In addition, the act of polishing changes the textures of beads/pendants. Beads are intimate objects that often maintain contact with skin when in use and Cummings suggests (2002, 250) that the texture associated with Neolithic stone artefacts is an important consideration. The raw materials utilised can have various textures depending on porosity. For example, the steatite portion of the assemblage exhibits both chalky and glassy textures (Mandal 2017). The majority of materials utilised could be polished to an overall smooth texture making the beads more comfortable and practical for everyday wear. Additional technical properties may have rendered certain minerals and rocks special in the eyes of Neolithic people. The use of steatite for the manufacture of a high proportion of beads and pendants is unsurprising as its' low hardness level meant it was ideal for bead/pendant processing (Barthelemy de Saizieu and Bouquillon 1994, Micheli and Mazzieri 2012, 234). Additionally, firing increases steatite's strength and durability (Micheli and Mazzieri 2012, 234). Steatite may also have been considered special as it can absorb and redistribute heat. These qualities of heat retention and resistance meant that steatite could endure thermal shock going from freezing temperatures to the heat of campfires (Storemyer *et al.* 2002). For instance, Vikings surrounded fires with large blocks of steatite during the evening which then radiated absorbed heat during the night (Rapp 2009, 125, Ritchie 1984).

The choice of stone as a representational medium in the manufacture of objects associated with ritual activity in Irish passage tombs is significant. Stone evidently held an important symbolic role in the Neolithic as attested by its association with artefacts deposited in ritual contexts (axes, maceheads, burnt stone) and significant places in the landscape, including megaliths (Cooney 2002, 95). For

Neolithic communities, stone was likely a symbolic expression of the permanent connections that they pursued. Cooney (2008) has suggested that this new relationship with stone, as the focal material for the construction and manufacture of meaningful places and things, demonstrates the changing identity of the Neolithic community in relation to their environment. Contemporary societies perceive minerals as commodities to be exploited for economic gain (Taçon 2004); however, in pre-industrial societies: *'stone is viewed as symbolically powerful, ritually significant and interwoven into the economic, social, cosmological, mythical, spiritual, and philosophical aspects of life'* (Boivin 2004, 4).

In many traditional societies stone is viewed as animated, endowed with its own spiritual identity and life force (*ibid.*). Ethnographic research of Melanesian, Australian, New Zealand and Chumash societies provides accounts of individual stones and stone types considered to be living beings, infused with their own identities or inhabited by mythic or guardian spirits (Brady and Prufer 1999, Hedges 1993, Kahn 1990, Roe and Taki 1999, Taçon 1991). As a result, quarrying of the material is linked with an assortment of dangers, both physical and spiritual, requiring ritual action in order to placate supernatural forces. The Tungai tribe in Papua New Guinea attribute their success in stone quarrying for axes to ritual purity and correct axe-making magic (Burton 1984). Research into passage tomb construction throughout Europe (Bradley 2004, Jones 1999, O'Sullivan 2010, Scarre 2004, Trevarthen 2002) has demonstrated that the origin of the construction material was an extremely significant consideration. It is clear that certain types of stone held significance in the construction of passage tombs. Concentrations of quartz occur in the interior of early passage tombs (Darvill 2002, Fowler and Cummings 2003, Hensey 2015, 2014, Herity 1974, Herity and Eogan 1977, Koeberl 1997), and as an entrance feature at developed passage tombs including Newgrange, Knowth and Knockroe (Eogan 1986, 112-13, Mitchell 1992, O'Sullivan 1993). Passage tomb construction employs a juxtaposition of local and non-local stone types. At Newgrange and Knowth five non-local types of stone

were used to embellish the tombs: white quartz, grandiorite, granite, gabbro and siltstone (Darvill 2013, 233). Locally sourced glacial erratics were used for the kerb and part of the mound and passages, and paleozoic greywacke from nearby outcrops was used for most of the orthostats in the chambers (*ibid.*, 233). In addition, unique stones were used to highlight areas of key importance, for example at Knockroe red sandstone slabs were placed at the entrances to both the west and east tombs, and the only granite block was placed near the entrance surrounded by sandstones (O'Sullivan 2010). Scarre (2004) suggests that stone utilised in the construction of megaliths in north-western France was likely chosen for its place of origin rather than visual or haptic qualities.

A shift in the significance of stone in bead/pendant production occurs in the Late Neolithic with the introduction of Type 3 characteristics into existing and newly developed passage tombs. During this period, the number of stone pendants/beads was reduced and replaced by clay skeumorphs. This was more common in eastern sites, including Newgrange and Knowth 1 (Fig. 6.6). These areas also imported steatite for the manufacture of beads and pendants (Mandall 2017). A functionalist view would suggest that clay was utilised at this time in order to ensure greater control over the supply of ritual material. The use of local clays would ensure that trade with the western areas which produced this raw material was not necessary. It has been suggested that this period saw the development of a more stratified social hierarchy that extended a greater degree of control over society through the control of ritual knowledge and prestige goods. The use of local materials negates the need for ritual voyages to the northwest of the country. Alternatively, the reproduction of an object in a different material may suggest that formative quality of clay was acquiring new significance in the Neolithic cosmology (Boivin 2004, 7). It has been demonstrated that clay from significant natural places was utilised in passage tomb rituals at this time. For example, the pottery from Knowth incorporates sediment from the mouth of the Boyne (Jones 2002, 41). At Newgrange gaps in the roof were filled with burnt soil

containing fragments of animal bone mixed with sea sand from the mouth of the Boyne 20km away (O’Sullivan 2010). In the same way, Jones highlights that minerals utilised in the manufacture of tempers in Neolithic Orkney were selected in order to articulate relationships between ancestors and Neolithic inhabitants (Jones 2002). It could be suggested that in the Later Neolithic, clay began to acquire some of the ritual significance previously held by local stone.



Figure 6.6: Collection of ceramic pendants and a bead from Knowth 1 (after Grogan and Cleary 2017, 416).

[6.8 Symbolic languages](#)

Significant observations about Neolithic mortuary rites can be made through the patterns and preferences observed in the beads and pendants deposited within Irish passage tombs. The standardisation of shape, colour and material utilised throughout the passage tomb tradition across Ireland indicates shared social conventions in the manufacture of beads/pendants. The pendant assemblage is composed of miniature forms of larger ritually significant items, in a small range of materials, while the overarching themes of morphological and material diversity are evident throughout the bead assemblage. The use of local material in their

manufacture suggests that linking the people involved in passage tomb ritual to their landscape was imperative. The white, black and red triad of colours demonstrated throughout the collection may be associated with rites of transformation in traditional societies, including male and female initiation rites, marriage or death. The use of colours in wider systems of symbolism is a socially constructed and culturally relative phenomenon (Keates 2002, 115); however, the themes associated with these colours in the cosmology of indigenous and prehistoric societies include life, death and regeneration. These themes and their association with rites of passage in traditional societies seem appropriate for use in Neolithic contexts associated with death, cremation and deposition.

An initial assessment suggests that the morphological, material and colour choices for passage tomb beads/pendants contrast with the bead/pendant material recovered from settlement sites and additional Neolithic ritual contexts including pits and timber circles. In these instances, beads and pendants are manufactured in deliberately irregular forms, commonly in light grey, beige or green hues (Cleary and Unitt 2011, Evans 1953, Grogan and Eogan 1987, Kiely 2003, MacNamara 2008, O'Driscòil 2004). Their deposition at architectural features including liminal and threshold areas (walls, entries, foundation trenches) and as foundation deposits (Smyth 2014a, 13-25) indicates their significance in ritual action at settlement sites (Smyth 2014b, 58-60). These pits and foundation deposits were formal, structured symbolic acts, representative of the reciprocal relationship between Neolithic people and the land, necessary to mark significant events in the lifecycle of the home and community (Cooney 2000, 197, 2008, 68, Smyth 2014b, 59). The contrast between colours and shapes chosen for passage tomb assemblages, and examples from pit and settlement sites, are extremely divergent, signifying the deliberate selective appropriation of particular shapes and colours for deposition in passage tombs. These specific physical characteristics appear to indicate established systems of symbolic content in each context. Various studies (Bradley 2000, Cooney 1998, Cummings 2002, Cumming *et al.* 2014, Darvill 2002, Scarre 2004) suggest that certain stone types appear to have

been strategically employed during monument construction in order to articulate relationships, both social and symbolic. It appears there was also an established symbolic language in beads/pendants that were manufactured and/or used in differing ritual contexts.

[6.9 Manipulating ritual items](#)

Individually, the rock types utilised for both beads and pendants exhibit aesthetically desirable qualities relating to colour, natural patterning in the rock, and different textures and lustres, properties essentially culminating in shine, sparkle, and interesting textures – qualities still sought after and desired in personal ornamentation today. Alternatively, many of the raw materials used for stone pendant production - serpentinite, gabbro, sandstone, tuff, slate, jasper and quartz - were also used to manufacture stone axes, maceheads, stone balls, and other ritually significant stone artefacts. These objects are not simply utilitarian objects, but like ornaments, ritualized objects of desire embedded with power or abstract meanings (Bradley 1998, 56, Cooney 2000, 188, MacGregor 1999, Roe 1968, Sheridan 2014, Sheridan *et al.* 1992, Simpson 1988). The use of stone in their manufacture renders them permanent icons, and their miniaturisation makes them portable and easier to manipulate during ritual action (Bailey 2005). The manufacture of pendant miniatures of ritually significant items appears to have been an established practice throughout the passage tomb tradition in Ireland. Pendants are rarely manufactured in deviating forms, in contrast with bead material which demonstrates a greater degree of individuality. It seems that the manufacture of pendants followed relatively static social conventions in contrast with beads which were subject to more artistic expression and innovation. Sheridan (2014, 310) suggests that the production of miniatures may have been a ritual tradition spanning the Middle and Late Neolithic between 3200 and 3000BC in Scotland and Ireland, although miniatures do occur in Scandanavian and Iberian passage tombs. The dates suggested by Sheridan are contemporaneous with possible dates for stone balls (Card 2013), with LeRoux's dates for the production and circulation of *haches à bouton* (1999, 146-7), the grooved pendant miniatures

in Iberia (Lillios 1995), and the production of maceheads. We could therefore view some of these miniatures, including *haches à bouton* pendants and knobbed beads, as a 'translation' of exotic prestige items, indicating a movement of ideas and shared symbolic systems, particularly between Ireland and Scotland, at this time (Carlin 2017, Jones 2012, 46-53, Scarre 2015, 2, Sheridan 2014).

[6.10 Transformation by fire](#)

Heat stress or burning is evident on 42% of the stone beads/pendants from Irish passage tombs. The inference is that beads and pendants were exposed to extreme heat, presumably as an element of mortuary garments on the cremation pyre and collected for deposition with the ashes of the human remains (Hensey 2014, 72). XRF analysis of stone bead surfaces at Knowth 1 has identified that - at least at Knowth - traces of bone were fused to the exterior by extreme heat (Eogan and Cleary 2017, 442-3, Sheridan 2014). However, recent research (Cooney 2014, Geber *et al.* 2017a, Geber *et al.* 2017b, Kuijst and Quinn 2013) into post-mortem processing of Neolithic remains from passage tombs suggests that full body cremation involving the adornment and laying out of the dead on a funerary pyre prior to the cremation act is unlikely to have been the typical mortuary rite.

Over the course of Neolithic research, it has been presumed that cremation was the primary mortuary rite associated with Irish passage tombs (Bergh 1995, Herity 1974, Malone 2001). However, re-examination of passage tomb assemblages has demonstrated that unburnt and cremated remains both occur in passage tombs (Cooney 2014, 190, Kador *et al.* 2016, Kuijst and Quinn 2013, O'Sullivan 2005). It is now suggested that these two rites were not opposing practices, but may have been used contemporaneously, possibly involved in a multi-stage mortuary rite involving disarticulation and cremation of a portion of the body some-time after death (Cooney 2016, 2014, Fowler 2005, Murphy 2003, Robb 2007). The act of cremation was likely a secondary mortuary ritual, a final point in a complex sequence of ritual actions involving de-fleshing or excarnation, disarticulation, and possibly circulation of skeletal elements (Kuijst and Quinn 2013, 172). Secondary

rites often serve as communal spiritual and symbolic acts that have social and political meanings (*ibid.*, 172). It has been suggested the act of cremation associated with passage tombs played an active role in Neolithic society and was primarily concerned with the veneration of ancestors, and the expedition of cycles of death and regeneration (Barrett 1994). In these instances, it is unlikely that the body was adorned with mortuary garments and more likely that beads/pendants and additional material culture were deployed at successive stages in the cremation process in secondary ritual action related to the cremated remains.

Current experimental research into the cremation of prehistoric remains is limited, and primarily deals with the cremation of an entire fleshed body as opposed to a token cremation of de-fleshed skeletal remains (McKinley 1993, 1997, Marshall 2011). As a result, it is difficult to ascertain the period of time and temperatures that stone bead and pendant material may have been exposed to. However, it is agreed that the act of cremation requires enormous resources and is an example of the care and investment afforded to the disposal of dead in Neolithic society. Full cremation of a complete body can take up to 1.5 hours at a temperature of 700-1000 degrees (Robb 2009, 52) and may require up to a tonne of wood (Parker-Pearson 1999, 49). Open air pyres can take up to 10 hours to burn through a complete human body with constant attention given to the re-stocking and control of the funeral pyre (Williams 2004, 271). Beads/pendants may have been incorporated at various stages of the cremation process (Fig. 6.7). Primary pyre goods are items involved in ritual activity in the lead up to the conflagration and are likely to show signs of exposure to intense heat (Marshall 2011). Secondary pyre goods are placed on the periphery of the pyre and show signs of heat but are not subjected to the intense heat experienced at the centre (*ibid.*). Secondary pyre goods are often related to an additional rite related to the destruction of materials through fire, performed as a ritual expression of the death of the individual (McKinley 1997, 263). A third scenario involves the incorporation of the bead/pendant material into the smouldering ashes of the pyre. This sequence of events has been demonstrated at a Mesolithic cremation burial from Hermitage,

Co. Limerick whereby a slate axe was incorporated into the cremation at the time of burial, and subsequently attained evidence of burning (Little *et al.* 2017).

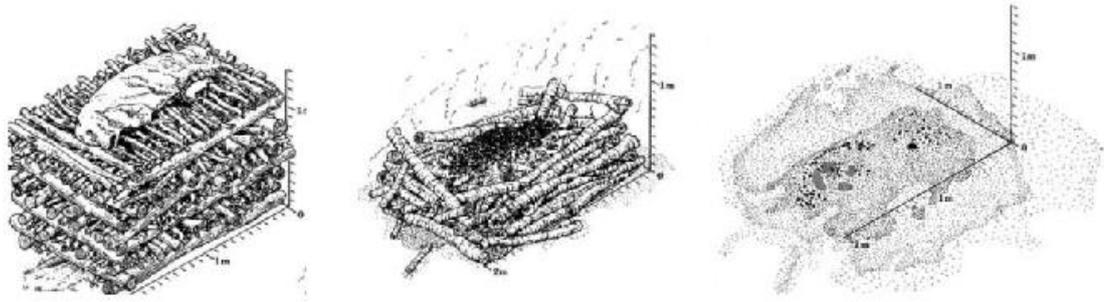


Figure 6.7: Possible stages of incorporation (a) primary pyre goods; (b) secondary pyre goods; (c) incorporation into smouldering ashes (After McKinley 1997).

The act of cremation witnessed in Irish passage tombs is likely to have been a secondary rite of transition (Van Gennep 1960) at the end of a complex sequence of ritual actions. Cremation is regarded as a transformative rite in both indigenous societies and modern western religious cultures (Brück 2006, 311, Cooney 2014). Transformation occurs at several levels both literal and symbolic, usually culminating in a communal display or act of remembrance (Goldstein and Meyers 2014, 208, Williams 2001, 206-7). The central symbolic theme associated with cremation is the physical and spiritual liberation from one stage of life to another, often the zenith of a complex series of rituals involving disarticulation, inhumation, and excarnation (Hertz 1960, Williams 2006, 240-49). In pre-industrial societies, life is sometimes considered a limited good, requiring death and its associated rituals to ensure a cyclical renewal and regeneration of life (Bloch and Parry 1982, Parry 1994).

[6.11 Fragmented identities](#)

Stone bead/pendant artefacts from passage tombs are generally found in clusters, generally display evidence of heat damage and wear, and occur in association with cremated human remains. Although there is a degree of variation, their features are restricted to a select group of colours and shapes. This indicates that the inclusion of passage tomb ritual equipment was guided by overarching principles

of inclusion and exclusion, collectively understood both temporally and spatially across Ireland throughout the construction and use of passage tomb monuments. To appreciate the significance of this collective understanding, we must gain an understanding of Neolithic people, their motivations and what objects meant to them. The adoption of agricultural practices in the Neolithic involved renewed relationships between humans and objects. New identities and concepts of ownership and belonging were forged in relation to long term entanglements with landscape and community (Hodder 2011, 50). The paradox is that through understanding this new Neolithic identity and concept of 'self' we can understand the significance of beads and pendants in passage tomb ritual, and in considering their role in these contexts we can gain an understanding of the Neolithic self (Thomas 1996, 179).

Modern Western society propagates the notion of an autonomous 'individual self' bounded by their physical being but consciously shaping their own future through reason and action (Appadurai 1988, Hodder 2012). However, in many societies the self is constructed in terms of a person's relationships with people, objects and the environmental and social landscape. This socio-centric concept of identity emphasises the fact that people are dependent on society and things to survive and thrive (Hodder 2011, Tilley 1995). In these societies, an individual's identity is considered a culmination of their social relationships (e.g wife, mother, sister); personal attributes and autonomous achievement is considered to be of a lesser importance (Brück 2001, 654). People are considered 'dividuals' as opposed to individuals, in that who they are is propagated by their connections with one another, with material culture and with their environment (Jones 2005, 194). Ultimately, all societies are constituted of people dually composed of individual and dividual elements; however, they may be considered interchangeable depending on context, or interpretation of identity within a society may be dominated by one of these aspects (*ibid.*, 196). As individuals, identity is constructed relationally and is in constant flux, as people are continuously engaging in transactions that redefine their own social and personal narrative

through the mixing and sharing of ideas, experiences and objects (Brück 2001, 2006, Jones 2015, Thomas 2002). These transactions result in the mingling of the identities of both participants creating enduring interpersonal ties. This sharing of characteristic elements occurs through processes such as marriage, parentage, feasts, or the exchange of ideas and objects (Brück 2001, 654).

In modern Western society, individuals are considered active, powerful agents. Objects, in contrast, are viewed as inanimate commodities (Hodder 2012, 256). This polarising concept of person and object is a relatively recent and a culturally exceptional phenomenon (Appadurai 1988, Hodder 2012, Ingold 2010, Kopytoff 1986, 64). In many traditional societies, and examples of cross-cultural parallels, the division between person and object is not as clearly defined. In traditional cultures where identity is forged through associations with people and things and the manufacture of items requires an investment of personal time and energy, things are not viewed as disposable, impersonal and inanimate, but represent an association with the owner, their relationship ties and a long history of use (Hodder 2014, 19-22). The person-object relationship is considered intimate and mutually dependant; they benefit from mutual associations and their biographies and identities become entangled. The object comes to be considered an extension of the self (Hodder 2011, Hoskins 1998, Thomas 1991, 1996). This extension of self means that objects are often credited with their own life force and may be animate even when inactive (Lillios 1999).

This person-object relationship could explain the similar treatment of human remains and artefacts in Irish passage tomb deposits. The destruction of an intimate personal item such as a necklace or bracelet may be motivated by belief in the animism of objects and the linking of their life force to that of their owner. The majority of stone beads and pendants from Irish passage tombs display evidence of use prior to deposition, including the removal of manufacture marks, scratching or grinding visible on the faces of the beads and the stretching of the perforation aperture as a result of stringing (see chapter 5). The indication of a life

history prior to death suggest that they were likely personal possessions of the deceased during life, either as personal ornamentation or ritual dress, and were selected as items appropriate for inclusion in the mortuary ritual (Barrett 1994, 116-118, Brück 2006, 2004). A collection of items utilized in mortuary ritual such as cremation in association with the deceased remains would indicate a personalised set of associations brought together symbolically (Hodder 2011, 65).

Their treatment and subsequent collective deposition suggest that analogies were drawn between the treatment of people and objects, including stone beads and pendants, in passage tomb ritual. Both were subjected to transformation by fire, and deliberate destruction through fragmentation prior to deposition. These deliberate acts could be motivated by a belief that all ties with this physical world need to be destroyed to allow successful transition into the next stage of life. These precautions following the death of a loved one are common in traditional societies. Alternatively, deliberate destruction or fragmentation of personal items associated with the deceased during the funerary rite may have acted as a metaphor for the loss of the deceased and the transformation of social relationships (Brück 2014). Practices involving the intentional destruction and deposition of these objects drew attention to the social impact of death, and helped people to make sense of loss and the passing of time both within and beyond their life cycles (Brück 2006, 297).

Alternatively, the deposition of partial elements of composite beadwork may suggest that curation practices involving elements of beadwork were common in Neolithic passage tomb ritual. It has been suggested that following the cremation process in the Neolithic some remains may have been retained by the living for a period of time or utilized in alternative practices as witnessed in varying cross-cultural parallels (Cooney 2016, 2014, Kuijijit and Quinn 2013). This curation of ancestral relics may have involved not only the remains of the body but also the curation and possible reincorporation of these items intimately associated with the deceased into newer secondary composite items. This curation has been

demonstrated in Bronze Age society in case studies by Danaher *et al.* (2014), Shephard (1985), and Sheridan and Davis (1998) but the practice may also have been active in Neolithic society. These processes of exchange, incorporation and repurposing of older beads suggest that in at least some instances, items of personal ornamentation may have acted as heirlooms (Parker-Pearson 1999, 85-86) perpetuating ties between the living and the dead (Barrett 1994, 122, Jones 2012, 168).

[6.12 Concluding remarks](#)

The stone beads and pendants from passage tombs exhibit a degree of standardisation that is suggestive of shared cultural conventions in their manufacture. The practice of manufacturing beads and pendants in ritually significant forms, in a deliberately exclusive range of colours from local materials, demonstrates a collective symbolism held across Neolithic society in Ireland. In addition, the miniaturisation of ritually significant Scottish, French and Iberian Neolithic artefacts might indicate shared symbolism on a larger scale.

The remains of the dead and the items associated with them were subjected to dispersal, mixing and possibly reincorporation that indicates that after death, the integrity of the personal identity or the 'self' was not retained. The use of fire as a transformative element, the deposition of beads and pendants in passage tombs, and the reincorporation of elements back into society could suggest that death was not considered the end, but a point of transformation where the individual became intimately entangled with those who have died before them and those who will pass on in the future. Ultimately, Neolithic self-identity (at least in death) was considered communal and constructed relationally. The beads and pendants from passage tomb contexts are objects of memory; that is objects with biographies symbolising and connected with the identity of the dead.

Chapter 7: Conclusion

Stone beads/pendants are a dominant element of the Irish passage tomb artefact assemblage. Despite this fact, they have never received a dedicated research programme. Beads/pendants are integral to ritual and social life in pre-industrial societies, performing important symbolic functions in ritual actions, the propagation and maintenance of identities, and the forging of relationships. As such, it was recognised that determining traditions in stone bead and pendant use and deposition could contribute to our understanding of ritual and symbolic structures associated with Irish passage tombs, and the formation of Neolithic communal and personal identities. Various types of analysis were employed in this project to extract meaningful trends in the assemblages. Desk based research identified a total of 194 stone beads, pendants and fragments from Neolithic horizons at 22 Irish passage tombs in eight counties. The artefacts were macroscopically examined at the NMI and UCD, and their technical, contextual and aesthetic features were compiled into a comprehensive catalogue. A petrographical study carried out by Dr. Stephan Mandal determined the raw material used in their manufacture and noted evidence of heat stress. In addition, a number of beads and pendants from Knockroe, Co. Kilkenny were selected as a case study and underwent use-wear analysis to define the extent and nature of use prior to deposition. The patterning evident in the entire corpus of material was then considered in relation to post-processual theoretical approaches to bead/pendants studies and passage tomb ritual in Ireland and across Europe.

New evidence of trends and disparities in the bead/pendant assemblages were explored following the above outlined analyses. The delimiting factor between beads and pendants is the specific set of physical characteristics associated with pendants. Pendant shapes are confined to miniature forms of larger, ritually significant items including maceheads and axes, in a specific range of materials. Beads display a greater diversity in both form and material than pendants. Although in some instances miniatures of larger ritual equipment can be observed

in the bead material (for example, carved stone balls), for the most part beads demonstrate unique, customised features. The beads and pendants recovered from passage tombs are well-finished from a manufacturing perspective, demonstrating regularity in form and a high level of polish.

The raw materials utilised for passage tomb beads and pendants were predominantly available locally, as primary outcrop material or as easily accessible secondary sources such as cobbles from rivers, beaches or glacial deposits. However, serpentinite and steatite (the most commonly occurring materials) were imported, possibly from the north-western counties of Donegal, Mayo and Galway to sites in the east. Steatite is the dominant lithology employed in the manufacture of both beads and pendants, accounting for 46% (=n.89) of the entire overall assemblage. Despite this, it does not occur in the Mound of the Hostages assemblage, the largest assemblage recovered from Ireland.

The preferences demonstrated in the colour analysis indicate that a tripartite colour system was employed in the selection of beads and pendants for inclusion in Irish passage tombs. These colours can be divided into three basic groups: light, dark and warm. The light grouping incorporates white and off-whites (including nudes and beiges); the dark grouping incorporates blacks and greys of varying hues; and the warm grouping incorporates browns, reds and oranges. These colour groupings are associated with themes of birth, death, regeneration and influence over the present in traditional societies and may have had similar symbolic meanings in the Irish Neolithic.

A significant portion of the bead/pendant artefacts (42% =n.81) display some characteristics of heat exposure including discolouration (blackening or bleaching), flaking of the external lithology, surface striations, cracking, spalling, and the presence of blue/white deposits and surface sheen. Use-wear analysis has highlighted various markers of wear including the removal of manufacture marks,

extension of the aperture and grinding. These factors indicate that at least a significant portion of beads/pendants were in use for a period of time and in many instances subjected to fire or heat prior to their interment in the monument. It is likely that this was the result of their incorporation in ritual actions. Additionally, microscopic examination of wear patterns has revealed new evidence of stringing which suggests that beads and pendants should be reconstructed in different styles than previously considered. New evidence suggests pendants are more likely to have formed marginal elements of a composite piece, rather than a focal piece around which the composite ornament is constructed. Additionally, smaller beads may have formed embroidered beadwork as opposed to featuring as elements of a necklace or bracelet as previously considered.

There is no distinctive spatial patterning in the bead/pendant material reflecting shared symbolic schemes associated with architectural space. Early antiquarian and archaeological reports often lack accurate recordings of spatial locations, rendering our understanding of the spatial and stratigraphic contexts of stone beads/pendants uncertain. However, it is clear that stone beads/pendants are exclusively associated with cremated human remains, but in some instances comingled unburnt and cremated remains. Variations in bead and pendant types are discernible in the assemblages as passage tombs become more developed. Type 1 monuments are responsible for producing 14% (=n.3) of the bead and pendant assemblages. The largest assemblage from a Type 1 site consists of six artefacts (the average is three), considerably smaller than those typically recovered from Type 2 (the average is seven) and Type 3 (the average is six). Additionally, only two pendants have been recovered from Type 1 sites. Type 2 tombs have produced 64% (=n.14) of bead/pendant assemblages. Large assemblages (over 10 beads) have been almost exclusively recovered from sites that could be considered Type 2. These assemblages also demonstrate the greatest diversity in material and form. Type 3 sites have produced 23% (=n.5) of assemblages. Knockroe is the only Type 3 site to have produced a large assemblage

(more than 10) with over 20 beads and pendants. The numbers of stone pendants and beads drastically decrease in the Late Neolithic with the development of Type 3 (or developed) architectural traits. Instead, there appears to be an increase in high quality ceramic pendants imitating the style of earlier stone pendants.

This detailed research has also allowed us to critically re-examine pre-existing interpretations of stone beads/pendants from Irish passage tombs. Archaeologists and antiquarians have widely recognised that pendants represent miniatures of larger recognisable Neolithic artefacts (Eogan 1986, 284, Gogan 1930, Herity 1974, 126-7, Jones 2012, O'Sullivan 2005, 239, Piggott 1954, 207). The results support this supposition and suggest that in at least some instances, replication and miniaturisation of ritually significant artefacts (such as carved stone balls) extends to the bead material. It has been extensively inferred that passage tombs beads and pendants were subjected to burning (Hensey 2014, Herity 1974, O'Sullivan 2005) as the result of their inclusion on the funeral pyre, as personal items, pyre goods or as an element of mortuary attire. While this theory is contested here, it is clear that many beads/pendants were utilised in ritual action related to fire. A significant portion of the assemblage (42%) demonstrates evidence of heat stress. In addition, in all instances passage tomb stone beads and pendants are recovered in conjunction with cremated human remains. However, the lack of heat stress visible on 58% of the beads disputes the theory that they were originally included on the pyre. It is more likely that beads/pendants were subjected to fire as a result of ritual action and did not endure high temperatures over an extended period of time, as would be the case in cremation. Additionally, it is clear that beads and pendants were not composite items such as mortuary attire or personal items when deposited in the monument. The MNI (minimum number identified) of bead/pendant deposits is markedly smaller than the MNI of human remains interred in the same deposits. Also, the number of beads/pendants recovered in association suggests deposition of fragmentary elements of a composite piece. It has previously been assumed that beads are manufactured from local material contrasting with pendants that are manufactured from exotic or imported

materials. It is now clear that the majority of the material used for both beads and pendants was available locally. In instances where material was imported, it was used to manufacture both beads and pendants in equal numbers, with the exception of serpentinite and amber.

Arguably the most significant outcomes of this research are the socio-cultural implications. Patterns discernible throughout the bead and pendant assemblages have deepened our understanding of passage tomb symbolism and Neolithic social identity and individuality. The standardisation of shape, colour and material utilised throughout the stone bead/pendant assemblages from passage tombs across Ireland indicates shared social conventions in the manufacture of beads/pendants. These physical characteristics including regularity in form, high quality finish and a dominant colour triad which differ markedly from the beads and pendants recovered from other Neolithic contexts including settlement sites, ritual pits and timber circles. These specific physical characteristics suggest an established symbolic grammar appropriate for each context, which may indicate a shared symbolic system throughout Ireland in the Neolithic. The fragmented quality of the stone bead and pendant artefacts emulates the treatment afforded to the human remains deposited in passage tombs. The separation, mingling and possible redistribution of parts of composite bead and pendant artefacts and human remains indicate that any sense of individualism was not retained after death. As such, the beads/pendants recovered from passage tombs may have acted as ritual equipment used prior to and during the transformative cremation rite, and their subsequent deposition in passage tombs aided the final act of transition of the dead to the otherworld, affording them a new corporeal identity in the world of the ancestors. Ultimately, changes in bead/pendant assemblages are reflected in the architectural style and physical characteristics of passage tombs from early monuments to developed passage tombs. The earliest Type 1 monuments produce smaller assemblages with a poorer level of manufacture and limited pendant material. The establishment of Type 2 characteristics focusing on the interior of the monument herald the introduction of larger assemblages and

the production of a wider range of beads/pendant. Finally, developed Type 3 passage tombs move away from the use of stone and begin utilising ceramic material for the production of beads/pendants. The changes that occurred in the stone bead/pendant assemblages are aligned with broader changes that were occurring within passage tomb tradition throughout the period.

[7.1 Future Research](#)

This research has illuminated the many facets of Neolithic symbolism, society and personhood that can be extracted from a dedicated study of stone bead and pendant material. However, it is clear that the Irish Neolithic bead/pendant material would benefit from further research. An extended experimental programme examining the technological aspects of bead/pendant manufacture and use would greatly enhance our understanding of the preferences of bead/pendant wearers and users, and the biography of the material. Replicative manufacturing experiments would indicate critical factors in the choice of materials for production, and the constraints in terms of production values. Experimental use-wear analyses would help define the system for suspension of the artefacts and identify prolonged periods of use for individual materials. Such a study could also examine how material behaves when exposed to fire for extended and protracted periods. An experimental programme would result in the compilation of an experimental reference collection of beads and pendants in a variety of materials and exposed to a range of stigma, including heat, for future reference. In addition, a comprehensive programme of use-wear study involving the entire catalogue of Irish Neolithic beads and pendants in comparison to the experimental reference collection would provide definitive evidence of manufacture and use prior to interment and give clearer evidence of the role of beads and pendants in their respective contexts.

An equally detailed examination of stone bead/pendant material from non-passage tomb Neolithic contexts including settlement sites, Neolithic pits and timber circles is required. Stone beads and pendants are encountered at a variety

of Neolithic site types and constitute an important proportion of the Neolithic artefact assemblage. Initial comparative analysis of beads and pendants from various Neolithic contexts suggests that the deposition of bead artefacts was governed by overarching rules regarding physical characteristics, associated material and placement. In one sense, each context was associated with a separate symbolic grammar. An extension of this research programme to encompass all Neolithic site types would conclusively establish differences in the symbolic grammar of stone beads at each site type. Neolithic beads and pendants were not exclusively manufactured from stone. They are encountered in a wide range of materials including bone, shell and ceramic material. The information obtained through this programme would supplement a broader study assimilating the wider corpus of material in order to discern the significance of varying materials in Neolithic symbolism and the negotiation of social identity through ritual action.

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Appendix A: Catalogue of Stone beads and pendants from Irish passage tombs

This catalogue was compiled as no comprehensive survey of stone beads and pendants from passage tombs in Ireland previously existed. The information contained in the following entries was extracted from published antiquarian and modern accounts of passage tomb excavations. This appendix represents the vast majority of stone beads and pendant assemblages considered primary Neolithic artefacts from Irish passage tombs. However, it is not exhaustive as in some instances, artefacts could not be located, or were too fragmentary to be definitively identified as beads or pendants. Some antiquarian accounts report the discovery of stone beads and pendants from megaliths that may be passage tombs, but the tombs have not yet been identified. In addition, as discussed in Chapter 2, the activities of antiquity dealers and the predilection for bead collections in the 19th century may have decimated the bead assemblages from many sites. Nonetheless, the purpose of this catalogue is to amalgamate all current information available, identify trends in Neolithic stone beads and pendant artefacts from passage tombs, and make this material easily accessible for further study. The catalogue contains details (Fig.7.1) on 192 beads, pendants and fragments (Table 11), the majority of which are illustrated. These illustrations were taken from published accounts in addition to supplementary sketches by the author. The images are not to scale however, the renderings are relatively accurate and detailed dimensions are provided. Each artefact (Fig.7.2) has been provided with an individual identification number for this study, in addition to the RMP identification number for the site and the National Museum of Ireland (NMI) artefact identification number. In instances where the NMI was unavailable, the excavation assemblage number has been provided. The accompanying monument plan illustrates the area where the artefact was recovered. In some instances, this could not be definitively identified. The Knockroe, material is still undergoing post excavation analysis and the entries include preliminary information about these artefacts.

Appendix A: Catalogue of Stone beads and pendants from Irish passage tombs

Study I.D.	Artefact No.	County	Townland	Site	Type	Nomenclature	Colour	Material
1	RIA1898:17.1	Fermanagh	Moylehide	Belmore	Bead	Spheroid	Orange	Amber
2	RIA1898:17.2	Fermanagh	Moylehide	Belmore	Bead	Barrel	Grey	Steatite
3	RIA1898:17.4	Fermanagh	Moylehide	Belmore	Pendant	Pestle	Brown	Limestone
4	RIA1898:17.5	Fermanagh	Moylehide	Belmore	Pendant	Hammer	Black	Steatite
5	RIA1898:17.6	Fermanagh	Moylehide	Belmore	Pendant	Axe	Grey	Limestone
6	RIA1898:17.7	Fermanagh	Moylehide	Belmore	Pendant	Pestle	Cream/White	Steatite
7	RIA1898:17.8	Fermanagh	Moylehide	Belmore	Pendant	Pestle	Cream/White	Steatite
8	RIA1898:17.9	Fermanagh	Moylehide	Belmore	Pendant	Triangular	Cream/White	Limestone
9	96E138:55	Kerry	Ballycarty	Ballycarty	Pendant	Irregular	Grey	Limestone
10	E554:188	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Pendant	Pestle	Red	Sandstone
11	E554:323	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Pendant	Hammer	Grey	Steatite
12	E554:414	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Pendant	Pestle	Grey	Mudstone
13	E554:445	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Spheroid	Red/Brown	Jasper
14	E554:339	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Spheroid	Grey	Steatite
15	E554:442	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Ring	Brown	Steatite
16	E554:189	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Irregular	Red/Grey	Mudstone
17	E554:352	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Spheroid	Cream	Steatite
18	E554:452	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Barrel	Grey	Steatite
19	E554:432	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Disc	Pink	Slate
20	C233:600	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Spheroid	Grey	Steatite
21	C236:614	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Pestle	Grey	Shale
22	C233:649	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Pendant	Axe	Red/Yellow	Sandstone
23	C236:606	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Spheroid	White	Steatite
24	C236:658	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	N/A	White	Steatite
25	C236:835	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Spheroid	Cream/Grey	Steatite
26	E554:2000	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead	Spheroid	Grey	Steatite
27	C216:2035	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Spheroid	Grey	Steatite
28	E554:883	Kilkenny	Knockroe (Kells By., Killamery ED).	Knockroe	Bead Frag	Spheroid	Grey	Sandstone
29	NMI1928:773	Leitrim	Fenagh Beg	Fenagh Beg	Pendant	Oblate	Cream/Grey	Limestone
30	NMI1928:774	Leitrim	Fenagh Beg	Fenagh Beg	Pendant	Hammer	Grey/Cream	Steatite
31	NMI1928:776	Leitrim	Fenagh Beg	Fenagh Beg	Bead	Waisted	Cream/Grey	Steatite
32	NMI1928:778	Leitrim	Fenagh Beg	Fenagh Beg	Bead	Waisted	Red/Pink	Steatite
33	NMI1928:779	Leitrim	Fenagh Beg	Fenagh Beg	Pendant	Pestle	Grey	Limestone
34	NMI1928:780	Leitrim	Fenagh Beg	Fenagh Beg	Bead	Waisted	Cream/Grey	Steatite
35	NMI716:45	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Cylindrical	Green	Serpentine
36	NMI716:46	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Pestle/Hammer	Orange	Gabbro

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37	NMI 716:47	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Bilobe	Grey	Gabbro
38	NMI 716:49	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Spheroid	Red	Jasper
39	NMI 716:50	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Blue/White	Serpentine
40	NMI 716:51	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	White	Serpentine
41	NMI 716:52	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	White/Blue	Limestone
42	NMI 716:53	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Cream/Grey	Limestone
43	NMI 716:54	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Red/Brown	Sandstone
44	NMI 716:55	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Grey	Mudstone
45	NMI 716:56	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Triangular	Green	Quartz
46	NMI 716:57	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Pestle	Cream/Black	Limestone
47	NMI 716:58	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Grey	Mudstone
48	NMI 716:59	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Red	Jasper
49	NMI 716:60	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Cylindrical	Brown/Black	Serpentine/Limestone
50	NMI 716:61	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Brown	Jasper
51	NMI 716:62	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Orange/Red	Sandstone/Jasper
52	NMI 716:63	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	N/A	Serpentine/Limestone
53	NMI 716:64	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	N/A	Serpentine/Limestone
54	NMI 716:66	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	Green	Serpentine
55	NMI 716:67	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Frag	N/A	N/A	Serpentine
56	NMI 716:70	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Bilobe	Grey	Serpentine/Limestone
57	NMI 716:74	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spool	Grey/Blue	Limestone
58	NMI 716:75	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Knobbed	Brown/Grey	Limestone
59	NMI 716:76	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spheroid	Cream	Limestone
60	NMI 716:77	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spheroid	Green/Grey	Limestone
61	NMI 716:78	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Grey/Green	Limestone
62	NMI 716:79	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Clear	Quartz
63	NMI 716:80	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Green	Quartz
64	NMI 716:81	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Cream	Limestone
65	NMI 716:82	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Cream/Grey	Limestone
66	NMI 716:83	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Orange/Red	Amber
68	NMI 716:84	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Grey	Limestone
69	NMI 716:85	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Red	Sandstone
70	NMI 716:86	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Green	Quartz
71	NMI 716:87	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spheroid	Grey	Mudstone
72	NMI 716:88	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spheroid	Brown	Limestone
73	NMI: 716:89	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spheroid	Cream	Limestone
74	NMI 716:90	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Brown/Grey	Limestone

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75	NMI 716:91	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Barrel	White	Limestone
76	NMI 716:92	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Barrel	Red/Orange	Mudstone
77	NMI 716:93	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spool	Yellow/Grey	Tuff
78	NMI 716:94	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Spool	Grey/Blue	Limestone
79	NMI 716:95	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Black	Mudstone
80	NMI 716:96	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Red	Limestone
81	NMI 716:97	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Black	Mudstone
82	NMI 716:98	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Black	Mudstone
83	NMI 716:99	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Ring	Yellow/Red	Limestone
84	NMI 716:100	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Brown	Mudstone
85	NMI 716:101	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Grey	Limestone
86	NMI 716:102	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead Frag	Spheroid	Brown	Mudstone
87	NMI 716:103	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Disc	N/A	Shale
88	NMI 716:105	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Cylindrical	N/A	Grinoid
89	NMI 716:106	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	N/A	Brown	Sandstone
90	NMI 716:108	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Barrel	Grey	Limestone
91	NMI 716:109	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Grey	Limestone
92	NMI 716:110	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Circular	Blue/Grey	Mudstone
93	NMI 716:289	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Pestle/Hammer	Orange	Jasper
94	NMI 716:290	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Pendant	Hammer	N/A	N/A
95	NMI 716:412	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Frag	N/A	N/A	Steatite
96	NMI 716:415a	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Disc/Ring	White	Crinoid
97	NMI 716:415b	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Disc/Ring	White	Crinoid
98	NMI 716:492a	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Ring	White	Crinoid
99	NMI 716:492b	Meath	Castleboy (Skreen By., Tara Par.)	Mound of the Hostages	Bead	Disc	White	Crinoid
100	NMI 1942:149	Meath	Corstown (Fore By.)	Loughcrew H	Bead	Disc	Cream/White	Limestone
101	NMI 1942:949	Meath	Corstown (Fore By.)	Loughcrew R2	Pendant	Pestle	Grey	Limestone
102	NMI 1942:960	Meath	Corstown (Fore By.)	Loughcrew R2	Pendant	Pestle	Brown	Mudstone
103	NMI 1942:948	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Waisted	Grey	Steatite
104	NMI 1942:947	Meath	Corstown (Fore By.)	Loughcrew R2	Pendant	Bilobe	N/A	N/A
105	NMI 1942:956	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Barrel	Grey/Cream	Steatite
106	NMI 1942:954	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Barrel	Grey	Steatite
107	NMI 1942:957	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Spheroid	Grey	N/A
108	NMI 1942:953	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Spheroid	Grey	N/A
109	NMI 1942:951	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Barrel	Grey/Cream	Steatite
110	NMI 1942:955	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Spheroid	Grey	Mudstone
111	NMI 1942:959	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Circular	Grey	Steatite

Appendix A: Catalogue of Stone beads and pendants from Irish passage tombs

112	NMI 1942:961	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Circular	Grey/Cream	Steatite
113	NMI 1942:958	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Spheroid	Orange/Red	Steatite
114	NMI 1942:962	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Circular	Grey/Cream	Steatite
115	NMI 1942:950	Meath	Corstown (Fore By.)	Loughcrew R2	Bead Frag	N/A	Blue	Limestone/Steatite
116	SA1900:37.1	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Disc	Cream	Steatite
117	SA1900:37.2	Meath	Corstown (Fore By.)	Loughcrew R2	Bead	Disc	Black	Steatite
118	NMI E8:33	Meath	Fourknocks	Fourknocks 1	Pendant	Pestle	Brown	Jasper
119	NMI E8:20	Meath	Fourknocks	Fourknocks 1	Pendant	Pestle	Orange/Brown	Jasper
120	NMI E8:26	Meath	Fourknocks	Fourknocks 1	Pendant	Cylindrical	Brown	Mudstone
121	NMI E8:30	Meath	Fourknocks	Fourknocks 1	Pendant	Cylindrical	Cream	Steatite
122	NMI E8:37	Meath	Fourknocks	Fourknocks 1	Pendant	Cylindrical	Grey	Steatite
123	NMI E8:19	Meath	Fourknocks	Fourknocks 1	Bead	Oblate	N/A	Steatite
124	NMI E8:35	Meath	Fourknocks	Fourknocks 1	Bead	Barrel	N/A	Steatite
125	NMI E8:36	Meath	Fourknocks	Fourknocks 1	Bead	Spool	N/A	Steatite
126	NMI E8:53	Meath	Fourknocks	Fourknocks 1	Bead	Ring	Grey	Steatite
127	NMI E8:38	Meath	Fourknocks	Fourknocks 1	Bead	Ring	Black	Steatite
128	NMI E8:18	Meath	Fourknocks	Fourknocks 1	Bead	Ring	White	Grinoid
129	NMI E70:2	Meath	Knouth	Knouth 1	Bead	Spheroid	Red	Volcanic Rock
130	NMI E70:212	Meath	Knouth	Knouth 1	Pendant	Pestle	Red/Brown	Jasper
131	NMI E70:346	Meath	Knouth	Knouth 1	Pendant	Pestle	Red	Fine-grained organic rock
132	NMI E70:216a	Meath	Knouth	Knouth 1	Bead	Knobbed	Grey/Brown	Carbonate Stone
133	NMI E70:180a	Meath	Knouth	Knouth 1	Bead Frag	Knobbed	Grey/Brown	Metamorphic Rock
134	NMI E56:567	Meath	Newgrange	Newgrange	Pendant	Pestle	Red	Steatite
135	NMI E56:568	Meath	Newgrange	Newgrange	Pendant	Hammer	Brown	Steatite
136	NMI E56:575b	Meath	Newgrange	Newgrange	Pendant	Hammer	Brown	Steatite
137	NMI E56:576a	Meath	Newgrange	Newgrange	Pendant	Pestle	Brown	Steatite
138	NMI E56:549	Meath	Newgrange	Newgrange	Bead	Barrel	Red	Steatite
139	NMI E56:577a	Meath	Newgrange	Newgrange	Bead	Disc	White	Steatite
140	NMI X4245	Meath	Newtown (Fore By., Moylah ED.)	Loughcrew I	Pendant	Pestle	Grey	Steatite
141	NMI X4242	Meath	Newtown (Fore By., Moylah ED.)	Loughcrew I	Bead	Barrel	Grey	Steatite
142	NMI X4243	Meath	Newtown (Fore By., Moylah ED.)	Loughcrew I	Pendant	Pestle	Red/Brown	Jasper
143	NMI X4244	Meath	Newtown (Fore By., Moylah ED.)	Loughcrew I	Pendant	Hone	Brown	Sandstone
144	NMI 1942:1209	Meath	Patrickstown	Loughcrew X1	Pendant	Pestle	Blue	Steatite
145	NMI 1942:883	Meath	Patrickstown	Loughcrew X2	Pendant	Pestle	Red	Jasper
146	NMI 1942:882	Meath	Patrickstown	Loughcrew X2	Pendant	Pestle	Red	Jasper
147	NMI 1942:881	Meath	Patrickstown	Loughcrew X2	Pendant	Pestle	Grey/Cream	Steatite
148	NMI 1942:880	Meath	Patrickstown	Loughcrew X2	Bead	Circular	Grey	Steatite
149	NMI RSAI.77.3	Sligo	Carnaweeleen	Carrowkeel R	Bead	Circular	Grey	Dolerite

Appendix A: Catalogue of Stone beads and pendants from Irish passage tombs

150	NMI E624:53	Sligo	Carrowkeel	Carrowkeel F	Bead	Barrel	Cream	Steatite
151	NMI E624:54	Sligo	Carrowkeel	Carrowkeel F	Bead Frag	Spheroid	Black	Steatite
152	NMI E624:55	Sligo	Carrowkeel	Carrowkeel F	Bead	Spheroid	Brown/Red	Jasper
153	NMI E624:28	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Pestle	Brown/Grey	Steatite
154	NMI E624:29	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Pestle	Black	Steatite
155	NMI E624:30	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Pestle	Black	Steatite
156	NMI E624:31	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Axe	Cream	Unknown
157	NMI E624:32	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Axe	Grey	Steatite
158	NMI E624:33	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Axe	Cream	Steatite
159	NMI E624:34	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Black	Steatite
160	NMI E624:35	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Black	Steatite
161	NMI E624:36	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Black	Steatite
162	NMI E624:37	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Brown	Steatite
163	NMI E624:38	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Brown	Limestone
164	NMI E624:39	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Axe	Cream	Steatite
165	NMI E624:40	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Grey	Steatite
166	NMI E624:41	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Circular	Brown	Steatite
167	NMI E624:42	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Circular	Grey	Steatite
168	NMI E624:43	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Disc	Black	Steatite
169	NMI E624:44	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead Frag	Barrel	Grey	Limestone
170	NMI E624:45	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Grey	Steatite
171	NMI E624:46	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Disc	Brown	Steatite
172	NMI E624:47	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Disc	Grey	Steatite
173	NMI E624:48	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Disc	Brown	Steatite
174	NMI E624:49	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Disc	Brown	Steatite
175	NMI E624:51	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Pendant	Cylindrical	White/Grey	Limestone
176	NMI E624:50	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Barrel	Black	Steatite
177	NMI E624:52	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	Bead	Disc	Brown	Steatite
178	NMI E624:21	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Pendant	Pestle	Brown	Steatite
179	NMI E624:22	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Pendant	Pestle	Brown	Jasper
180	NMI E624:23	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Pendant	Pestle	Grey	Limestone
181	NMI E624:24	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Pendant	Pestle	Cream	Steatite
182	NMI E624:25	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Pendant	Pestle	Grey	Steatite
183	NMI E624:26	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Bead	Spheroid	Brown/Red	Jasper
184	NMI E624:27	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Bead	Spheroid	Brown/Red	Jasper

Appendix A: Catalogue of Stone beads and pendants from Irish passage tombs

185	NMI 1969:838	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	Pendant	Hammer	Cream	N/A
186	NMI 1887:37	Sligo	Carrowmore (Carbury By.)	Carrowmore 3	Pendant	Cylindrical	Clear/White	Quartz
187	NMI 1887:38	Sligo	Carrowmore (Carbury By.)	Carrowmore 3	Bead	Spheroid	White	Steatite
188	NMI 1887:40	Sligo	Carrowmore (Carbury By.)	Carrowmore 3	Bead	Barrel	White	Steatite
189	NMI 1887:39	Sligo	Carrowmore (Carbury By.)	Carrowmore 3	Bead	Spheroid	Yellow	Steatite
190	NMI E199:1	Sligo	Carrowmore (Carbury By.)	Carrowmore 4	Bead	Spheroid	Orange	Limestone
191	NMI E199:2	Sligo	Carrowmore (Carbury By.)	Carrowmore 4	Bead	Barrel	Grey	Steatite
192	NMI E47:1	Waterford	Harristown	Harristown	Pendant	Axe	Brown	Mudstone

Table 11: Summary catalogue of Stone beads and pendants from Irish Passage tombs (after author).

Catalogue Entry	
Co.	County
Td.	Townland
Site	Site name
T	Type (i.e. bead/pendant)
N	Nomenclature (shape)
C	Colour (Primary colour/secondary colour)
M	Material
L	Maximum length of bead
D	Maximum diameter of bead
W	Maximum Width or thickness of bead at one end
SoP	Shape of perforation (uni-conical, bi-conical)
DoP	Maximum diameter of the perforation
Dec	Decorative additions
B/C	Evidence of burning/cremation
Ass. B/P	Individual numbers of associated beads/pendants
Cxt	Available information on the artefact context
Primary Ref.	Primary reference for information
Image Ref.	Reference for the accompanying images

Table 12: Legend of catalogue abbreviations (by author).

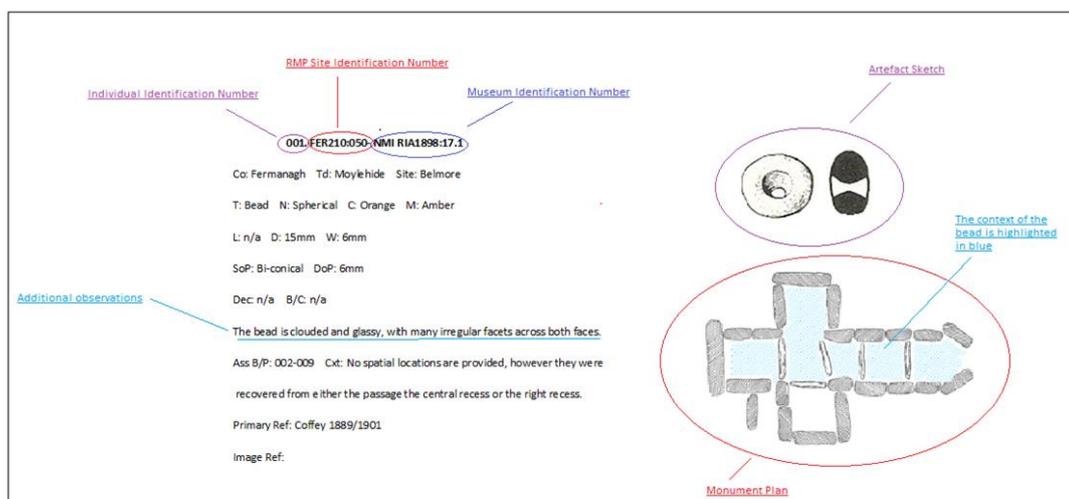


Figure 7.1: Schematic diagram of a catalogue entry (by author).

001. FER210:050- NMI RIA1898:17.1

Co: Fermanagh Td: Moylehide Site: Belmore

T: Bead N: Spheroid C: Orange M: Amber

L: n/a D: 15mm W: 6mm

SoP: Bi-conical DoP: 6mm

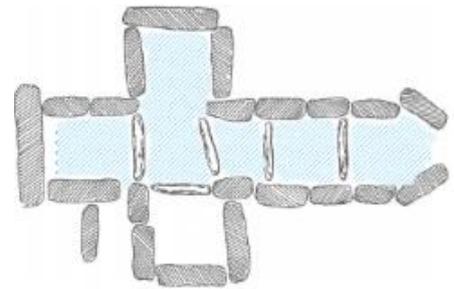
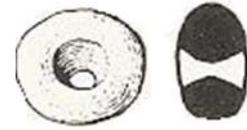
Dec: n/a B/C: n/a

The bead is clouded and glassy, with many irregular facets across both faces.

Ass. B/P: 001-009 Cxt: No spatial locations are provided, however, they were recovered from either the passage the central recess or the right recess.

Primary Ref: Coffey 1889/1901

Image Ref: Herity 1974

**002. FER210:050- NMI RIA1898:17.2**

Co: Fermanagh Td: Moylehide Site: Belmore

T: Bead N: Barrel C: Grey M: Steatite

L: 13mm D: 8mm W: n/a

SoP: Cylindrical DoP: 4mm

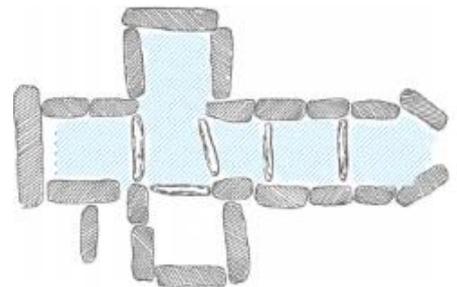
Dec: n/a B/C: n/a

Flattening, and faceting at both ends, possibly from grinding against other beads.

Ass. B/P: 001-009 Cxt: No spatial locations are provided, however they were recovered from either the passage the central recess or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 197



003. FER210:050- NMI RIA1898:17.4

Co: Fermanagh Td: Moylehide Site: Belmore

T: Pendant N: Pestle C: Brown M: Limestone

L: 23mm D:11mm W: 15mm

SoP: Bi-conical DoP: 7mm

Dec: n/a B/C: n/a

Slight and striations across the face of the bead, well-polished

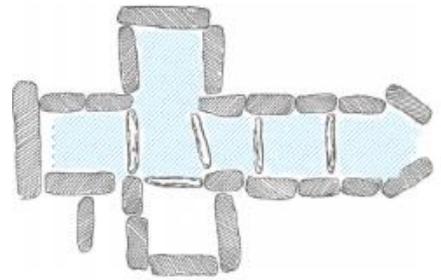
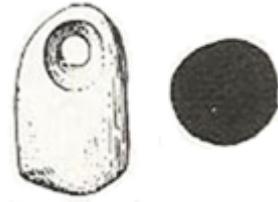
Ass. B/P: 001-009 Cxt: No spatial locations are provided, however

they were recovered from either the passage the central recess

or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 1974

**004. FER210:050- NMI RIA1898:17.5**

Co: Fermanagh Td: Moylehide Site: Belmore

T: Pendant N: Hammer C: Black M: Steatite

L: 15mm D: 10mm W: 6mm

SoP: Cylindrical DoP: 6mm

Dec: Groove encircling the domed end B/C: n/a

Some circular manufacture marks visible internally.

Visible flattening around the perforation of both faces.

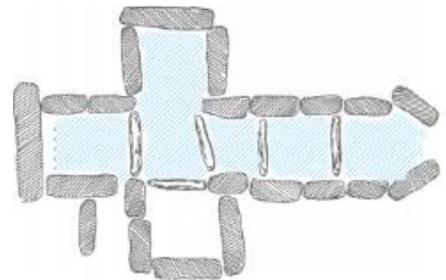
Ass. B/P: 001-009 Cxt: No spatial locations are provided,

however they were recovered from either the passage the

central recess or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 1974



005. FER210:050- NMI 1898:17.6

Co: Fermanagh Td: Moylehide Site: Belmore

T: Pendant N: Axe C: Grey M: Limestone

L: 17mm D: 9mm W: 7mm

SoP: Bi-conical DoP: 5mm

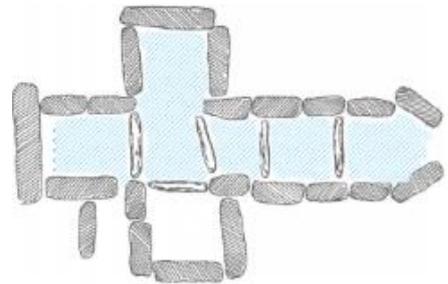
Dec: n/a B/C: n/a

Flat sectioned and narrow with striations across the front face and rust coloured discolouration across the back face.

Ass. B/P: 001-009 Cxt: No spatial locations are provided, however they were recovered from either the passage the central recess or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 1974

**006. FER210:050- NMI RIA1898:17.7**

Co: Fermanagh Td: Moylehide Site: Belmore

T: Pendant N: Pestle C: Cream/White M: Steatite

L: 20mm D: 8mm W: 5mm

SoP: Cylindrical DoP: 5.5mm

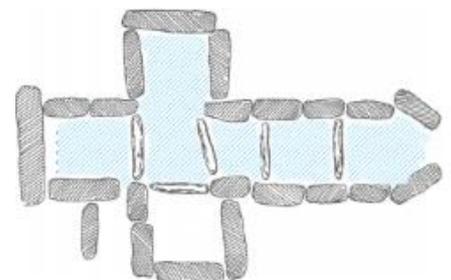
Dec: n/a B/C: Burnt, chalky

Grey discolouration and grooves across both faces from heat

Ass. B/P: 001-009 Cxt: No spatial locations are provided, however they were recovered from either the passage the central recess or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 197



007. FER210:050- NMI RIA1898:17.8

Co: Fermanagh Td: Moylehide Site: Belmore

T: Pendant N: Pestle C: Cream/White M: Steatite

L: 16mm D: 10mm W: 8mm

SoP: Cylindrical DoP: 4mm

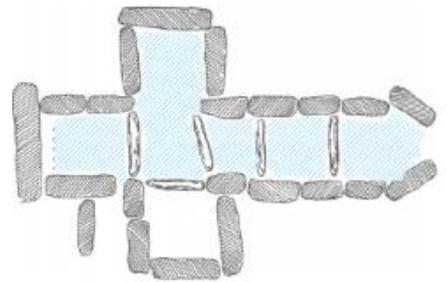
Dec: Groove encircling the domed end B/C: n/a

Large portion of the back face is missing, possible weathering.

Ass. B/P: 001-009 Cxt: No spatial locations are provided, however, they were recovered from either the passage the central recess or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 1974

**008. FER210:050- NMI RIA1898:17.9**

Co: Fermanagh Td: Moylehide Site: Belmore

T: Pendant N: Triangular C: Cream/White M: Limestone

L: 14mm D: 16mm W: 6.5mm

SoP: Bi-conical DoP: 4mm

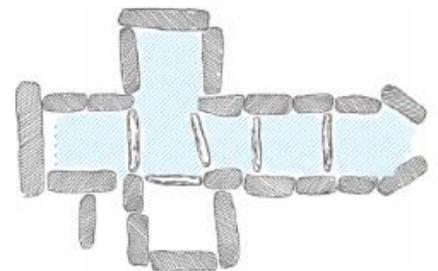
Dec: n/a B/C: Possibly heated

Discolouration and striations across both faces from heat

Ass. B/P: 001-009 Cxt: No spatial locations are provided, however they were recovered from either the passage the central recess or the right recess

Primary Ref: Coffey 1889/1901

Image Ref: Herity 1974



009. KE038-074-- 96E138:55

Co: Kerry Td: Ballycarty Site: Ballycarty

T: Pendant N: Irregular C: Beige M: Limestone

L: 16mm D: 9mm W: 7mm

SoP: Circular DoP: 2mm

Dec: n/a B/C: n/a

This pendant is comprised of water rolled limestone

with a domed profile. The pendant is transversely

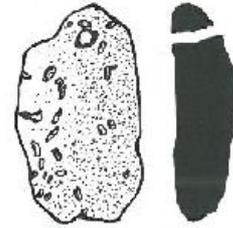
perforated through the wider and thinner end.

Ass. B/P: n/a Cxt: the second phase of construction in

the chamber in a context containing cremated bone and charcoal

Primary Ref: Connolly 1999

Image Ref: Connolly 1999

**010. KK034-019001- E554:188**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Pendant N: Pestle C: Red M: Sandstone

L: 9.88mm D: 9.25mm W: 4.89mm

SoP: Bi-conical DoP: 4.8mm

Dec: Natural striations B/C: Burnt

Splayed perforation, use-wear found evidence of wear within the perforation

Ass. B/P: n/a Cxt: Recovered from disturbed collapse in the outer

compartment of the east tomb in the same context as a bone spacer,

and flint rolled pebble

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



011. KK034-019001- E554:323

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Pendant N: Hammer C: Grey M: Steatite

L: 16.84mm D: 11.13mm W: 12.70mm

SoP: Bi-conical DoP: 5.82mm

Dec: n/a B/C: n/a

Use-wear analysis noted a loss of volume on the back face and

evidence of wear on the right of the perforation

Ass. B/P: n/a Cxt: Recovered from the inner chamber area against

orthostat R8 with pottery sherds and enclosed by undisturbed cremation deposits

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**012. KK034-019001- E554:414**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Pendant N: Pestle C: Grey M: Mudstone

L: 18.6mm D: 10mm W: 10mm

SoP: Bi-conical DoP: 5.5mm

Dec: n/a B/C: Burnt

Splayed perforation, use-wear analysis found evidence of wear around

and within the perforation and a loss of volume on the back face

Ass. B/P: n/a Cxt: Recovered from the uppermost layer

of the cairn around the entrance to the west tomb in association with quartz

fragments and Neolithic and modern artefacts

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



013. KK034-019001- E554:445

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Spheroid C: Red/Brown M: Jasper

L: n/a D: 10mm W: 7mm

SoP: Cylindrical DoP: 4mm

Dec: n/a B/C: Burnt

Significantly fragmented, displays a high degree of polish, there is an indentation visible to one side of the perforation

Ass. B/P: n/a Cxt: passage of the west tomb between orthostats 4 and 5

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**014. KK034-019001- E554:339**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Spheroid C: Grey M: Steatite

L: n/a D: 14mm W: 10mm

SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: n/a

Slight rust coloured patina across a pitted surface, use-wear identified grooves around the inside of the perforation

Ass. B/P: n/a Cxt: Area 2 south of the tomb

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



015. KK034-019001- E554:442

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Ring C: Brown M: Steatite

L: n/a D: 9mm W: 3mm

SoP: Bi-conical DoP: 4.5mm

Dec: n/a B/C: Burnt

Appears to have sustained a lot of damage to the front face

Ass. B/P: 017 Cxt: Recovered from the chamber of the west tomb

in front of orthostat 7

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**016. KK034-019001- E554:189**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Unusual C: Red/Grey M: Mudstone

L: 24.5mm D: 9mm W: 2.5mm

SoP: n/a DoP: n/a

Dec: Natural striations B/C: n/a

Half of an usually shaped and coloured bead

Ass. B/P: n/a Cxt: recovered at sillstone 4 at the entrance to the right hand

recess, possibly in association with Carrowkeel ware

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



017. KK034-019001- E554:352

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Spheroid C: Cream M: Steatite

L: n/a D: 11mm W: 7mm

SoP: Bi-conical DoP: 3.5mm

Dec: n/a B/C: Burnt

Very damaged around the perforation and the front face

Ass. B/P: n/a Cxt: Passage in the west tomb in front of orthostat 10

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**018. KK034-019001- E554:452**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Barrel C: Grey M: Steatite

L: 4.5mm D: 9mm W: 6.5mm

SoP: Bi-conical DoP: n/amm

Dec: n/a B/C: Burnt

Broken along the perforation, glossy surface with grey discolouration

Ass. B/P: 014 Cxt: Passage in the west tomb between orthostat

10 and sill 1

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



019. KK034-019001- E554:432

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Disc C: Pink M: Slate

L: n/a D: 7mm W: 2mm

SoP: Cylindrical DoP: 2.5mm

Dec: n/a B/C: Burnt

Discolouration across the surface, groove marks evident either side of the perforation

Ass. B/P: 020 Cxt: Passage in the west tomb in front of orthostat 10

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**020. KK034-019001- C233:600**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Spheroid C: Grey M: Steatite

L: 9mm D: 6.5mm W: 14mm

SoP: n/a DoP: n/a

Dec: n/a B/C: n/a

Broken across the perforation, now a fragment possibly well finished

Ass. B/P: 021 Cxt: deposit of material that originated within the west tomb but leaked through a gap in the sill and orthostat 1 including cremated bone, and other passage tomb artefacts.

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



021. KK034-019001- C236:614

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Pestle C: Grey M: Shale

L: 12.5mm D: 8mm W: 10mm

SoP: Bi-conical DoP: 6.21mm

Dec: n/a B/C: n/a

Perforation markedly more splayed on F1 than F2, manufacture marks

visible within the perforation. Rust colour discolouration.

Ass. B/P: 022 Cxt: between floor slab L5 and L6 in the inner

compartment, of the west tomb above packing stones in association

with cremated human bone and additional Neolithic artefacts

including bone spacers

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**022. KK034-019001- C233:S511:649**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Pendant N: Axe C: Red/Yellow M: Sandstone

L: 15.5mm D: 14mm W: 15mm

SoP: Bi-conical DoP: 4.5mm

Dec: n/a B/C: Burnt

Very damaged around the perforation and the front face

Ass. B/P: 019 Cxt: Passage in the west tomb in front of orthostat 10

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



023. KK034-019001- C236:606

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Spheroid C: White M: Steatite

L: 8mm D: 7mm W: 3mm

SoP: Bi-conical DoP: 4.5mm

Dec: n/a B/C: Burnt

Rust discolouration, and extremely weathered

Ass. B/P: 020 Cxt: Passage of the western tomb in front of GL6

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

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**024. KK034-019001- C236:658**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Pendant/Bead Fragment N: n/a C: White M: Steatite

L: 10mm D: 5.5mm W: 7.5mm

SoP: n/a DoP: n/a

Dec: n/a B/C: Burnt

Very weathered grey discolouration across face, broken along the perforation.

Difficult to discern whether a bead or pendant as no morphological cues exist.

Ass. B/P: n/a Cxt: inside the entrance of the west tomb, in an undisturbed primary

deposit of cremated bone between orthostats L1 and L2

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



025. KK034-019001- C236:S507:SF835

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Spheroid C: Cream/Grey M: Steatite

L: 8mm D: 8.5mm W: 6.5mm

SoP: n/a DoP: 4mm

Dec: n/a B/C: Burnt

Rust discolouration on the face of the bead, extremely fragile and highly polished. Broken along the perforation, almost 50% of the volume of the bead is missing.

Ass. B/P: n/a Cxt: beneath floor slab L5 and L6 in the inner compartment, above packing stones in association with cremated human bone and additional Neolithic artefacts

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**026. KK034-019001- E554:2000**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead N: Spheroid C: Grey M: Steatite

L: n/a D: 14mm W: 8.5mm

SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: Burnt

Extremely worn on one side of the perforation, cracked and pitted surface and deeply grooved on the lower perforation with a cracked surface

Ass. B/P: n/a Cxt: a dense area of cremated remains in the middle compartment and extending into the passage of the west tomb, containing a mix of artefacts including bone and antler pins, beads, pendants and spacers

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



027. KK034-019001- C216:2035

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Spheroid C: Grey M: Steatite

L: n/a D: n/a W: n/a

SoP: n/a DoP: n/a

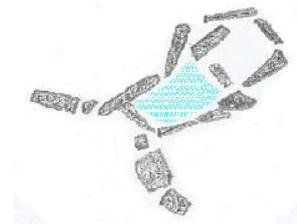
Dec:n/a B/C: Burnt

Small bead fragment, difficult to discern

Ass. B/P: n/a Cxt: a dense area of cremated remains in the middle compartment and extending into the passage of the west tomb, containing a mix of artefacts including bone and antler pins, beads, pendants and spacers

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.

**028. KK034-019001- E554:883**

Co: Kilkenny Td: Knockroe (Kells By., Killamery ED) Site: Knockroe

T: Bead Fragment N: Spheroid C: Grey M: Sandstone

L: n/a D: n/a W: n/a

SoP: Bi-conical DoP: n/a

Dec:n/a B/C: Burnt

The interior of the bead is glossy possibly due to heat

Ass. B/P: n/a Cxt: west tomb interior

Primary Ref: O'Sullivan 2010; O'Sullivan pers. comm.

Image Ref: By author.



029. LE025-093001- NMI 1928:773

Co: Leitrim Td: Fenagh Beg Site: Fenagh Beg

T: Pendant N: Oblate C: Cream/Grey M: Limestone

L: 48.5mm D: 41mm W: 18mm

SoP: Cylindrical DoP: 5mm

Dec: n/a B/C: Burnt

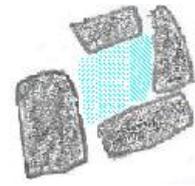
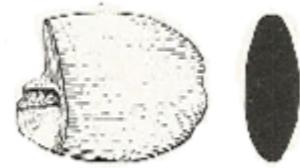
A water rolled cobble, missing a piece at one end and faceted

Ass. B/P: 029-034 Cxt: In the chamber with stone balls, and the head of

a poppy bone pin

Primary Ref: Carey 1928

Image Ref: Herity 1974

**030. LE025-093001- NMI 1928:774**

Co: Leitrim Td: Fenagh Beg Site: Fenagh Beg

T: Pendant N: Hammer C: Grey/Cream M: Steatite

L: 19mm D: 13mm W: 10mm

SoP: Cylindrical DoP: 6mm

Dec: n/a B/C: Possibly burned

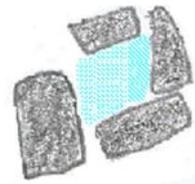
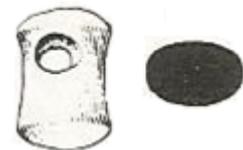
Slight wear on both faces particularly around the perforation,
discoloured and chaky.

Ass. B/P: 029-34 Cxt: In the chamber with stone balls, and

the head of a poppy bone pin

Primary Ref: Carey 1928

Image Ref: Herity 1974



031. LE025-093001- NMI 1928:776

Co: Leitrim Td: Fenagh Beg Site: Fenagh Beg

T: Bead N: Waisted C: Cream.Grey M: Steatite

L: 21mm D: 18mm W: 19mm

SoP: Bi-conical DoP: 5.5mm

Dec: Groove running around the centre B/C: Burnt

Discoloured and cracked extending within perforation

resulting in a loss of volume from one face, very worn

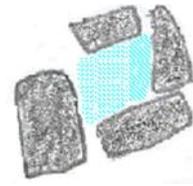
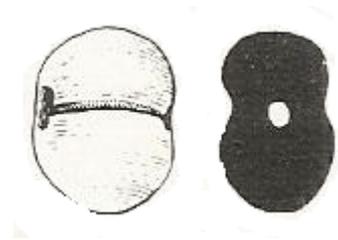
around the perforation on the same face.

Ass. B/P: 029-34 Cxt: In the chamber with stone balls

and the head of a poppy bone pin

Primary Ref: Carey 1928

Image Ref: Herity 1974

**032. LE025-093001- NMI 1928:778**

Co: Leitrim Td: Fenagh Beg Site: Fenagh Beg

T: Bead N: Waisted C: Red/Pink M: Steatite

L: 17mm D: 14mm W: 15mm

SoP: Bi-conical DoP: 4mm

Dec: Groove round the waist of the bead B/C: Burnt

Blue discolouration and chalky surface, the external fabric is extremely corroded.

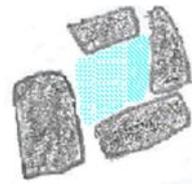
Very worn around the perforation on one face

Ass. B/P: 029-34 Cxt: In the chamber with stone balls

and the head of a poppy bone pin.

Primary Ref: Carey 1928

Image Ref: Herity 1974



033. LE025-093001- NMI 1928:779

Co: Leitrim Tld: Fenagh Beg Site: Fenagh Beg

T: Pendant N: Pestle C: Grey M: Limestone

L: 15.5mm D: 12mm W: 11mm

SoP: Bi-conical DoP: 6mm

Dec: Slight burr carved into the lower end B/C: Burnt

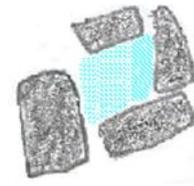
The perforation is splayed on one face, well-polished

Ass. B/P: 029-34 Cxt: In the chamber with stone balls

and the head of a poppy bone pin

Primary Ref: Carey 1928

Image Ref: Herity 1974

**034. LE025-093001- NMI 1928:780**

Co: Leitrim Td: Fenagh Beg Site: Fenagh Beg

T: Bead N: Waisted C: Cream/Grey M: Steatite

L: 14mm D: 10mm W: 9mm

SoP: n/a DoP: 4mm.

Dec: Groove along the waist B/C: n/a

Fractured and friable in both surfaces, wear visible around the top

of the perforation.

Ass. B/P: 029-34 Cxt: In the chamber with stone balls

and the head of a poppy bone pin

Primary Ref: Carey 1928

Image Ref: Herity 1974



035. ME31-033007- NMI 716:45

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Cylindrical C: Green M: Serpentinite

L: 31mm D: 11mm W: 10mm

SoP: Cylindrical DoP: 7mm

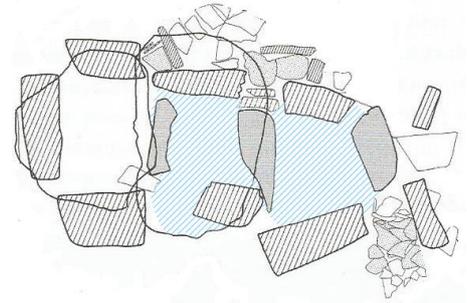
Dec: Spiral grooves encircling the body ending with a horizontal groove on the domed end B/C: n/a

Has a slightly curved outline narrowing from the centre to the ends. Perforation occurs at the narrower end. Appears to be highly polished with evidence of wear from adjacent beads.

Ass. B/P: n/a Cxt: Located in the passage

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**036. ME31-033007- NMI 716:46**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Pestle Hammer C: Orange Yellow M: Gabbro

L: 27mm D: 13mm W: n/a

SoP: Bi-conical DoP: 6mm

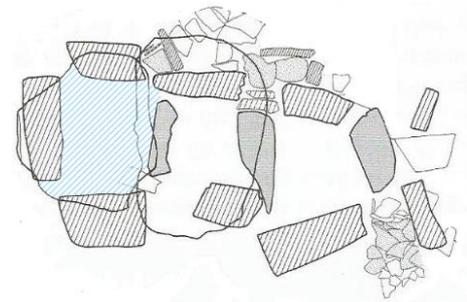
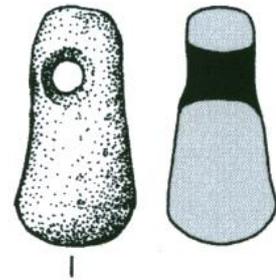
Dec: n/a B/C: n/a

Has an ovoid to circular section broadening from the perforated head to the domed base. There are dark brown patches.

Ass. B/P: n/a Cxt: Top of the cremation layer at the base of the inner compartment under stiff yellow soil

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



037. ME31-033007- NMI 716: 47

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Bilobe C: Grey M: Gabbro

L: 16mm D: 14mm W: n/a

SoP: Broken at perforation DoP: n/a

Dec: n/a B/C: Burnt

Broken along the perforation and so has one lobe slightly

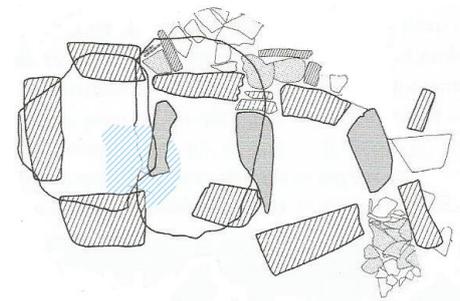
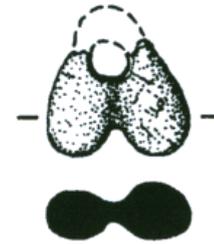
longer than the other.

Ass. B/P: n/a Cxt: Main cremation deposit at the entrance to the

inner compartment on the South side of the tomb

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**038. ME31-033007- NMI 716:49**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer/Ovoid/Barrel C: Red M: Jasper

L: 18mm D: 13mm W: 9.7mm

SoP: Biconical DoP: 8mm

Dec: n/a B/C: n/a

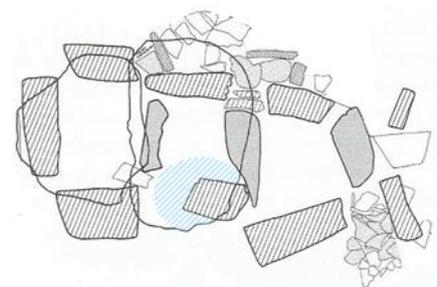
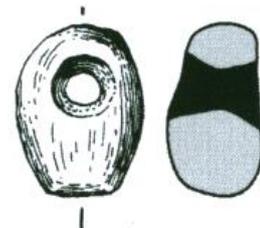
Appears to be manufactured from a natural pebble of red sandstone.

Signs of wear from adjacent beads occur on the upper part of the pendant.

Ass. B/P: n/a Cxt: Recovered near orthostat L2 in the middle compartment

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



039. ME31-033007- NMI 716:50

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Blue/White M: Serpentine

L: 21mm D: 9mm W: 10mm

SoP: Cylindrical DoP: 5.5mm

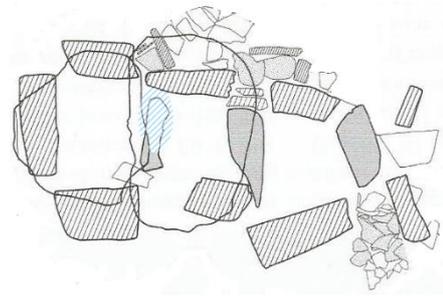
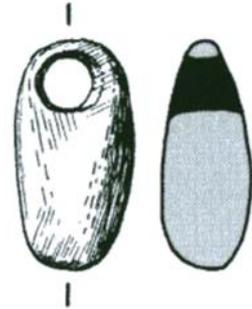
Dec: n/a B/C: Burnt

Pendant has a flattened ovoid section, with wear from adjacent beads and pendants on the face. Perforation is quite large and seems worn.

Ass. B/P: n/a Cxt: Found in a dirty cremation over the middle sillstone East of the backstone

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**040. ME31-033007- NMI 716:51**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: White M: Serpentine

L: 16mm D: 11mm W: 9mm

SoP: Irregular bi-conical DoP: 5.5mm

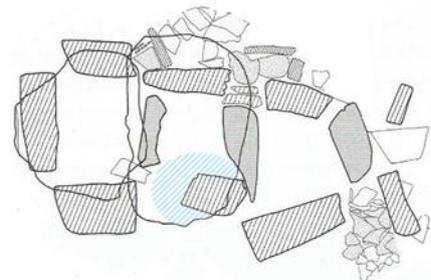
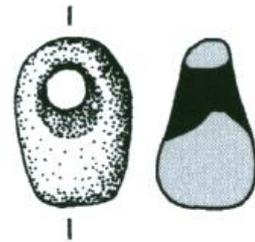
Dec: n/a B/C: /a

Pendant has a flattened ovoid section again and is fashioned from a white stone with black and yellow mottling. The perforation runs obliquely.

Ass. B/P: n/a Cxt: Middle compartment of the tomb near orthostat L2

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



041. ME31-033007- NMI 716:52

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: White/Blue/Grey M: Limestone

L: 20mm D: 11mm W: n/a

SoP: Bi-conical DoP: 6.5mm

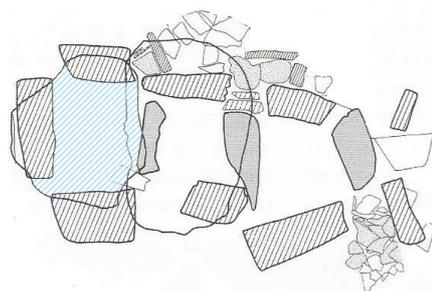
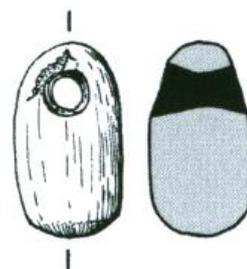
Dec: n/a B/C: Burnt

Ass. B/P: n/a Cxt: Floor of the internal tomb directly

beneath an inhumation

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**042. ME31-033007- NMI 716:53**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: cream/Grey M: limestone

L: 19mm D: 9.5mm W: 9.5mm

SoP: Irregular bi-conical DoP: 5mm

Dec: n/a B/C: Heat cracked on the surface

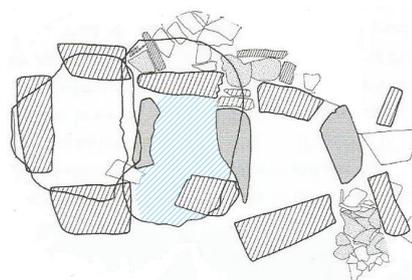
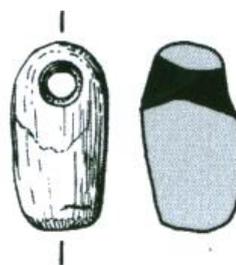
Roughly circular bead with black mottling across its surface.

Perforated from different points on both faces

Ass. B/P: n/a Cxt: Main cremation in the middle compartment

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



043. ME31-033007- NMI 716:54

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Red/Brown M: Fine-grained sandstone

L: 24mm D: 12mm W: 11.5mm

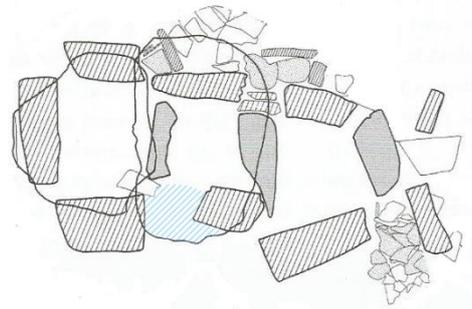
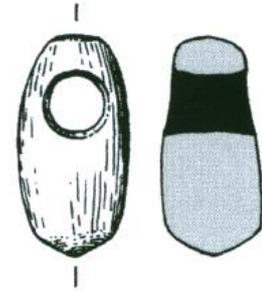
SoP: Cylindrical DoP: 6.5mm

Dec: n/a B/C: Burnt

Ass. B/P: 058 Cxt: From the main cremation deposit in the gap between orthostats L2 and L3. Associated artefacts include bone pins, fragments of Carrowkeel pottery and chalk balls

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**044. ME31-033007- NMI 716:55**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Grey M: Fine grained mudstone

L: 19mm D: 15mm W: 12mm

SoP: Bi-conical DoP: 7.5mm

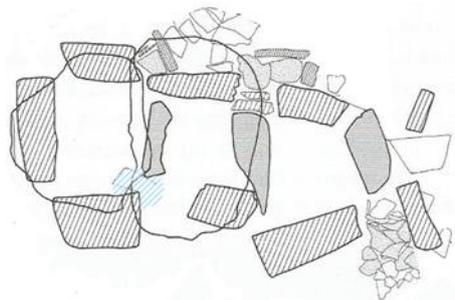
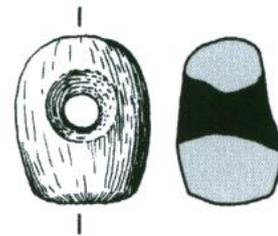
Dec: n/a B/C: Burnt

Has an ovoid section.

Ass. B/P: n/a Cxt: Clean cremation underneath the NE tip of orthostat L3 beside the inner sill stone

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



045. ME31-033007- NMI 716: 56

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Triangular C: Green M: Quartz

L: 13mm D: 12mm W: 10mm

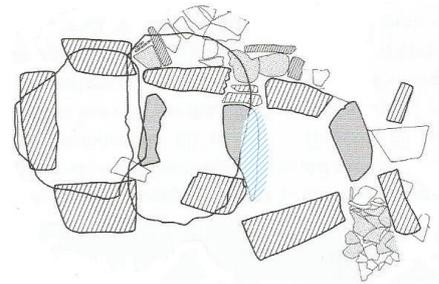
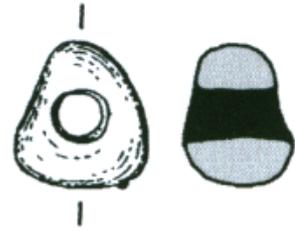
SoP: Cylindrical DoP: 5mm

Dec: n/a B/C: Burnt

Ass. B/P: n/a Cxt: Dirty cremation above the East end of the middle sill stone

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**046. ME31-033007- NMI 716:57**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Pestle C: Cream/Black M: Limestone

L: 19mm D: 12mm W: 12mm

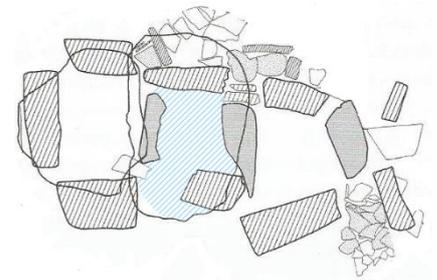
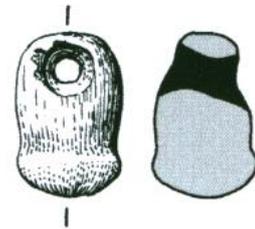
SoP: Bi-conical DoP: 6mm

Dec: n/a B/C: Coarse and very burnt

Ass. B/P: n/a Cxt: Main cremation near the centre of the tomb

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



047. ME31-033007- NMI 716:58

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Grey M: Fine-grained mudstone

L: 21mm D: 14mm W: 12mm

SoP: Irregular bi-conical DoP: 7.5mm

Dec: n/a B/C: Burnt

Has an ovoid section. Possible wear from adjacent beads and pendants on

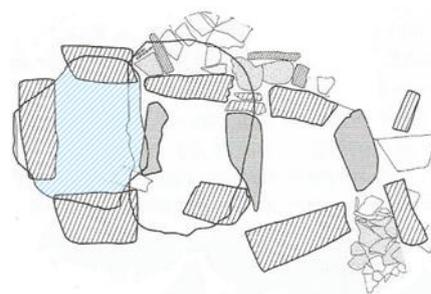
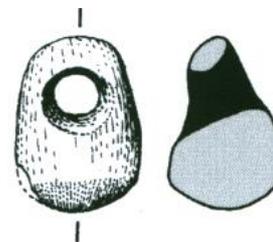
one side and a chip gone from the base.

Ass. B/P: n/a Cxt: Associated with cremated bone cleared from the crevices in

the inner compartment of the tomb

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**048. ME31-033007- NMI 716:59**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Red M: Fine-grained Jasper

L: 14mm D: 9mm W: 6mm

SoP: Bi-conical DoP: 4mm

Dec: n/a B/C: Heat cracked

Has a flat ovoid section with broad faces narrowing into a domed base.

Cremation scatter is thought to represent material thrown from the tomb or

as a formal scatter deposit in its own right.

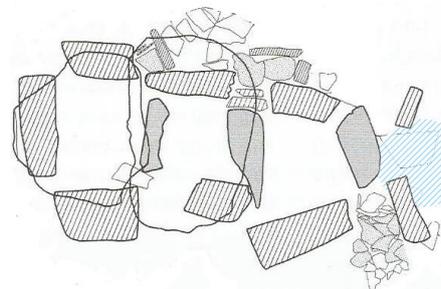
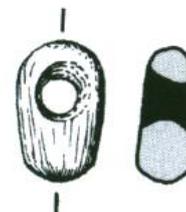
Ass. B/P: n/a Cxt: Above a cremation scatter at the entrance to the tomb.

Finds associated with this scatter include lithics, antler pins, human bone

fragments, early Neolithic round bottomed pottery, and a sandstone beach pebble

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



049. ME31-033007- NMI 716:60

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Long C: Brown/ Black M: Serpentine/ Limestone

L: 25mm D: 11mm W: n/a

SoP: Bi-conical DoP: 5mm

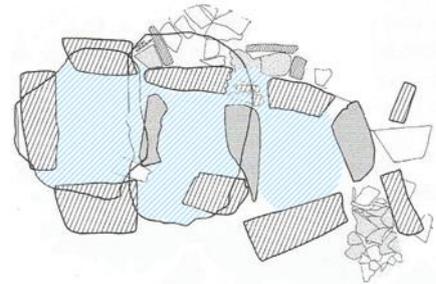
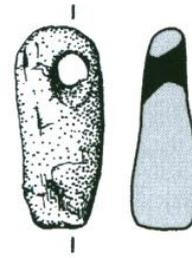
Dec: n/a B/C: Burnt

Has an irregular profile, and a rounded triangular cross section. Perforated from different points on both faces.

Ass. B/P: n/a Cxt: Precise location unknown, but from the general tomb area

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**050. ME31-033007- NMI 716:61**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Brown M: Jasper

L: 28mm D: 12mm W: 12mm

SoP: Bi-conical DoP: 7mm

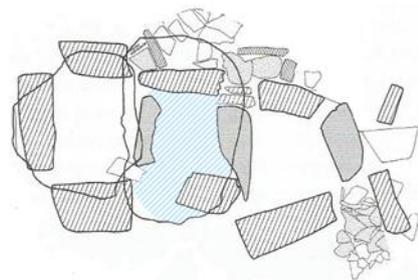
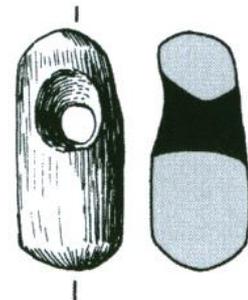
Dec: n/a B/C: Burnt

Has an ovoid section with some wear showing on one face.

Ass. B/P: 019 Cxt: Top of the main cremation in the middle section of the tomb under sticky yellow soil

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



051. ME31-033007- NMI 716: 62

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Orange/Red M: Sandstone/Jasper

L: 32mm D: 4mm W: 13mm

SoP: Bi-conical DoP: 6mm

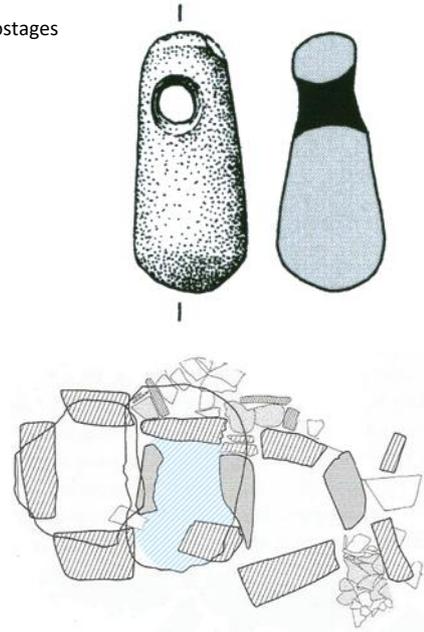
Dec: n/a B/C: Badly Burnt

A chip missing from the head shows a dark brown granular core.

Ass. B/P: n/a Cxt: Top of the main cremation in the middle part
of the tomb under sticky yellow soil

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**052. ME31-033007- NMI 716:63**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: n/a M: Serpentinite/ Limestone

L: 13mm D: 12mm W: n/a

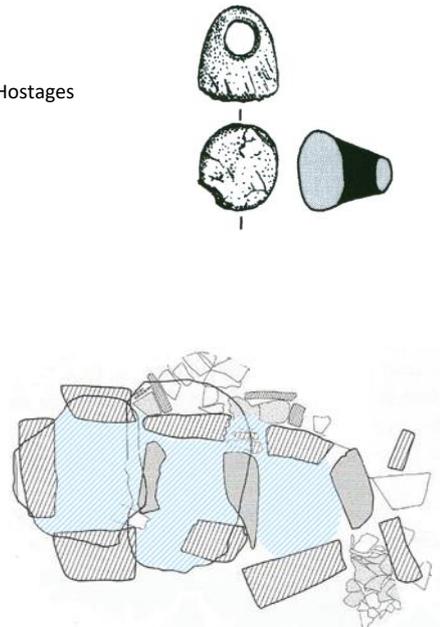
SoP: Biconical DoP: 6.5mm

Dec: n/a B/C: Heavily burnt

Ass. B/P: n/a Cxt: Designated primary but no context given.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005



053. ME31-033007- NMI 716:64

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: n/a M: Serpentinite or limestone

L: 9mm D: 11mm W: n/a

SoP: Bi-conical DoP: 5.5mm

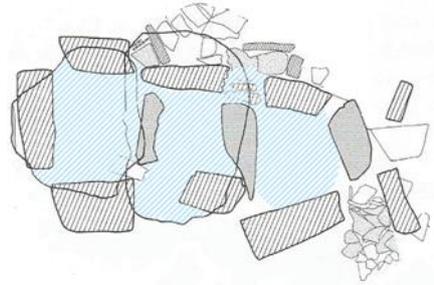
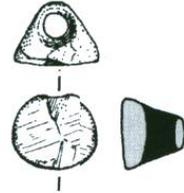
Dec: n/a B/C: Heavily Burnt

Small pendant with a trapezoidal profile. It has a circular section widening to a flat base.

Ass. B/P: n/a Cxt: Designated primary but no real context given

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**054. ME31-033007- NMI 716:66**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: Green M: Serpentine

L: 15mm D: 7mm W: 7mm

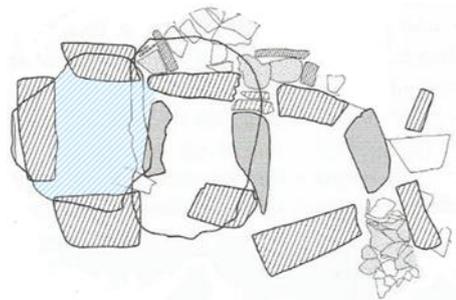
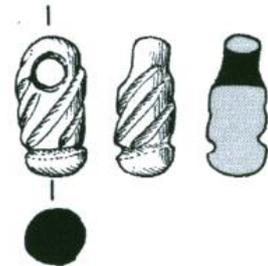
SoP: Cylindrical DoP: 4mm

Dec: Spiral grooves encircle the body ending at a horizontal groove at the domed base B/C: n/a

Ass. B/P: n/a Cxt: Recovered from the post-excavation analysis of the main compartment.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005



055. ME31-033007- NMI 716:67

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

Neolithic Passage Tomb with Multi-Period Activity

T: Pendant fragment N: n/a C: n/a M: Serpentinite

L: 13mm D: 9mm W: n/a

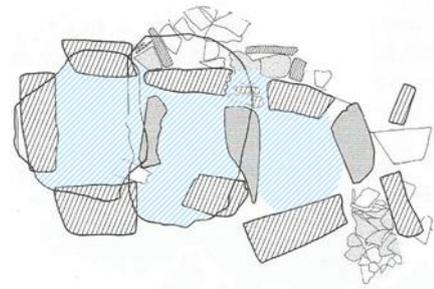
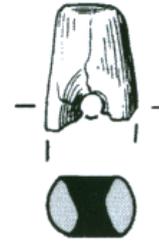
SoP: Bi-conical DoP: 2.5mm

Dec: n/a B/C: Burnt

Ass. B/P: n/a Cxt: Recovered during post-excavation,
exact location unknown.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005

**056. ME31-033007- NMI 716: 70**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Bilobe C: Grey M: Serpentine or limestone

L: 16mm D: 12mm W: 6mm

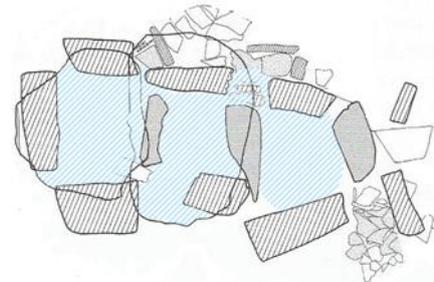
SoP: Biconical DoP: 4mm

Dec: n/a B/C: Burnt

Ass. B/P: n/a Cxt: No location given but presumably from
general tomb area.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005



057. ME31-033007- NMI E716:74

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spool C: Grey/Blue M: Fine-Grained limestone (*possible*)

L: 9mm D: 13.5mm W: n/a

SoP: Biconical DoP: 7mm

Dec: n/a B/C: Coarse and Burnt

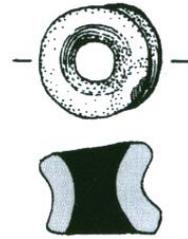
Spool shaped with a waisted section and wide perforation.

Ass. B/P: n/a Cxt: At the top of a cremation under a

hard yellow layer, area is unclear

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**058. ME31-033007- NMI E716:75**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Rectangular C: Brown/Grey M: Fine-grained limestone (*possible*)

L: 16mm D: 15.5mm W: 10mm

SoP: Wide Biconical DoP: 7.5mm

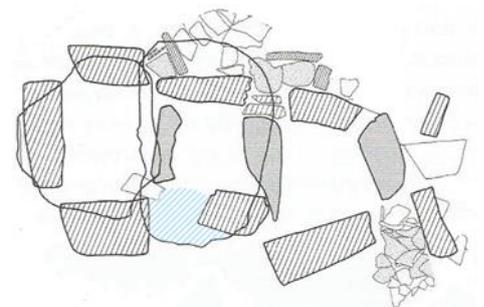
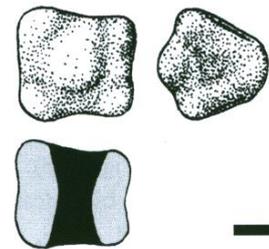
Dec: n/a B/C: Fire-cracked

This bead is unusually shaped with one rectilinear face, with four knobs protruding from the corners and one at the centre. Though it is brown-grey colour it has blue and red tints. It was found at the same level as a sherd of Carrowkeel ware.

Ass. B/P: n/a Cxt: In the main cremation layer in the gap between orthostats L2 and L3 associated with a mass of cremated bone containing 17 individuals 4 infants, a mushroom headed pin and sherds from a Carrowkeel pot.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005



059. ME31-033007- NMI E716:76

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spheroid C: Buff M: Limestone (*possible*)

L: n/a D: 19mm W: 10mm

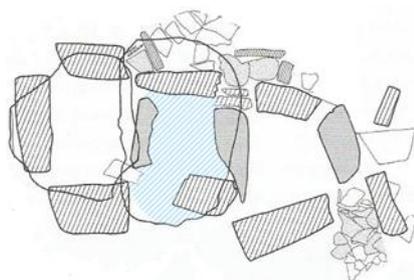
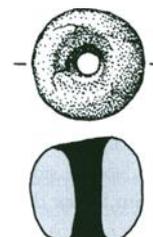
SoP: Biconical DoP: 4mm

Dec: n/a B/C: Fire cracked and blackened

Ass. B/P: n/a Cxt: In a cremation in the northern half of the passage.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005

**060. ME31-033007- NMNI E716: 77**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Biconical C: Green/Grey M: Fine-grained Sandstone

L: n/a D: 14mm W: 15mm

SoP: n/a DoP: 6mm

Dec: n/a B/C Burnt

Top of the clean cremated bone beneath 0.1m of earth mixed with bone.

The surface is polished and orange-red in colour which the excavators have attributed to burning.

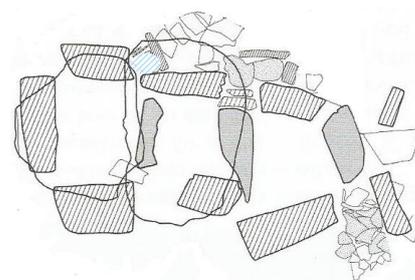
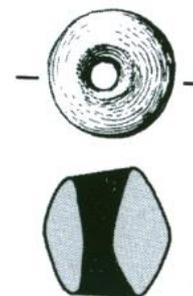
Ass. B/P: Tubular bone bead Cxt: In Cist 1 set against the back of orthostats

R2 and R3 on top of clean cremated bone containing 8 individuals including infants.

Associated with bone pin shafts and a miniature Carrowkeel bowl

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



061. ME31-033007- NMNI E716: 78

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Biconical C: Green/Grey M: Local Fine-grained Sandstone

L: n/a D: 19mm W: 16mm

SoP: n/a DoP: 7.5mm

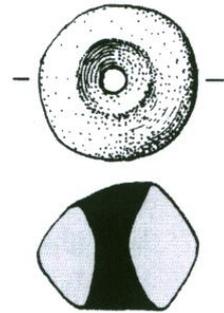
Dec: n/a B/C: Burnt

Ass. B/P: n/a Cxt: In Burial 10, a cremation at the perimeter of the mound

dated to the Neolithic.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005

**062. ME31-033007- NMI E716:79**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Clear M: Quartz

L: n/a D: 9mm W: 4mm

SoP: Biconical DoP: 3mm

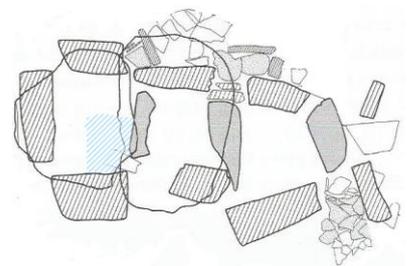
Dec: n/a B/C: Little signs of burning

Flat bead with rounded edges. Signs of wear on the flat faces, possibly from grinding against adjacent beads.

Ass. B/P: n/a Cxt: Main cremation layer in the SE quadrant of the chamber

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



063. ME31-033007- NMI E716: 80

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Translucent Green M: Quartz

L: n/a D: 10mm W: 5mm

SoP: Biconical DoP: 4mm

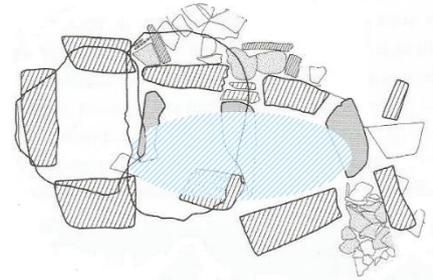
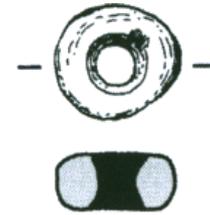
Dec: n/a B/C: Some signs of burning

Flat bead with rounded edges.

Ass. B/P: n/a Cxt: South of baseline in passage

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**064. ME31-033007- NMI E716:81**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Cream M: Limestone

L: n/a D: 12mm W: 5mm

SoP: Bi-conical DoP: 4.5mm

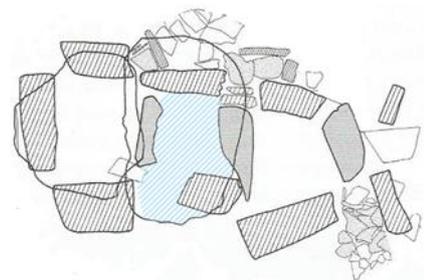
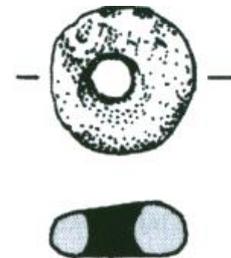
Dec: n/a B/C: Badly Burned and Fire-cracked

Flat bead with rounded edges. The dark grey outer cortex covers cream limestone.

Ass. B/P: n/a Cxt: Clean cremation in the middle compartment of the tomb

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



065. ME31-033007- NMI E716: 82

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Cream/Grey M: Limestone

L: n/a D: 10mm W: 4mm

SoP: Biconical DoP: 3mm

Dec: n/a B/C: Badly Burnt and Fire cracked

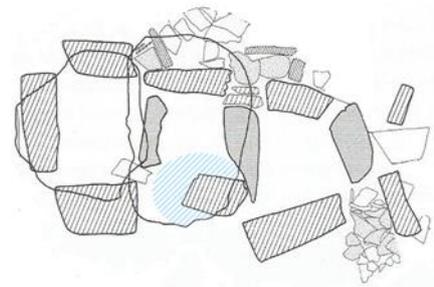
Tiny bead with flat faces and rounded edges. The inner cream/grey

limestone has a dark grey outer cortex.

Ass. B/P: n/a Cxt: Main cremation deposit beside orthostat L2

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**066. ME31-033007- NMI E716: 83**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Orange/Red M: Amber

L: n/a D: 9mm W: 4mm

SoP: Bi-conical DoP: 2mm

Dec: n/a B/C: Some signs of burning

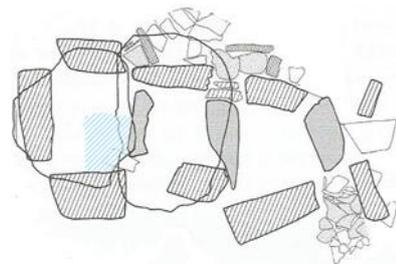
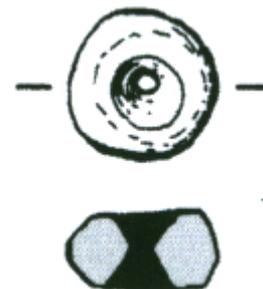
This bead has rounded edges, and a flattish section.

It also appears to be faceted by wear from adjacent beads.

Ass. B/P: n/a Cxt: Main cremation layer, SE quadrant

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



068. ME31-033007- NMI E716: 84

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Light Grey M: Local fine-grained limestone

L: n/a D: 15mm W: 5mm

SoP: Bi-conical DoP: 4mm

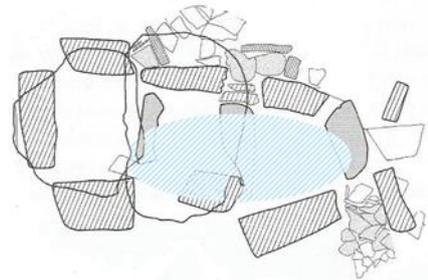
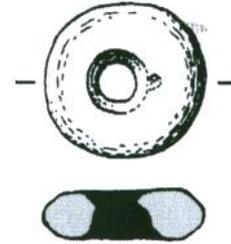
Dec: n/a B/C: Burnt

Flat bead with rounded edges and sides worn from adjacent beads.

Ass. B/P: n/a Cxt: Disturbed primary cremation south of baseline

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**069. ME31-033007- NMI 716: 85**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Brick Red M: Local Quartz-rich sandstone

L: n/a D: 14mm W: 9mm

SoP: Bi-conical DoP: 5.5mm

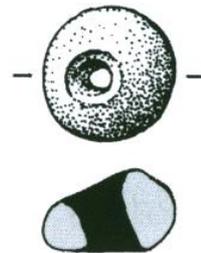
Dec: n/a B/C: Some signs of burning

Flat bead with rounded edges and an asymmetrical cross-section. Signs of wear from adjacent beads.

Ass. B/P: n/a Cxt: 0.2m North and 1.3 m along baseline, this baseline cannot be determined

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



070. ME31-033007- NMI 716: 86

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Translucent Green M: Quartz

L: n/a D: 14mm W: 8mm

SoP: Straight walled DoP: 6.5mm

Dec: n/a B/C: little to no signs

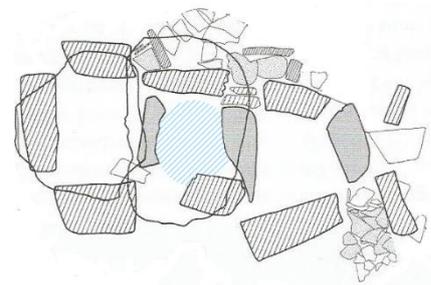
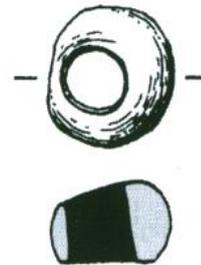
Flat with evidence of wear from adjacent beads on the surface.

Manufactured from a translucent green quartz with 3 dark blue flecks on the surface. The perforation is somewhat eccentric.

Ass. B/P: n/a Cxt: Edge of a cremation at 2m point on the tomb baseline

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**071. ME31-033007- NMI 716:87**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spheroid C: Grey M: Fine-grained, bedded mudstone

L: n/a D: 16mm W: 10mm

SoP: Bi-conical DoP: n/a

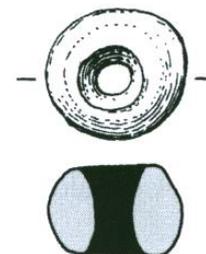
Dec: n/a B/C: Little to no signs

Evidence of wear from adjacent beads. Referred to as limestone in text and mudstone in petrographical report.

Ass. B/P: n/a Cxt: In a cremation 0.3m north and 2.12m along baseline, the report cannot determine this baseline

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



072. ME31-033007- NMI 716:88

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spheroid C: Dirty Brown M: Limestone

L: n/a D: 11mm W: 10mm

SoP: Bi-conical DoP: 3mm

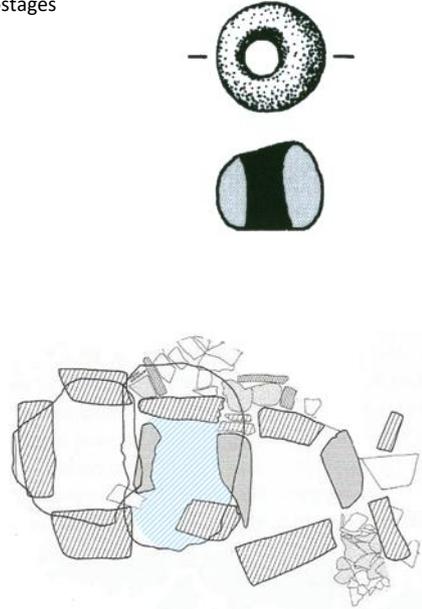
Dec: n/a B/C: Coarse and burnt

Has a wedge shaped cross-section.

Ass. B/P: n/a Cxt: North half of the passage

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**073. ME31-033007- NMI: 716: 89**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spheroid C: Dirty Biscuit M: Limestone

L: n/a D: 12mm W: 10mm

SoP: Bi-conical DoP: n/a

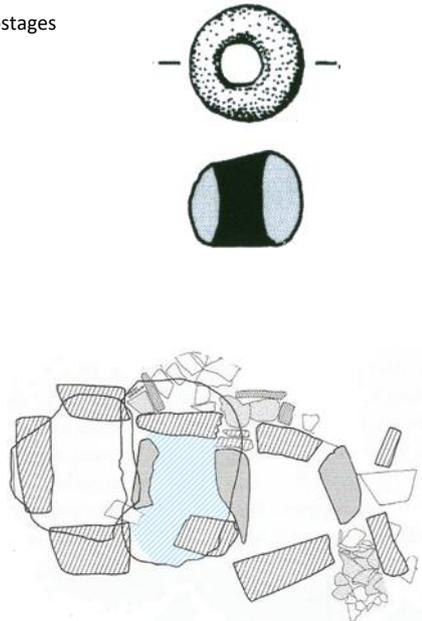
Dec: n/a B/C: Burnt

Has a round wedge shaped cross section and biconical perforation.

Ass. B/P: n/a Cxt: North half of the passage

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



074. ME31-033007- NMI 716:90

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Brown/Grey M: Limestone

L: n/a D: 8mm W: 6mm

SoP: Bi-conical DoP: 3mm

Dec: n/a B/C: Burnt and Weathered

Tiny circular bead has a wedge shaped cross section and an off-center biconical perforation. Recovered from the bone deposit beneath the Carrowkeel pot.

Ass. B/P: 075 Cxt: From cist III located

on the external face between the South portal stone and orthostat L1.

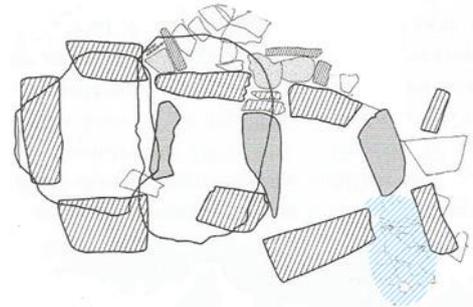
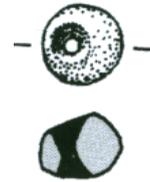
Associated with cremated bone of 9 adults and at least 1 child, a

Carrowkeel bowl, round headed bone pin, mushroom

headed antler pin, pin shafts, beads and pendants

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**075. ME31-033007- NMI 716:91**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Barrel C: White M: Limestone

L: n/a D: 12mm W: 12mm

SoP: Bi-conical DoP: 4mm

Dec: n/a B/C: Burnt

Manufactured of a chalky white material.

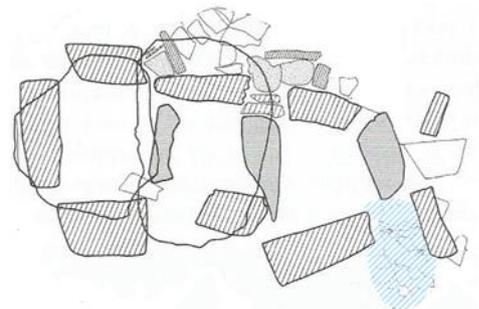
Ass. B/P: 074 Cxt: From cist III located

on the external face between the South portal stone and orthostat L1.

Associated with cremated bone of 9 adults and at least 1 child, a

Carrowkeel bowl, round headed bone pin, mushroom headed antler pin,

pin shafts, beads and pendants



076. ME31-033007- NMI 716:92

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Barrel C: Red/Orange M: Fine-grained Mudstone

L: n/a D: 12mm W: 11mm

SoP: Bi-conical DoP: 6mm

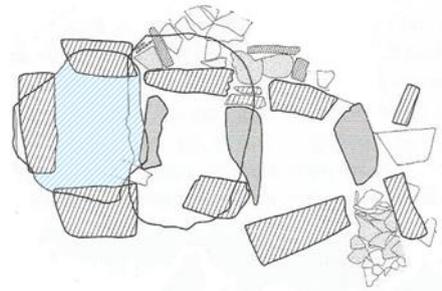
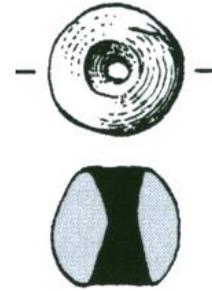
Dec: n/a B/C: Traces of burning.

Nearly spheroid bead with rounded edges.

Ass. B/P: n/a Cxt: Main cremation

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**077. ME31-033007- NMI 716:93**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spool C: Yellowish brick/Dark Grey M: Fine-grained tuff

L: n/a D: 12mm W: 16mm

SoP: Bi-conical DoP: 5mm

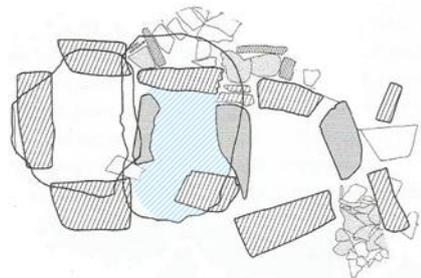
Dec: n/a B/C: Burnt

Spool-shaped with a waisted section. It is both decayed and burnt.

Ass. B/P: n/a Cxt: In disturbed primary cremation in the north
half of the passage

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



078. ME31-033007- NMI 716:94

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Spool C: Grey/Blue/Green M: Local medium-grained limestone

L: n/a D: 13.5mm W: 14mm

SoP: Bi-conical DoP: 6.5mm

Dec: n/a B/C: Fire-cracked



Has a waisted cross section. Found at a level with a sherd of Carrowkeel ware.

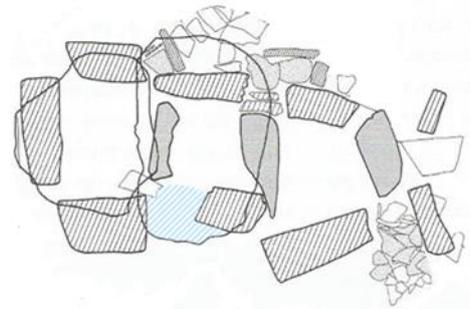
Ass. B/P: n/a Cxt: Main cremation layer in gap between

orthostats L2 and L3 on the South side of the tomb. Associated artefacts

include bone pins, fragments of Carrowkeel pottery and chalk balls

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**079. ME31-033007- NMI 716:95**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Black M: Fine-grained mudstone

L: n/a D: 10mm W: 3mm

SoP: Cylindrical DoP: 3.5mm

Dec: n/a B/C: Fire-cracked



Flat bead with rounded edges and an eccentric perforation. The lower section

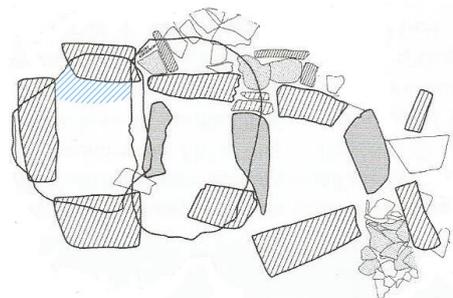
is missing.

Ass. B/P: n/a Cxt: Disturbed primary cremation deposit against orthostat

R3 in the north side of the tomb

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



080. ME31-033007- NMI 716:96

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Brick red M: Limestone

L: n/a D: 7mm W: 4mm

SoP: Cylindrical DoP: 2.5mm

Dec: n/a B/C: Burnt/ Weathered

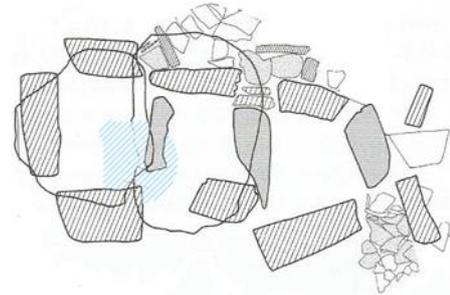
This tiny flat faced bead is broken almost in half.

Ass. B/P: 051 Cxt: Main cremation layer at South-East

Quadrant of the inner compartment

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**081. ME31-033007- NMI 716:97**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Black M: Mudstone

L: n/a D: 5mm W: 2mm

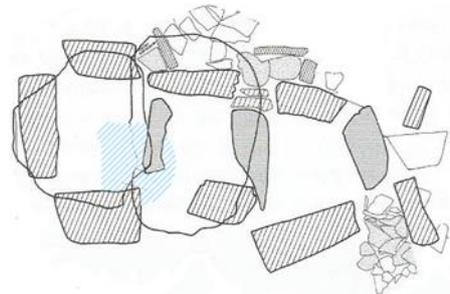
SoP: Cylindrical DoP: 2mm

Dec: n/a B/C: Burnt

Ass. B/P: 050 Cxt: Main cremation layer at South-East quadrant of the inner compartment

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



082. ME31-033007- NMI 716:98

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Black M: Mudstone

L: n/a D: 7mm W: 3mm

SoP: Cylindrical DoP: 2mm

Dec: n/a B/C: Possibly burnt

Tiny flat bead with rounded edges.

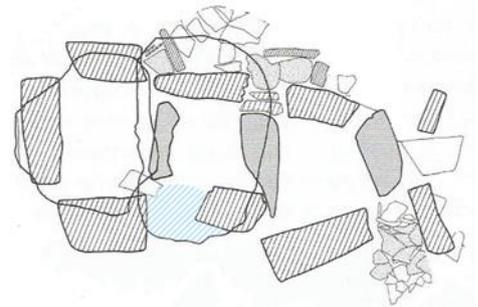
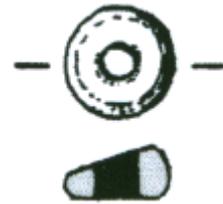
Ass. B/P: n/a Cxt: Recovered from the primary cremation

between orthostats L2 and L3 on the south side of the tomb.

Associated artefacts include bone pins, chalk balls and fragments of Carrowkeel pottery

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**083. ME31-033007- NMI 716:99**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Ring C: Yellow/Brick red M: Limestone

L: n/a D: 7mm W: 2mm

SoP: Large Circular DoP: 4.5mm

Dec: n/a B/C: Burnt

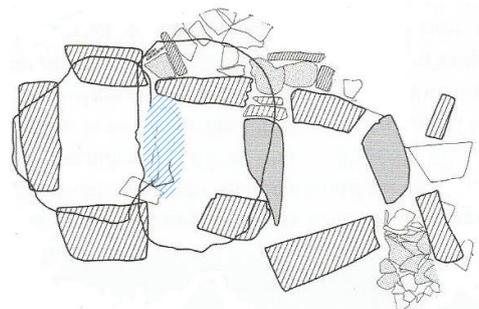
Tiny bead with flat section and a large perforation.

Ass. B/P: n/a Cxt: Cremation enveloping a large slab overlying the inner

sill stone. A chalk ball was also recovered from this cremation

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



084. ME31-033007- NMI 716: 100

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Brown M: Fine-grained mudstone

L: n/a D: 9mm W: 4mm

SoP: Bi-conical DoP: 3mm

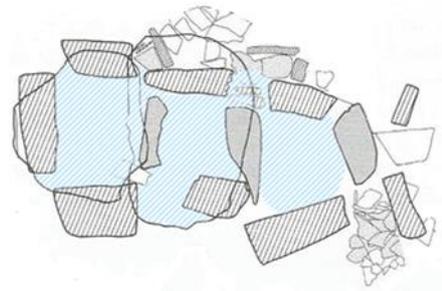
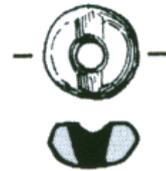
Dec: n/a B/C: Burnt

Flat bead with a spall lost from one surface.

Ass. B/P: n/a Cxt: Passage tomb cremation deposits

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**085. ME31-033007- NMI 716:101**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Grey M: Limestone

L: n/a D: 16mm W: 10mm

SoP: Bi-conical DoP: 6.5mm

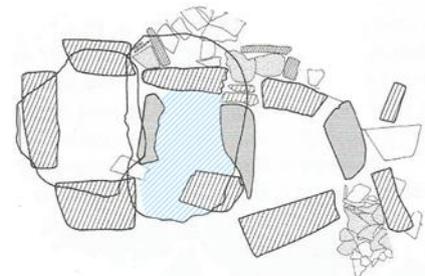
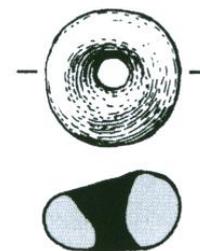
Dec: n/a B/C: Burnt/ Weathered

Has a wedge shaped cross section, with rounded edges and sides.

Ass. B/P: n/a Cxt: Cremation in the North side of the passage 2.4m along baseline

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



086. ME31-033007- NMI 716:102

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead fragment N: Spheroid C: Dark Brown M: Fine-grained mudstone

L: n/a D: 14mm W: 12mm

SoP: Cylindrical DoP: 3.5mm

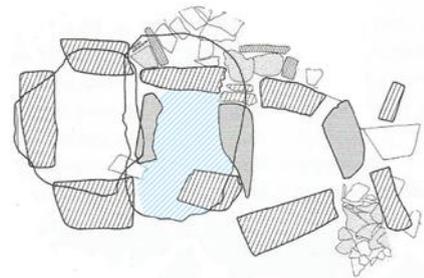
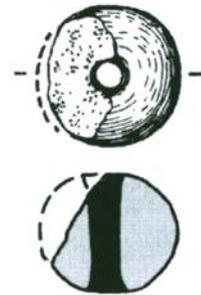
Dec: n/a B/C: n/a

Manufactured from a worked rounded pebble.

Ass. B/P: n/a Cxt: North half of the passage

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**087. ME31-033007- NMI 716:103**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Disc C: n/a M: Shale

L: n/a D: 9mm W: 1mm

SoP: Cylindrical DoP: 3mm

Dec: n/a B/C: n/a

The natural parallel bedding of shale has been utilised for the faces.

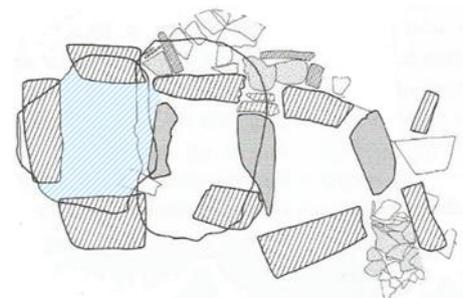
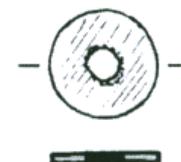
Its precise context has been lost but it is probable that it is related to the group of similar beads in the inner compartment of the tomb.

Ass. B/P: Possibly associated with beads from the inner compartment

Cxt: Precise location lost

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



088. ME31-033007- NMI 716:105

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Cylindrical C: n/a M: Crinoid stem fragment from limestone

L: n/a D: 9mm W: 5mm

SoP: Cylindrical DoP: 6mm

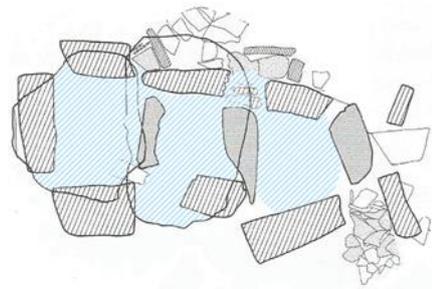
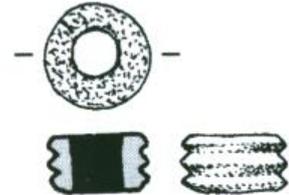
Dec: n/a B/C: n/a

Body on this small bead has horizontal segmentation.

Ass. B/P: n/a Cxt: Precise context lost, probably from the tomb area.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005

**089. ME31-033007- NMI 716:106**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: n/a C: Brown M: Fine-grained local sandstone (*possibly*)

L: n/a D: 4mm W: 2mm

SoP: n/a DoP: n/a

Dec: n/a B/C: n/a

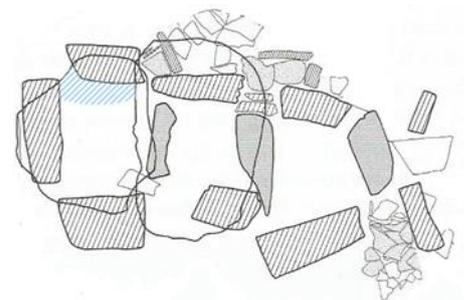
Tiny stone bead is now missing, no sketches or images exist.

Ass. B/P: n/a Cxt: Cremation against orthostat R3, North side of tomb.

Associated with chalk balls

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



090. ME31-033007- NMI 716:108

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Barrel C: Grey M: Limestone

L: n/a D: 16mm W: 12mm

SoP: Biconical DoP: 6mm

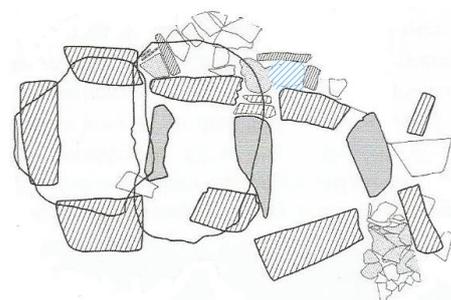
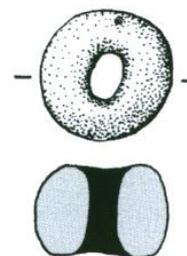
Dec: n/a B/C: Burnt

Recovered from amid a mass of cremated bone with intrusions of inhumations from the passage, no details are available on stratigraphy. It has slightly convex sides.

Ass. B/P: n/a Cxt: In cist II set against R2 and R1. Associated with cremated bone of at least 34 individuals, lithics, chalk balls, fragments of bone pins, fragments of human bone and a mushroom headed antler pin.

Primary Ref: O'Sullivan 2005.

Image Ref: O'Sullivan 2005

**091. ME31-033007- NMI 716:109**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Grey M: Fine grained limestone

L: 10mm D: 12mm W: n/a

SoP: Bi-conical DoP: 3mm

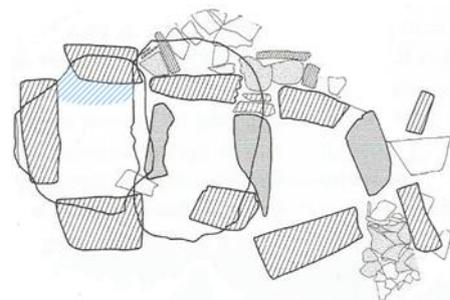
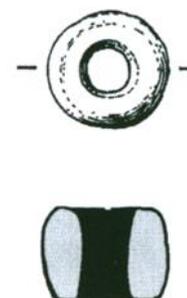
Dec: n/a B/C: Burnt (*possible*)

Has flat faces with a wedge shaped cross-section and rounded edges. Both faces are worn from rubbing against adjacent beads.

Ass. B/P: n/a Cxt: Cremation against the West endstone of passage on the North side (orthostat R3). Associated with chalk balls

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



092. ME31-033007- NMI 716:110

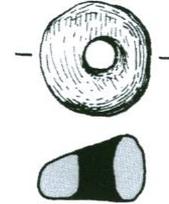
Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Circular C: Blue/Grey M: Fine-grained mudstone

L: 8.5mm D: 14.5mm W: 9mm

SoP: Cylindrical DoP: 5mm

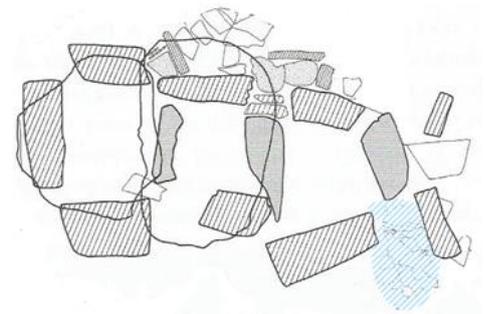
Dec: n/a B/C: Burnt



Bead has flat faces and slightly rounded edges. The faces are worn, presumably from contact with adjacent beads while in use.

Ass. B/P: 074, 075 Cxt: From cremation beside

Carrowkeel bowl in Cist III. Associated with cremated bone of 9 adults and at least 1 child, a Carrowkeel bowl, round headed bone pin, mushroom headed antler pin, pin shafts, beads and pendants



Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

093. ME31-033007- NMI 716:289

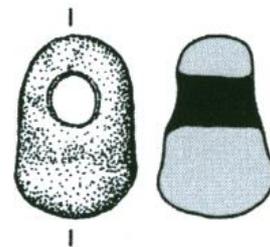
Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Pestle-hammer C: Orange M: Jasper

L: 20mm D: 14mm W: 13mm

SoP: Cylindrical DoP: 6mm

Dec: n/a B/C: burnt



Ovoid to circular section, Possible wear from adjacent beads and pendants.

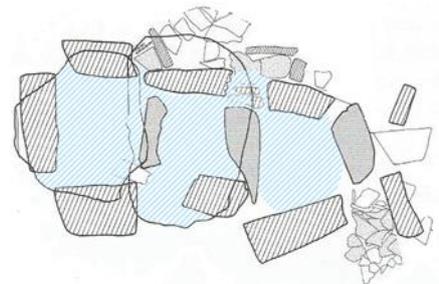
Dark orange with traces of mottled yellowish patina.

Ass. B/P: Possibly associated with beads from the general tomb area

Cxt: General tomb area, precise location lost

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



094. ME31-033007- NMI 716:290

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant N: Hammer C: n/a M: n/a

L: 9mm D: 10mm W: n/a

SoP: Bi-conical DoP: n/a

Dec: n/a B/C: Burnt

Trapezoidal profile with rounded edges and a circular cross section.

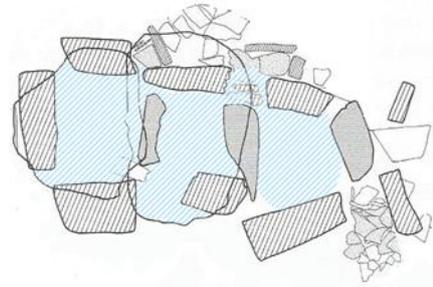
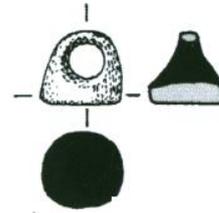
Recovered during post excavation bone analysis.

Ass. B/P: Possibly associated with beads from the general tomb area

Cxt: General tomb area, precise location lost.

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**095. ME31-033007- NMI 716: 412**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Pendant fragment N: n/a C: n/a M: Steatite

L: 11mm D: 10mm W: n/a

SoP: Bi-conical DoP: n/a

Dec: n/a B/C: n/a

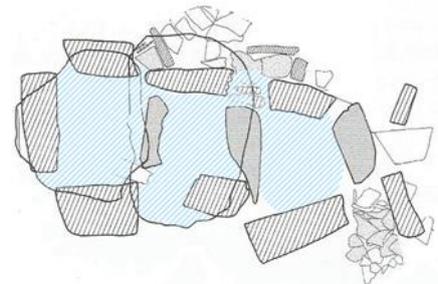
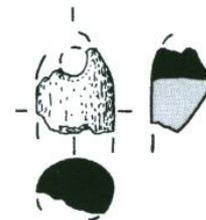
Pieces have detached at both ends, It appears to have had a circle or oval

section. Recovered during post excavation bone analysis.

Cxt: Recovered during post excavation precise location unknown

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



096. ME31-033007- NMI 716:415a

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Disc C: n/a M: Sponge like fabric

L: n/a D: 7mm W: n/a

SoP: n/a DoP: n/a

Dec: n/a B/C: n/a

Very small bead, irregularly shaped more like a ring bead.

Ass. B/P: n/a Cxt: unknown

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**097. ME31-033007- NMI 716:415b**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Disc C: n/a M: Crinoid

L: n/a D: 4mm W: n/a

SoP: Circular/Blocked DoP: n/a

Dec: n/a B/C: n/a

The perforation is blocked it is not clear how. Also no information

on context is given, nor any explanation of its relationship with 415a.

Ass. B/P: n/a Cxt: unknown

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



098. ME31-033007- NMI 716:492a

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Crinoid C: n/a M: Crinoid

L: n/a D: 4mm W: n/a

SoP: n/a DoP: 2mm

Dec: n/a B/C: n/a

No context information given it is not clear how this bead relates to 492b.

Ass. B/P: n/a Cxt: unknown

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005

**099. ME31-033007- NMI 716:492b**

Co: Meath Td: Castleboy (Skreen By., Tara Par.) Site: Mound of the Hostages

T: Bead N: Crinoid C: n/a M: Crinoid

L: n/a D: 4mm W: n/a

SoP: Ring/Blocked DoP: n/a

Dec: n/a B/C: n/a

No information is provided on context, or the relationship to 491a.

Furthermore it is not clear what they may mean by blocked.

Ass. B/P: n/a Cxt: unknown

Primary Ref: O'Sullivan 2005

Image Ref: O'Sullivan 2005



100. ME015-012003- NMI 1942:1149

Co: Meath Td: Corstown Site: Loughcrew H

T: Bead N: Circular C: Cream/White M: Limestone

L: 12.5mm D: 26mm W: 8.5mm

SoP: Cylindrical DoP: n/a

Dec: n/a B/C: Chalky/possibly burned

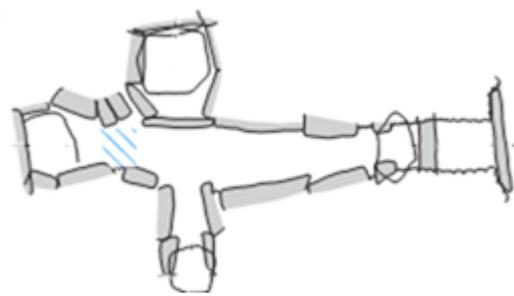
Pink discolouration.

Ass. B/P: n/a Cxt: inside the entrance

to the western chamber in association with cremated remains

Primary Ref: Conwell 1873

Image Ref: Herity 1974/ Robin 2010

**101. ME009-071001- NMI 1942:949**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Pendant N: Pestle C: Grey M: Limestone (unable to be located for analysis)

L: 18mm D: 12mm W: 10mm

SoP: n/a DoP: 5mm

Dec: n/a B/C: n/a

Cracked and discoloured possibly from exposure to heat.

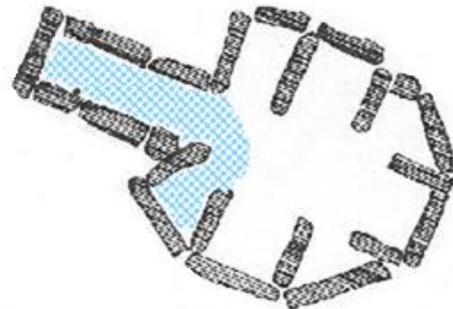
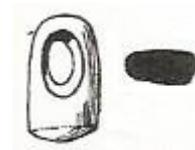
Ass. B/P: 102 Cxt: Recovered from the western part

of the excavation

near the other two pendants from this site

Primary Ref: Rotherham 1897

Image Ref: Herity 1974/Rotherham 1895



102. ME009-071001- NMI 1942:960

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Pendant N: Pestle C: Brown M: Mudstone

L: 24mm D: 12mm W: 11mm

SoP: Bi-conical DoP: 5.5mm

Dec: n/a B/C: Burnt

Cracked and discoloured possibly from exposure to heat.

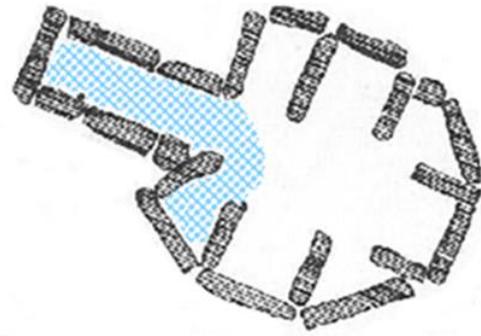
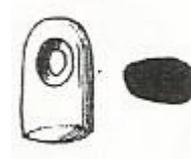
Ass. B/P: 101 Cxt: Recovered from the

western part of the excavation

near the other two pendants from this site

Primary Ref: Rotherham 1897

Image Ref: Herity 1974/Rotherham 1895

**103. ME015-012007- NMI 1942:948**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Waisted C: Grey M: Steatite

L: 12mm D: 10mm W: 7mm

SoP: B-iconical DoP: 4mm

Dec: Groove encircles the waist B/C: n/a

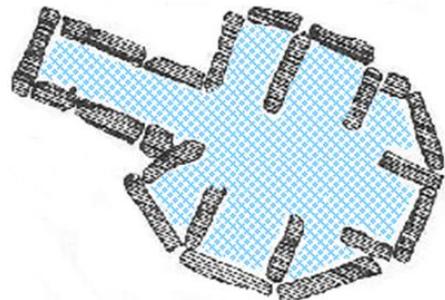
Ass. B/P: 103-118 Cxt: Found in soil that had been removed en masse

during excavation in association with Neolithic artefacts and

cremated bone

Primary Ref: Rotherham 1985

Image Ref: Herity 1974/Rotherham 1895



104. ME015-012007-

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Pendant N: Bilobe C: n/a M: n/a

L: 11mm D: 9mm W: 4mm

SoP: Cylindrical DoP: 4mm

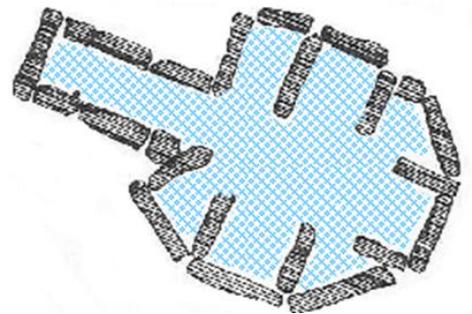
Dec: n/a B/C: n/a

Unusually shaped pendant

Ass. B/P: 103-118 Cxt: Found in soil that had been removed
en masse during excavation in association with Neolithic artefacts
and cremated bone

Primary Ref: Rotherham 1985

Image Ref: Herity 1974/Rotherham 1895

**105. ME015-012007- NMI 1942:956**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Barrel C: Grey/Cream M: Steatite

L: 8mm D: 9mm W: 8.5mm

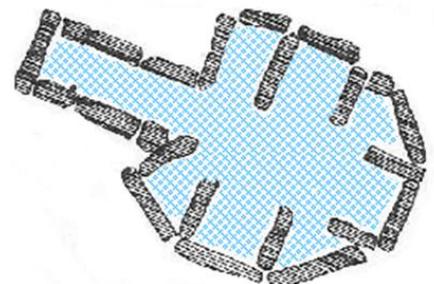
SoP: Cylindrical DoP: 5mm

Dec: n/a B/C: Fire- cracked.

Ass. B/P: 103-118 Cxt: Found in soil that had been removed en masse
during excavation in association with Neolithic artefacts and
cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



106. ME015-012007- NMI 1942:954

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Barrel C: Grey M: Steatite

L: 12mm D: 12mm W: n/a

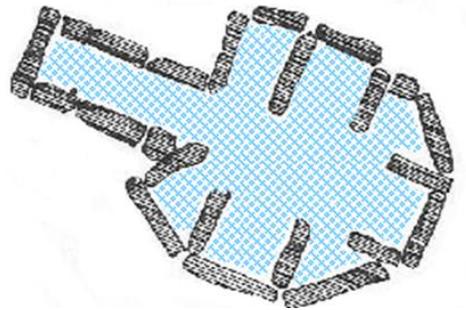
SoP: Cylindrical DoP: 4mm

Dec: n/a B/C: n/a

Ass. B/P: 103-118 Cxt: Found in soil that had been removed
en masse during excavation in association with Neolithic
artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895

**107. ME015-012007- NMI 1942:957**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Spheroid C: Grey M: n/a

L: 8mm D: 9.5 mm W: n/a

SoP: Bi-conical DoP: 5mm

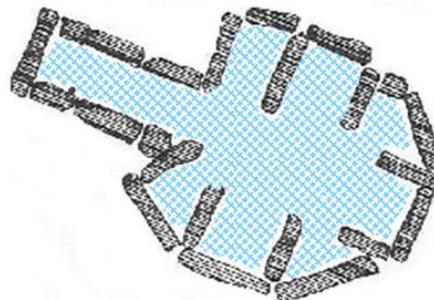
Dec: n/a B/C: Burned

Chalky feeling and possibly burned

Ass. B/P: 103-118 Cxt: Found in soil that had been removed
en masse during excavation in association with Neolithic
artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



108. ME015-012007- NMI 1942:953

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Barrel C: Grey M: n/a

L: 6mm D: 9mm W: n/a

SoP: Bi-conical DoP: 5mm

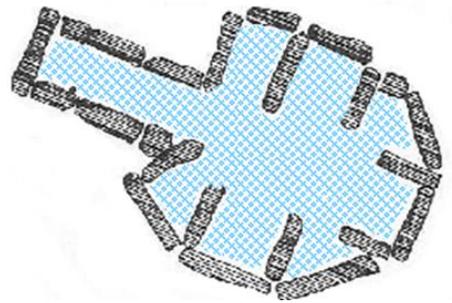
Dec: n/a B/C: Burned

Chalky feeling and possibly burned

Ass. B/P: 103-118 Cxt: Found in soil that had been removed
en masse during excavation in association with Neolithic
artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895

**109. ME015-012007- NMI 1942:951**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Barrel C: Grey/Cream M: Steatite

L: 8mm D: 12mm W: /a

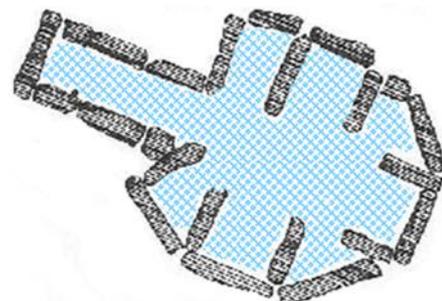
SoP: Cylindrical DoP: 5mm

Dec: n/a B/C: Burnt

Ass. B/P: 103-118 Cxt: Found in soil that had been removed
en masse during excavation in association with Neolithic
artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



110. ME015-012007- NMI 1942:955

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Spheroid C: Grey M: Mudstone

L: 15mm D: 11mm W: n/a

SoP: Bi-conical DoP: 6.5mm

Dec: n/a B/C: n/a

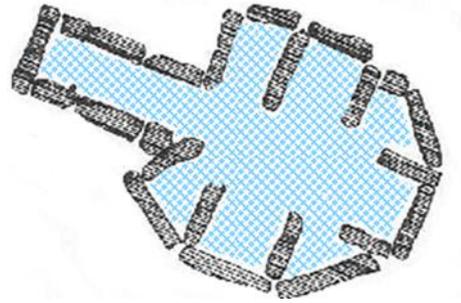
Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic

artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895

**111. ME015-012007- NMI 1942:959**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Circular C: Grey M: Steatite

L: n/a D: 12.5mm W: 7mm

SoP: n/a DoP: 5mm

Dec: Bi-conical B/C: n/a

Flat disc type bead.

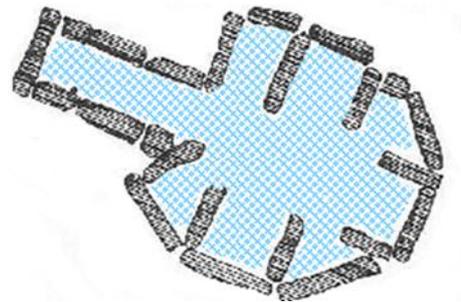
Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic

artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



112. ME015-012007- NMI 1942:961

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Circular C: Cream/Grey M: Steatite

L: n/a D: 12mm-14mm W: n/a

SoP: n/a DoP: n/a P/T: n/a

Dec: n/a B/C: Burnt

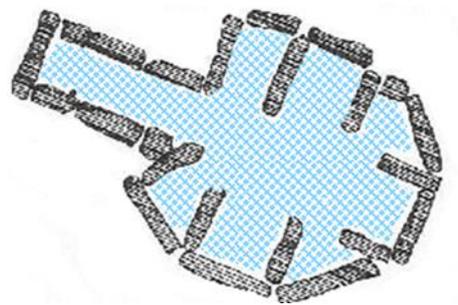
Chalky surface and discolouration, also wear around the perforation.

Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895

**113. ME015-012007- NMI 1942:958**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Spheroid C: Orange/Red M: Steatite

L: n/a D: 8.84 W: 7mm

SoP: Bi-conical DoP: 4mm

Dec: n/a B/C: Burnt

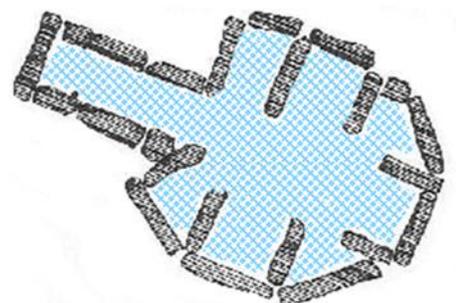
The external setting is flaking away

Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



114. ME015-012007- NMI 1942: 962

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Circular C: Grey/Cream M: Steatite

L: 9mm D: 12mm W: n/a

SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: Burnt

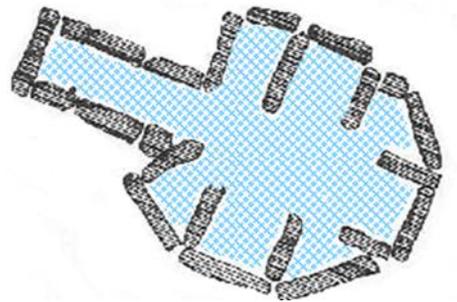
The bead is fractured to one side due to burning

Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895

**115. ME015-012007-**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead Fragment N: n/a C: Blue M: Limestone/steatite

L: n/a D: n/a W: n/a

SoP: n/a DoP: n/a P/T: n/a

Dec: n/a B/C: Fire- cracked.

These fragments are now missing, however we have

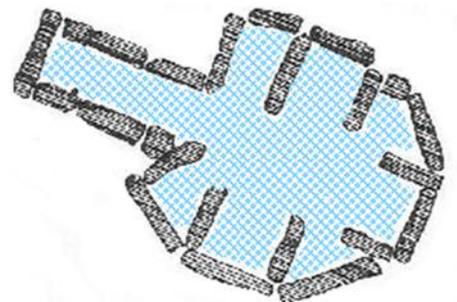
images from the excavation report

Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



116. ME015-012007- SA1900:37.1

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Disc C: Cream M: Steatite

L: 7mm D: 9mm W: n/a

SoP: Bi-conical DoP: 3.5mm

Dec: n/a B/C: n/a

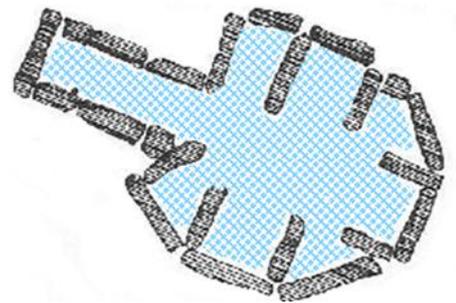
Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic

artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895

**117. ME015-012007- SA1900:37.2**

Co: Meath Td: Corstown (Fore By.) Site: Loughcrew R2

T: Bead N: Disc C: Black M: Steatite

L: n/a D: 6mm W: 3mm

SoP: Cylindrical DoP: 1.5mm

Dec: n/a B/C: n/a

Discoloured and chunk missing possibly from weathering.

Ass. B/P: 103-118 Cxt: Found in soil that had been removed

en masse during excavation in association with Neolithic

artefacts and cremated bone

Primary Ref: Rotherham 1895

Image Ref: Herity 1974/Rotherham 1895



118. ME033-028001- NMI E8:33

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Pendant N: Pestle C: Brown M: Jasper

L: 33mm D: 17mm W: 16mm

SoP: Bi-conical DoP: 7mm

Dec: n/a B/C: n/a

Swelling on the dome on the distal end. Well-polished,

however heavily discoloured

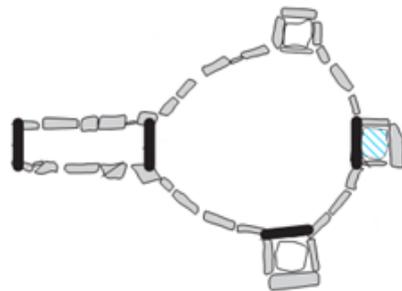
Ass. B/P: 119-126 Cxt: South recess associated

with cremated and unburnt human bone, chalk balls, antler

pins and lithics

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957

**119. ME033-028001- E8:20**

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Pendant N: Pestle C: Orange/Brown M: Jasper

L: 33mm D: 15mm W: 16.5mm

SoP: Bi-conical DoP: 6mm

Dec: n/a B/C: n/a

The perforation on the back face is more splayed than the front face.

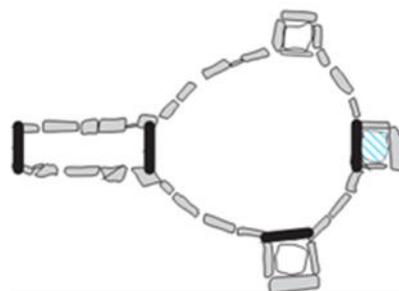
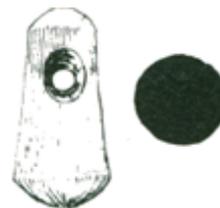
Ass. B/P: 119-126 Cxt: South recess associated

with cremated and unburnt human bone, chalk balls, antler pins

and lithics

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957



120. ME033-028001- NMI E8:26

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Pendant N: Cylindrical C: Brown M: Mudstone

L: 27mm D: 10mm W: 9.5mm

SoP: Cylindrical DoP: 6mm

Dec: n/a B/C: n/a

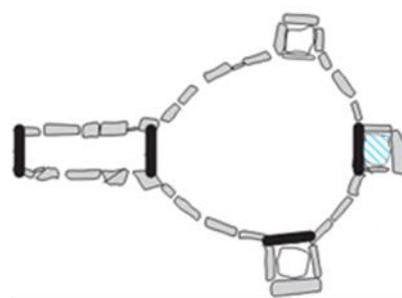
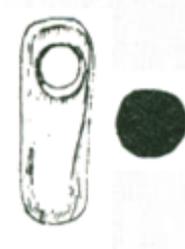
Possible evidence of burning or weathering flaking and cracking along the base.

Ass. B/P: 119-126 Cxt: South recess associated with cremated

and unburnt human bone, chalk balls, antler pins and lithics

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957

**121. ME033-028001- NMI E8:30**

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Pendant N: Cylindrical C: Cream M: Steatite

L: 26mm D: 12mm W: 11mm

SoP: Cylindrical DoP: 7mm

Dec: n/a B/C: n/a

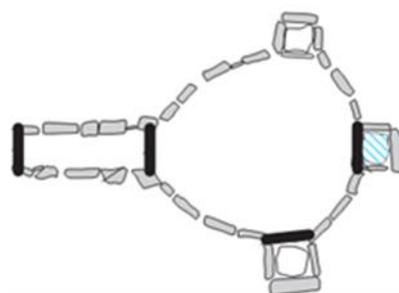
Dark discolouration and a flat base. Glassy surface possibly from heat or soil sheen.

Ass. B/P: 119-126 Cxt: South recess associated with

cremated and unburnt human bone, chalk balls, antler pins and lithics

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957



122. ME033-028001- NMI E8:37

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Pendant N: Cylinder C: Grey M: Steatite

L: 15mm D: 11mm W: 8mm

SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: n/a

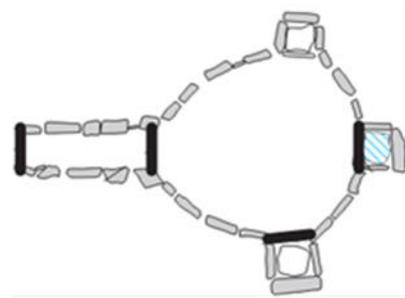
It has a glassy surface, and a number of cracks extending vertically across the face.

Ass. B/P: 119-126 Cxt: South recess associated

with cremated and unburnt human bone, chalk balls, antler pins and lithics

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957

**123. ME033-028001- NMI E8:19**

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Bead N: Oblate shape C: n/a M: Steatite

L: 19mm D: 22mm W: 13mm

SoP: n/a DoP: 8mm

Dec: n/a B/C: Burnt

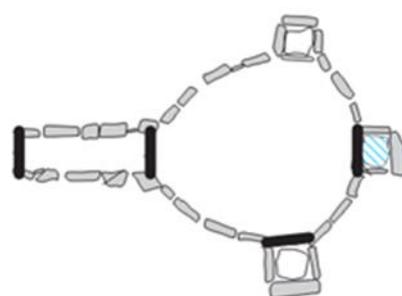
Highly polished and fire-cracked

Ass. B/P: 119-126 Cxt: West Recess associated with

chalk balls, bone pins and a *Nerita Littoralis*, a marine shell

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957



124. ME033-028001- NMI E8:35

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Bead N: Barrel C: n/a M: Steatite

L: 5mm D: 6mm W: n/a

SoP: Cylindrical DoP: 3mm

Dec: n/a B/C: Burnt

This bead is now in three fragments, however this image is

taken from the original report. The measurements are

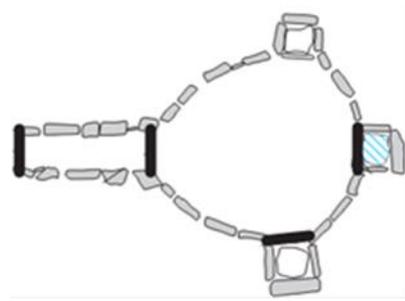
estimated based on the original report and the fragments.

Ass. B/P: 119-126 Cxt: South recess with chalk balls,

a limestone ball, bone pins

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957

**125. ME033-028001- NMI E8:36**

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Bead N: Spool C: n/a M: Steatite

L: 7mm D: 6mm W: n/a

SoP: Bi-conical DoP: 4mm

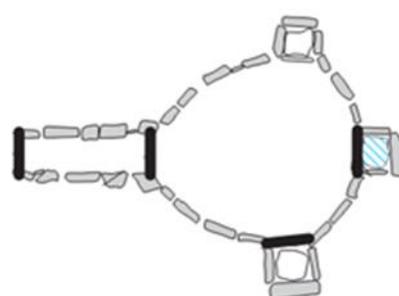
Dec: n/a B/C: n/a

Ass. B/P: 119-126 Cxt: South recess with chalk balls,

a limestone ball, and bone pins

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957



126. ME033-028001- NMI E8:53

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Bead N: Ring C: Grey M: Steatite

L: n/a D: 12mm W: 7mm

SoP: Cylindrical DoP: 5mm

Dec: n/a B/C: Burnt

Compression near the aperture of the perforation may

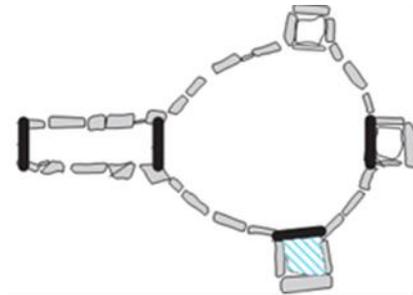
indicate wear. The external fabric is flaking away.

Ass. B/P: n/a Cxt: East recess associated with chalk

balls, bone pins, lithics

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957

**127. ME033-028001- NMI E8:38**

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Bead N: Ring C: Black M: Steatite

L: n/a D: 9mm W: 3.5mm

SoP: Cylindrical DoP: 8mm

Dec: n/a B/C: n/a

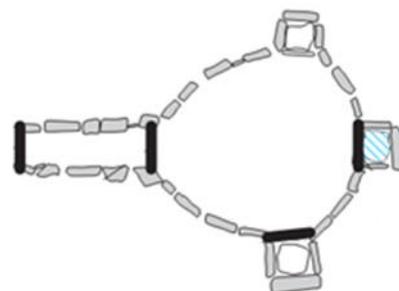
Glassy finish, thinning at the aperture of the perforation on the edge of both faces.

Ass. B/P: 119-126 Cxt: South recess with chalk balls,

a limestone ball, and bone pins

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957



128. ME033-028001- E8: 18

Co: Meath Td: Fourknocks Site: Fourknocks 1

T: Bead N: Ring C: n/a M: Crinoid

L: n/a D: n/a W: n/a

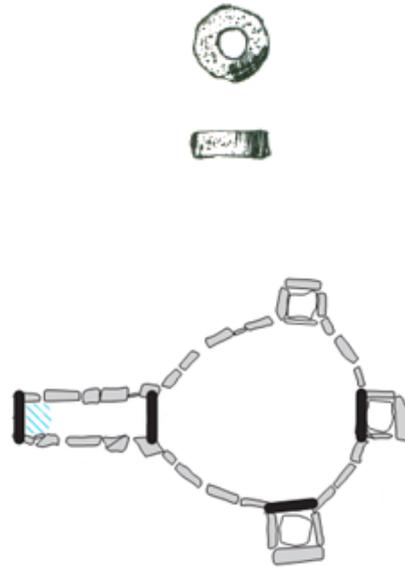
SoP: n/a DoP: n/a

Dec: n/a B/C: n/a

Ass. B/P: n/a Cxt: From the passage entrance with
cremated human bone.

Primary Ref: Hartnett 1957

Image Ref: Hartnett 1957

**129. ME019-030001- NMI E70:2**

Co: Meath Td: Knowth Site: Knowth 1

T: Bead N: Spheroid C: Red M: Fine-grained volcanic rock

L: n/a D: 15mm W: 13.5mm

Dec: n/a B/C: Burned

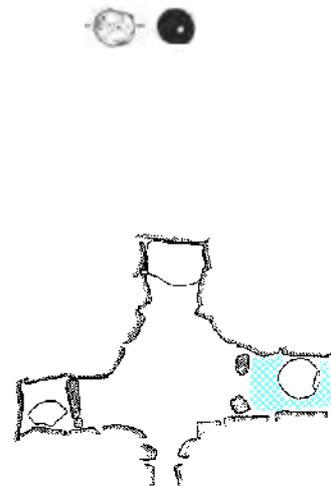
SoP: Bi-conical DoP: 6mm

Perforation is off-centre.

Ass. B/P: 132 Cxt: right hand recess in association with clay beads,
bone beads, stone pebbles, cremated bone and pins

Primary Ref: Eogan and Cleary 2018

Image Ref: Eogan and Cleary 2018



130. ME019-030001- NMI E70:212

Co: Meath Td: Knowth Site: Knowth 1

T: Pendant N: Pestle C: Red/Brown M: Jasper

L: 27.5mm D: 15.rmm W: 9.5mm

Dec: n/a B/C: Burned

SoP: Bi-conical DoP: 6mm

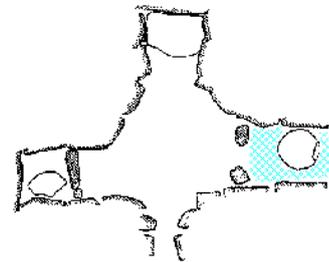
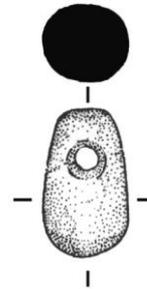
Broken across the perforation, it is suggested that this is the result of

intense heat in the funeral pyre.

Ass. B/P: 132 Cxt: Left hand recess

Primary Ref: Eogan and Cleary 2017

Image Ref: Eogan and Cleary 2017

**131. ME019-030001- NMI E70:346**

Co: Meath Td: Knowth Site: Knowth 1

T: Pendant N: Pestle C: Red M: Fine-grained volcanic rock

L: 25mm D: 14mm W: 12mm

Dec: n/a B/C: Burned/heat sheen

SoP: Bi-conical DoP: 6mm

Likely manufactured from a beach pebble.

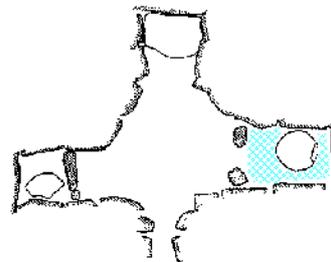
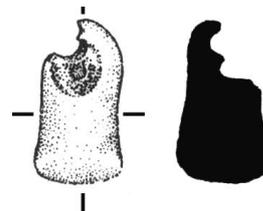
There are two separate attempts to perforate visible, one below the other.

Ass. B/P: 132 Cxt: right hand recess in association with clay beads,

bone beads, stone pebbles, cremated bone and pins

Primary Ref: Eogan and Cleary 2017

Image Ref: Eogan and Cleary 2017



132. ME019-030001- NMI E70:216a

Co: Meath Td: Knowth Site: Knowth 1

T: Bead N: Knobbed C: Grey/Brown M: Carbonate stone

L: n/a D:14mm W: 7.5mm

Dec: n/a B/C: Burned

SoP: Bi-conical DoP: 5.5mm

XRF analysis demonstrated that the bead had been in contact with burning bone.

Damage on two of the knobs is evidence of use prior to burning.

Ass. B/P: n/a Cxt: entrance to the right-hand recess

Primary Ref: Eogan and Cleary 2018

Image Ref: Eogan and Cleary 2018

**133. ME019-030001- NMI E70:180a**

Co: Meath Td: Knowth Site: Knowth 1

T: Bead Fragment N: Knobbed C: Grey/Brown M: Metamorphic rock

L: n/a D: 6mm W: 7mm

Dec: n/a B/C: Burned

SoP: Bi-conical DoP: 5.5mm

XRF analysis demonstrated that the bead had been in contact with burning bone.

Ass. B/P: 130 Cxt: right hand recess in association with clay beads,

bone beads, stone pebbles, cremated bone and pins

Primary Ref: Eogan and Cleary 2018

Image Ref: Eogan and Cleary 2018



134. ME019-045---- NMI E56:567

Co: Meath Td: Newgrange Site: The Newgrange

T: Pendant N: Pestle C: Red M: Steatite

L: 25mm D: 27mm W: n/a

SoP: Bi-conical DoP: 4mm

Dec: n/a B/C: Possibly

O'Kelly concluded that this pendant may be ceramic or soft stone,

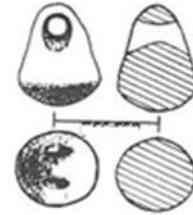
however petrographic analysis concluded that it may also be steatite.

Bead had a greyish white skin that has since discoloured and partially flaked away.

Ass. B/P: n/a Cxt: West recess mixed with cremated human bone in front of a stone basin.

Primary Ref: O'Kelly 1998, 193.

Image Ref: O'Kelly 1998, 193.

**135. ME019-045---- NMI E56:568**

Co: Meath Td: Newgrange Site: Newgrange

T: Pendant N: Hammer C: Brown M: Steatite

L: 15mm D: 7mm W: 6.5mm

SoP: Bi-conical DoP: 4mm

Dec: n/a B/C: Burned

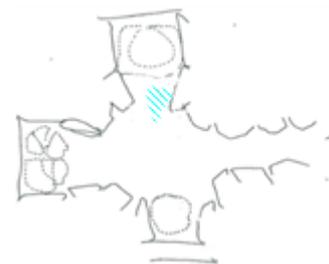
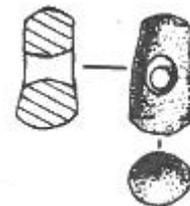
O'Kelly concluded that this pendant may be ceramic or steatite, similar to 175.

It has a polished surface which still bears an accretion of chalky substance.

Ass. B/P: 137 Cxt: East recess mixed with cremated human bone in front of a stone basin.

Primary Ref: O'Kelly 1998, 193.

Image Ref: O'Kelly 1998, 193.



136. ME019-045---- NMI E56:575b

Co: Meath Td: Newgrange Site: Newgrange

T: Pendant N: Hammer C: Brown M: Steatite

L: 26mm D: 122mm W: n/a

Newgrange Dec: n/a B/C: Burned

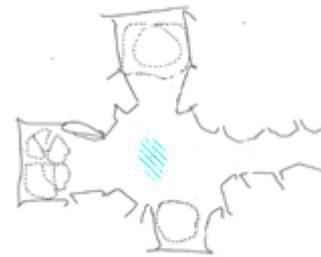
SoP: Bi-conical DoP: 8mm

Similar in composition to 175 and 176. The excavator concludes that this pendant maybe ceramic or soft stone. Surface is covered by a chalky substance.

Ass. B/P: n/a Cxt: Centre of main chamber in an area disturbed by an animal burrow, close to the central pit.

Primary Ref: O'Kelly 1998, 194.

Image Ref: O'Kelly 1998, 193.

**137. ME019-045---- NMI E56:576A**

Co: Meath Td: Newgrange Site: Newgrange

Passage tomb with multi-period activity

T: Pendant N: Pestle C: Brown M: Steatite

L: 33mm D: 15mm W: n/a

Dec: n/a B/C: Burned

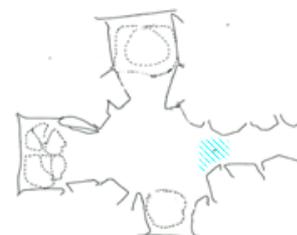
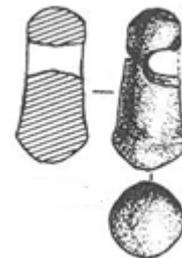
SoP: Broken DoP: 4.5mm

Upper end has broken off and one side of the perforation is missing.

Ass. B/P: 138 Cxt: Disturbed passage floor at the junction of passage and chamber.

Primary Ref: O'Kelly 1998, 194.

Image Ref: O'Kelly 1998, 193.



138. ME019-045---- NMI E56:549

Co: Meath Td: Newgrange Site: Newgrange

T: Bead N: Barrel C: Red M: Steatite

L: n/a D: 9mm W: n/a

Dec: n/a B/C: Possibly

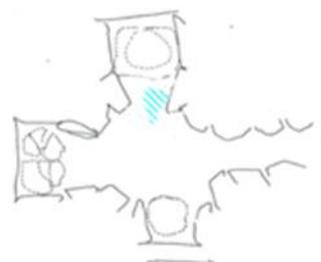
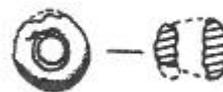
Core of the bead was of harder finer clay, covered by a whitish skin
only traces of which survive.

SoP: Circular DoP: 3mm PT: n/a

Ass. B/P 134 Cxt: Disturbed floor of the east recess mixed with
cremated human bone.

Ref: O'Kelly 1998, 194.

Image Ref: O'Kelly 1998, 193.

**139. ME019-045---- NMI E56:577A**

Co: Meath Td: Newgrange Site: The Great Mound

Passage tomb with multi-period activity

T: Bead N: Disc C: White M: Steatite

L: n/a D: 13mm W: 17mm

Dec: n/a B/C: n/a

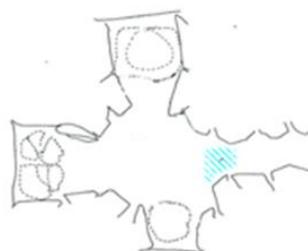
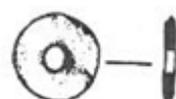
Both faces have been flattened by grinding.

SoP: Circular DoP: 3mm PT: n/a

Ass. B/P: 136 Cxt: In an area of fallen roof spalls at centre
of the chamber that has been disturbed by burrowing.

Primary Ref: O'Kelly 1998, 195.

Image Ref: O'Kelly 1998, 193.



140. ME015-012003- NMI X4245

Co: Meath Td: Newtown (Fore By.) Site: Loughcrew I

T: Pendant N: Pestle C: Grey M: Steatite

L: 26mm D: 13mm W: 15.5mm

SoP: Bi-conical DoP: 6mm

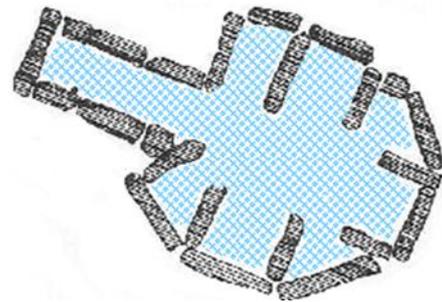
Dec: n/a B/C: n/a

Cream discolouration.

Associated BeadN: Cxt: floor of the chambers along with several fragments of Carrowkeel Ware, flint debitage, bone pin fragments, cremated human bone

Primary Ref: Coffey 1897

Image Ref: Coffey 1897

**141. ME015-003006- NMI X4242**

Co: Meath Td: Newtown (Fore By.) Site: Loughcrew I

T: Bead N: Barrel C: Grey M: Steatite

L: 14mm D: 16.5mm W: n/a

SoP: Biconical DoP: 8mm

Dec: n/a B/C: Burnt

Broken, but highly polished.

Ass. B/P: n/a Cxt: Found under the flooring, near the centre of the compartment facing east in the chamber.

Associated with cremated human bone.

Primary Ref: Coffey 1897.

Image Ref: Coffey 1897.



142. ME015-003006- NMI X4243

Co: Meath Td: Newtown (Fore By., Moylah ED.) Site: Loughcrew I

T: Pendant N: Pestle C: Red/Brown M: Jasper

L: 31mm D: 15.5mm W: 14.5mm

SoP: Bi-conical DoP: 7mm

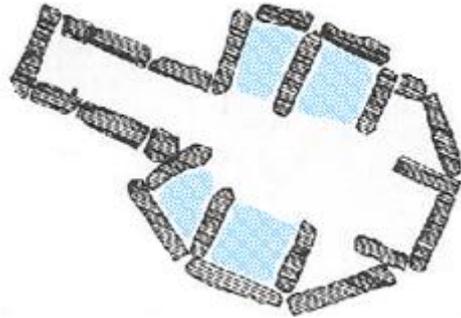
Dec: n/a B/C: Burnt

Straight sided with domed ends. Flaking of the external fabric,
chalky and red stained

Ass. B/P: n/a Cxt: Found under the flooring of the one of
the four compartments containing deposits of cremated human
bone

Primary Ref: Coffey 1897

Image Ref: Coffey 1897.

**143. ME015-003006- NMI X4244**

Co: Meath Td: Newtown (Fore By., Moylah ED,) Site: Loughcrew I

T: Pendant N: Hone C: Brown M: Sandstone

L: 26.5mm D: 15mm W: 15mm

SoP: Bi-conical DoP: 7mm

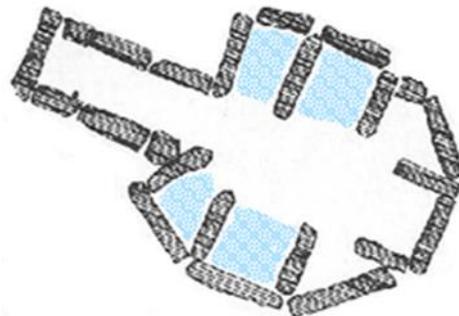
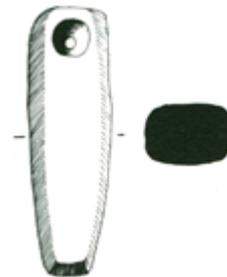
Dec: n/a B/C: n/a

Water worn.

Ass. B/P:n/a Cxt: Found under the flooring of the one of
the four compartments containing deposits of cremated human
bone

Primary Ref: Coffey 1897

Image Ref: Coffey 1897.



144. ME009-071001- NMI 1942:1209

Co: Meath Td: Patrickstown Site: Loughcrew X1

T: Pendant N: Pestle C: Blue M: Steatite

L: 19mm D: n/a W: n/a

SoP: n/a DoP: n/a P/T: n/a

Dec: n/a B/C: n/a

Ass. B/P: n/a Cxt: Horseshoe depression N of the ornamented chamber stone,

associated with bone pins, cremated human bone, fragments of

flint, and Carrowkeel ware.

Primary Ref: Rotherham 1895.

Image Ref: Rotherham 1895.

**145. ME009-017002- NMI 1942:883**

Co: Meath Td: Patrickstown Site: Loughcrew X2

T: Pendant N: Pestle C: Red/Purple M: Jasper

L: 30mm D: 13mm W: 7.5mm

SoP: Bi-conical DoP: 7.5mm

Dec: n/a B/C: n/a

Very well finished pendant, shape like a cylinder.

Ass. B/P: n/a Cxt: Associated with cremated human bone,

burnt lithics, bone pins and fragments of Carrowkeel Ware

Primary Ref: Rotherham 1895

Image Ref: Rotherham 1895



146. ME009-017002- NMI 1942:882

Co: Meath Td: Patrickstown Site: Loughcrew X2

T: Pendant N: Pestle C: Red M: Jasper

L: 17mm D:10mm W: 9mm

SoP: Bi-conical DoP: 6.5mm

Dec: n/a B/C: n/a

Discolouration and striation across the face.

Ass. B/P: n/a Cxt: Associated with cremated human bone,

burnt lithics, bone pins, and fragments of Carrowkeel Ware

Primary Ref: Rotherham 1895

Image Ref: Rotherham 1895

**147. ME009-017002- NMI 1942: 881**

Co: Meath Td: Patrickstown Site: Loughcrew X2

T: Pendant N: Pestle C: Grey/Cream M: Steatite

L: 17mm D: 12.5mm W: 11mm

SoP: Bi-conical DoP: 5.5mm

Dec: n/a B/C: n/a

Squatted Shape with a chalky finish.

Ass. B/P: n/a Cxt: Associated with cremated human bone,

burnt lithics, bone pins and fragments of Carrowkeel Ware

Primary Ref: Rotherham 1895

Image Ref: Rotherham 1895



148. ME009-017002- 1942:880

Co: Meath Td: Patrickstown Site: Loughcrew X2

T: Bead N: Circular C: Grey M: Steatite

L: n/a D: 14mm W: 10mm

SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: Burnt

Fire-cracked and discoloured. Although labelled as Loughcrew X in the museum, it is more likely the missing bead from Loughcrew Xa as it matches the description in the report.

Ass. B/P: n/a Cxt: Associated with cremated human bone, burnt lithics, bone pins and fragments of Carrowkeel Ware

Primary Ref: Rotherham 1895

Image Ref: Rotherham 1895

**149. SL040-006001- NMI RSAI.77.3**

Co: Sligo Td: Carnaweeleen Site: Carrowkeel R

T: Bead N: Circular C: Grey M: Dolerite

L: 17mm D: 12.5mm W: 11mm

SoP: Bi-conical DoP: 5.5mm

Dec: n/a B/C: n/a

Water rolled pebble.

Ass. B/P: n/a Cxt: Associated with cremated human bone, burnt lithics, bone pins and fragments of Carrowkeel Ware

Primary Ref: Moore and Callaghan 2017

Image Ref: Moore and Callaghan 2017

150. SL040-096----- NMI E624:53

Co: Sligo Td: Carrowkeel Site: Carrowkeel F

T: Bead N: Barrel C: Cream M: Steatite

L: 11.5mm D: 10mm W: 5.5mm

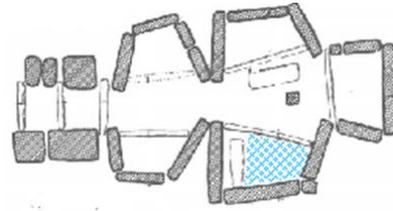
SoP: Bi-conical DoP: n/a

Dec: n/a B/C: Burned

Chalky and very bunt with yellow discolouration. Only half a bead remains

Ass. B/P: 149-151 Cxt: recovered among cremated bone

in the right recess

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**151. SL040-096----- NMI E624:54**

Co: Sligo Td: Carrowkeel Site: Carrowkeel F

T: Bead Fragments N: Spheroid C: Black M: Steatite

L: 10m D: 10mm W: 5mm

SoP: n/a DoP: n/a

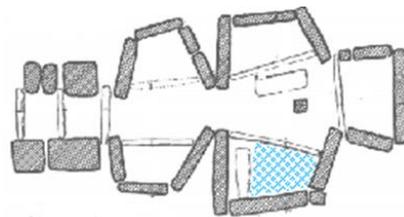
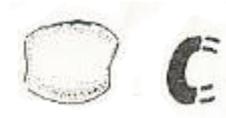
Dec: n/a B/C: Burned

Half a bead fragment, glossy surface with cream and

blue discolouration.

Associated B/P: 149-151 Cxt: recovered among cremated bone

in the right recess

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

152. SL040-096----- NMI E624:55

Co: Sligo Td: Carrowkeel Site: Carrowkeel F

T: Bead N: Spheroid C: Brown/Red M: Jasper

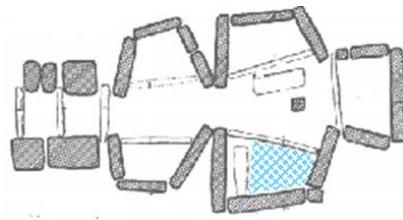
L: 6.5mm D: 8mm W: 3.5mm

SoP: Bi-conical DoP: 3mm

Dec: n/a B/C: Burned

Highly polished and well finished.

Ass. B/P: 149-151 Cxt: recovered among cremated bone in
the right recess

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**153. SL040-089----- NMI E624:28**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Pestle C: Brown/Grey M: Steatite

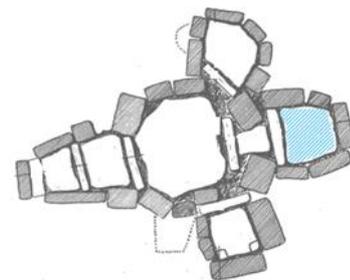
L: 30mm D: 17mm W: 16.5mm

SoP: Bi-conical DoP: 6mm

Dec: n/a B/C: Burned

External lithology is flaking and discoloured.

Ass. B/P 152-154 Cxt: recovered from the central recess in
association with cremated and unburnt human bone, stone trays,
bone and antler pins, stone balls

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

154. SL040-089----- NMI E624:29

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Pestle C: Black M: Steatite

L: 19mm D: 11mm W: 10.5mm

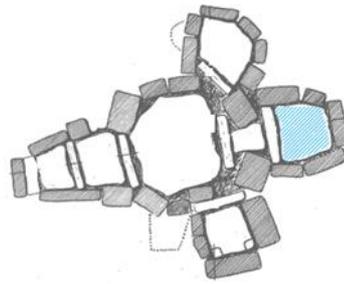
SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: n/a

Ass. B/P 152-154 Cxt: recovered from the central recess in

association with cremated and unburnt human bone, stone trays,

bone and antler pins, stone balls

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**155. SL040-089----- NMI E624:30**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Pestle C: Black M: Steatite

L: 20mm D: 11mm W: 6mm

SoP: Bi-conical DoP: 5mm

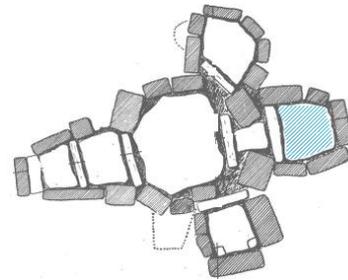
Dec: n/a B/C: n/a

Glassy with chalky inclusions.

Ass. B/P 152-154 Cxt: recovered from the central recess in

association with cremated and unburnt human bone, stone trays,

bone and antler pins, stone balls

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

156. SL040-089----- NMI E624:31

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Axe C: Cream M: Unknown

L: 24mm D: 9mm W: 8mm

SoP: Bi-conical DoP: 3mm

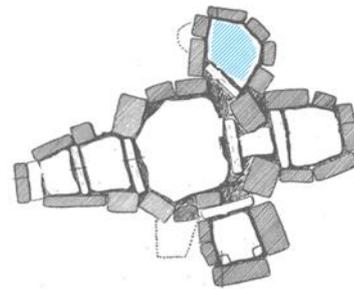
Dec: n/a B/C: n/a

Significantly flatter on one face.

Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**157. SL040-089----- NMI E624:32**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Axe C: Grey M: Steatite

L: 21mm D: 8mm W: 6mm

SoP: Bi-conical DoP: 2mm

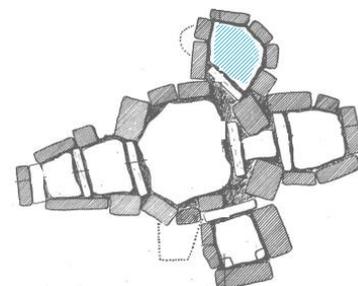
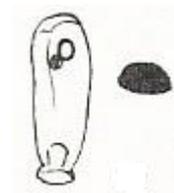
Dec: n/a B/C: n/a

A second perforation was attempted.

Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

158. SL040-089----- NMI E624:33

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Axe C: Cream M: Steatite

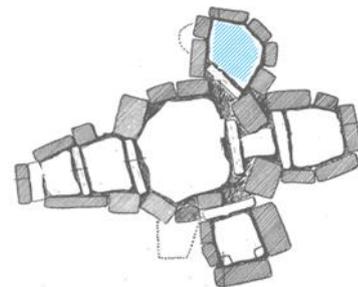
L: 21mm D: 9mm W: 6.5mm

SoP: Bi-conical DoP: 2.5mm

Dec: n/a B/C: n/a

Perforation widely splayed on one face.

Ass. B/P: 155-176 Cxt: recovered from the left recess in
association with Carrowkeel Ware, cremated and unburnt human
bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**159. SL040-089----- NMI E624:34**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Black M: Steatite

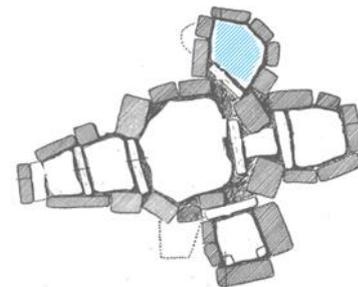
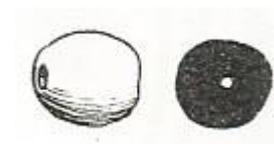
L: 8mm D: 7mm W: n/a

SoP: Cylindrical DoP: 2mm

Dec: n/a B/C: n/a

Tiny perforation, glassy finish.

Ass. B/P: 155-176 Cxt: recovered from the left recess in
association with Carrowkeel Ware, cremated and unburnt human
bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

160. SL040-089----- NMI E624:35

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Black M: Steatite

L: 10mm D: 8mm W: n/a

SoP: Cylindrical DoP: 2.5mm

Dec: n/a B/C: n/a

Very flat profile.

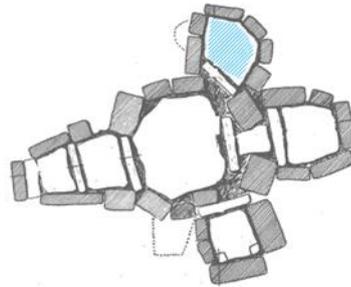
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**161. SL040-089----- NMI E624:36**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Black M: Steatite

L: 9mm D: 7mm W: n/a

SoP: Bi-conical DoP: 3mm

Dec: n/a B/C: n/a

Grinding apparent on both ends.

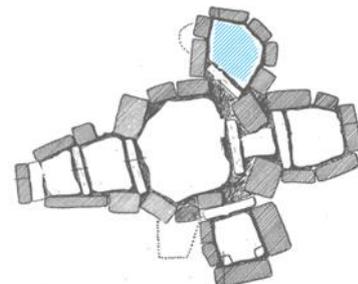
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



162. SL040-089----- NMI E624:37

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Brown M: Steatite

L: 8mm D: 6mm W: n/a

SoP: Cylindrical DoP: 2.5mm

Dec: n/a B/C: n/a

Glass finish.

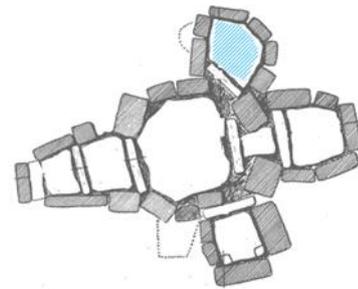
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**163. SL040-089----- NMI E624:38**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Brown M: Limestone

L: 9mm D: 6mm W: n/a

SoP: Bi-conical DoP: 2mm

Dec: n/a B/C: n/a

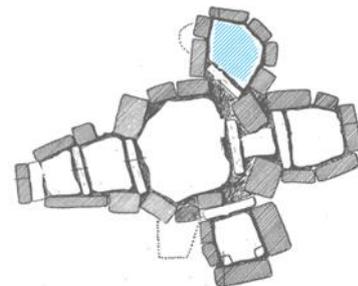
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



164. SL040-089----- NMI E624:39

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Axe C: Cream M: Steatite

L: 8mm D: 10mm W: 6mm

SoP: Bi-conical DoP: 3mm

Dec: n/a B/C: n/a

Possibly a miniature of *haches a bouton*.

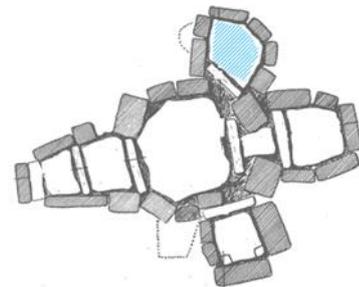
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**165. SL040-089----- NMI E624:40**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Grey M: Steatite

L: 11mm D: 9mm W: 6.5mm

SoP: Cylindrical DoP: 2.5mm

Dec: n/a B/C: n/a

Dragging on the perforation at one end.

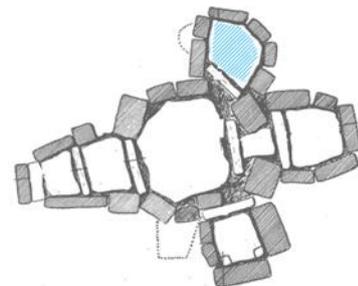
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**166. SL040-089----- NMI E624:41**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Circular C: Brown M: Steatite

L: n/a D: 9mm W: 6mm

SoP: Bi-conical DoP: 2mm

Dec: n/a B/C: Burned

Flattened.

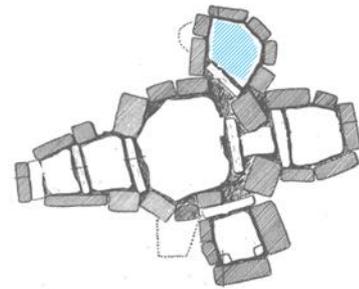
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



167. SL040-089----- NMI E624:42

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Circular C: Grey M: Steatite

L: n/a D: 9mm W: 6mm

SoP: Bi-conical DoP: 3mm

Dec: n/a B/C: n/a

Perforation widely splayed on one face.

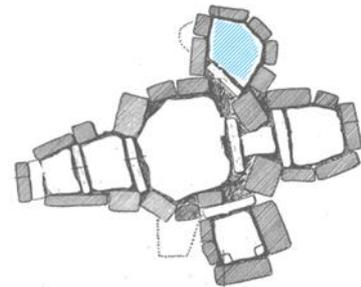
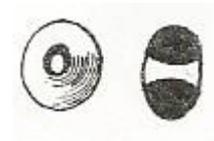
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



168. SL040-089----- NMI E624:43

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Disc C: Black M: Steatite

L: n/a D: 11mm W: 9mm

SoP: Cylindrical DoP: 2.5mm

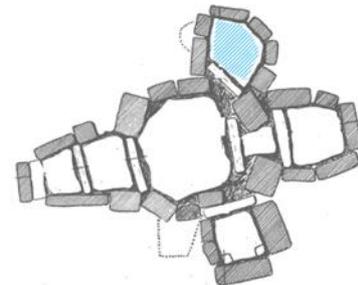
Dec: n/a B/C: n/a

Flattish bead.

Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**169. SL040-089----- NMI E624:44**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead Fragment N: Barrel C: Grey M: Steatite

L: 5mm D: 4mm W: 3mm

SoP: Cylindrical DoP: n/a

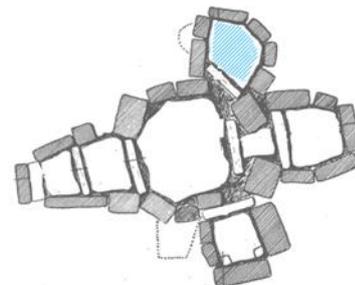
Dec: n/a B/C: n/a

Half a bead with some discolouration

Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

170. SL040-089----- NMI E624:45

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Grey M: Steatite

L: 11mm D: 8mm W: n/a

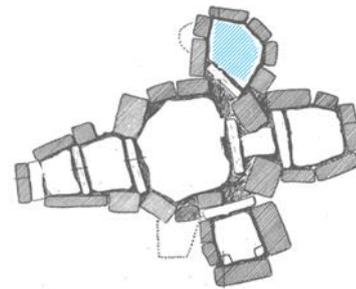
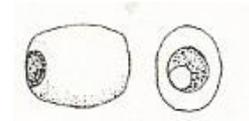
SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: n/a

Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**171. SL040-089----- NMI E624:46**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Disc C: Brown M: Steatite

L: n/a D: 9mm W: 5mm

SoP: Bi-conical DoP: 3mm

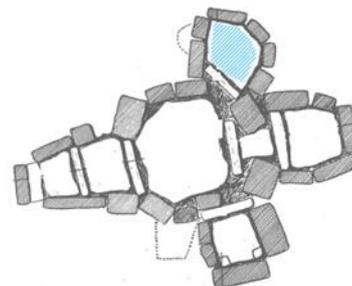
Dec: n/a B/C: n/a

Chalky surface.

Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

172. SL040-089----- NMI E624:47

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Disc C: Grey M: Steatite

L: n/a D: 8mm W: 4mm

SoP: Bi-conical DoP: 3mm

Dec: n/a B/C: Burned

Flaking, chalky external fabric

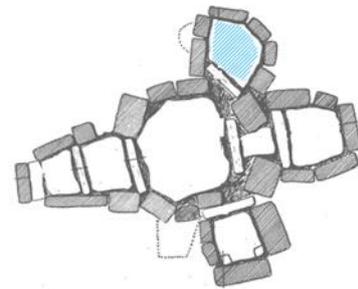
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**173. SL040-089----- NMI E624:48**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Disc C: Brown M: Steatite

L: n/a D: 4mm W: 9mm

SoP: Bi-conical DoP: 3.5mm

Dec: n/a B/C: Burned

Chalky surface.

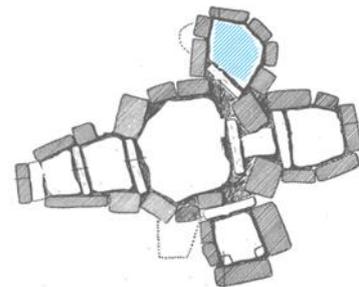
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



174. SL040-089----- NMI E624:49

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Disc C: Brown M: Steatite

L: 21mm D: 9mm W: 6.5mm

SoP: Bi-conical DoP: 2.5mm

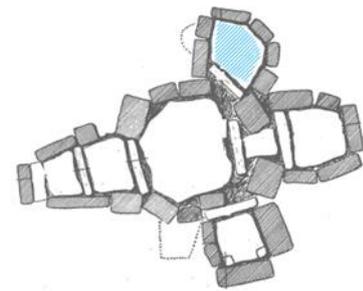
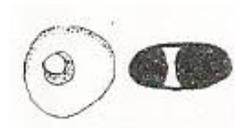
Dec: n/a B/C: Burned

Not quite circular.

Ass. B/P: 155-176 Cxt: recovered from the left recess in association with Carrowkeel Ware, cremated and unburnt human bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**175. SL040-089----- NMI E624:51**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Pendant N: Cylindrical C: White M: Limestone

L: 26mm D: 10mm W: 6mm

SoP: Bi-conical DoP: 2.5mm

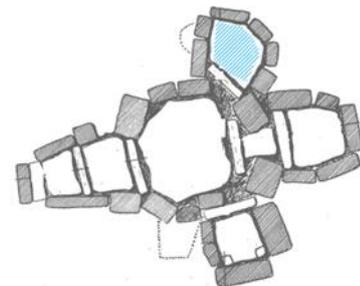
Dec: n/a B/C: n/a

Extremely discoloured, broken along perforation, chalky finish.

Ass. B/P: 155-176 Cxt: recovered from the left recess in association with Carrowkeel Ware, cremated and unburnt human bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



176. SL040-089----- NMI E624:50

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Barrel C: Black M: Steatite

L: 7mm D: 5mm W: n/a

SoP: Bi-conical DoP: 2mm

Dec: n/a B/C: n/a

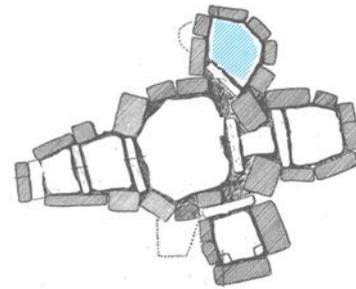
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**177. SL040-089----- NMI E624:52**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel G

T: Bead N: Disc C: Brown M: Steatite

L: n/a D: 10mm W: 5mm

SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: n/a

The bead has a fractured edge, likely from weathering or disturbance.

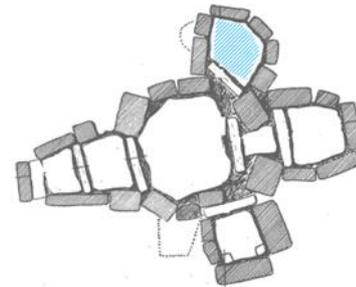
Ass. B/P: 155-176 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



178. SL040-089----- NMI E624:21

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Pendant N: Pestle C: Brown M: Steatite

L:36mm D: 18mm W: 19mm

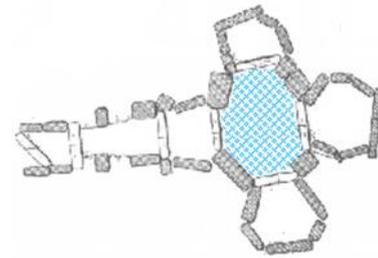
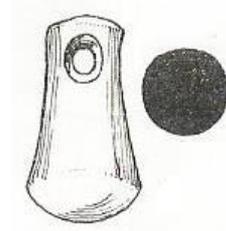
SoP: Bi-conical DoP: 6mm

Dec: n/a B/C: Burned

Surface has been affected by fire and is severely discoloured.

The largest pendant from the Carrowkeel complex.

Ass. B/P: 177-179 Cxt: recovered from the chamber in
association with cremated and unburnt human bone and a stone ball

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**179. SL040-089----- NMI E624:22**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Pendant N: Pestle C: Brown M: Jasper

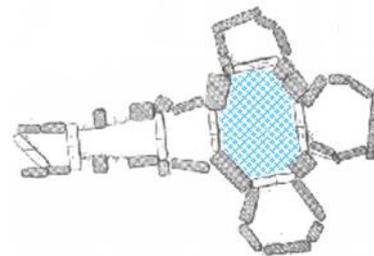
L: 21mm D: 15mm W: 14mm

SoP: Bi-conical DoP: 7.5mm

Dec: n/a B/C: Burned

Chalky surface, fractures around the base of the perforation.

Ass. B/P: 177-179 Cxt: recovered from the chamber in
association with cremated and unburnt human bone and a stone ball

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

180. SL040-089----- NMI E624:23

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Pendant N: Pestle C: Grey M: Limestone

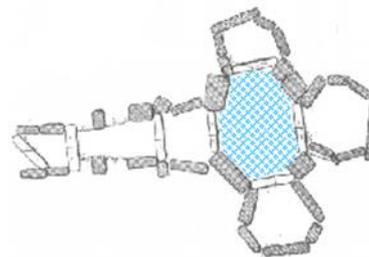
L:14mm D: 11.5mm W: 12mm

SoP: Cylindrical DoP: 6mm

Dec: n/a B/C: n/a

Discoloured surface.

Ass. B/P: 177-179 Cxt: recovered from the chamber in
association with cremated and unburnt human bone and a stone ball

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**181. SL040-089----- NMI E624:24**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Pendant N: Pestle C: Cream M: Steatite

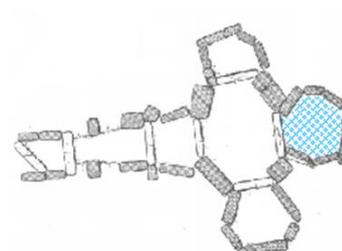
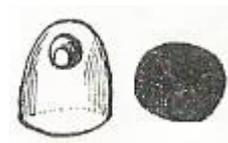
L:36mm D: 18mm W: 19mm

SoP: Bi-conical DoP: 6mm

Dec: n/a B/C: Burned

Dark grey discolouration across the surface. A very faint crack
extends across the front of the bead.

Ass. B/P: 180-183 Cxt: recovered from the three
compartments at the back of the central recess in association
with cremated human bone

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

182. SL040-089----- NMI E624:25

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Pendant N: Pestle C: Grey M: Steatite

L: 16.5mm D: 11.5mm W: 10mm

SoP: Cylindrical DoP: 6mm

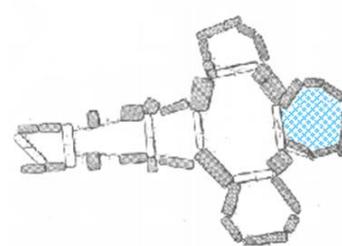
Dec: n/a B/C: n/a

Some yellow discolouration on the face.

Ass. B/P: 180-183 Cxt: recovered from the three

compartments at the back of the central recess in association

with cremated human bone

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911**183. SL040-089----- NMI E624:26**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Bead N: Spheroid C: Brown/Red M: Jasper

L: n/a D: 9.5mm W: 7mm

SoP: Cylindrical DoP: 4.5mm

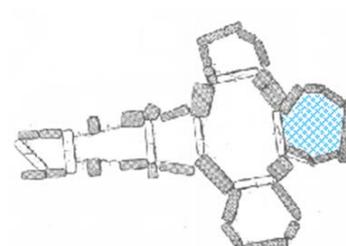
Dec: n/a B/C: n/a

Miniscule cracks across the face of the bead.

Ass. B/P: 180-183 Cxt: recovered from the left recess in

association with Carrowkeel Ware, cremated and unburnt human

bone and stone trays

Primary Ref: Macalister *et al.* 1911Image Ref: Macalister *et al.* 1911

184. SL040-089----- NMI E624:27

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Bead N: Spheroid C: Brown/Red M: Jasper

L: n/a D: 8.5mm W: 6.5mm

SoP: Cylindrical DoP: 4mm

Dec: n/a B/C: n/a

Almost identical to 166.

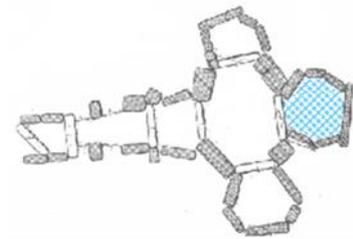
Ass. B/P: 180-183 Cxt: recovered from the three

compartments at the back of the central recess in association

with cremated human bone

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911

**185. SL040-089----- 1969:838**

Co: Sligo Td: Carrowkeel (Tirerrill By., Templevanny ED) Site: Carrowkeel K

T: Pendant N: Hammer C: Cream M: n/a

L: 8mm D: 6.5mm W: 3mm

SoP: Cylindrical DoP: 3mm

Dec: n/a B/C: n/a

Recovered from this monument and donated to the museum in 1969.

Ass. B/P: n/a Cxt: unknown

Primary Ref: Macalister *et al.* 1911

Image Ref: Macalister *et al.* 1911



186. SL014-209006- NMI 1887:37

Co: Sligo Td: Carrowmore (Carbury By.) Site: Carrowmore 3

T: Pendant N: Cylindrical C: Clear M: Quartz

L: 20mm D: 9mm W: n/a

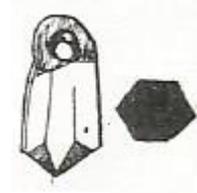
SoP: Bi-conical DoP: 5mm

Dec: n/a B/C: Burned

Ass. B/P: 185-188 Cxt: associated with steatite beads,
bone and antler pins, animal bone, and cremated human bone.

Primary Ref: Wood-Martin 1986/87

Image Ref: Herity 1974

**187. SL014-209006- NMI 1887:38**

Co: Sligo Td: Carrowmore (Carbury By.) Site: Carrowmore 3

T: Bead N: Spheroid C: White M: Steatite

L: 12mm D: 10mm W: n/a

SoP: Bi-conical DoP: 7mm

Dec: n/a B/C: Burned

White with bluish stains due to its calcined condition.

Ass. B/P: 185-188 Cxt: associated with a quartz pendant,
steatite beads, bone and antler pins, animal bone, and cremated human bone

Primary Ref: Wood-Martin 1986/87

Image Ref: Herity 1974



188. SL014-209006- NMI 1887:40

Co: Sligo Td: Carrowmore (Carbury By.) Site: Carrowmore 3

T: Bead N: Barrel C:White M: Steatite

L: 12mm D: 8mm W: n/a

SoP: Cylindrical DoP: 6mm

Dec: n/a B/C: n/a

White with bluish stains due to its calcined condition.

Ass. B/P: 185-188 Cxt: associated with a quartz pendant,

steatite beads, bone and antler pins, animal bone, and cremated human bone

Primary Ref: Wood-Martin 1986/87

Image Ref: Herity 1974

**189. SL014-209006- NMI 1887:39**

Co: Sligo Td: Carrowmore (Carbury By.) Site: Carrowmore 3

T: Bead N: Spheroid C: Yellow/Brown M: Steatite

L: n/a D: 17mm W: n/a

Dec: n/a B/C: n/a

SoP: Bi-conical DoP: 5mm

Ass. B/P: 185-188 Cxt: associated with A quartz pendant,

steatite beads, bone and antler pins, animal bone, and cremated

human bone.

Primary Ref: Wood-Martin 1986/87

Image Ref: Herity 1974



190. SL014-209006- NMI E199:1

Co: Sligo Td: Carrowmore (Carbury By.) Site: Carrowmore 4

T: Bead N: Spheroid C: Orange M: Limestone

L: 23mm D: 19mm W: 22mm

Dec: n/a B/C: Burned

SoP: Bi-conical DoP: 6.5mm

Discoloured from heat.

Ass. B/P: 189-190 Cxt: recovered from the inner chamber

in association with a stone bead, ivory rings, Carrowkeel Ware, chalk balls
and chert debitage, antler pins, cremated and unburnt human and animal bone

Primary Ref: Burenhult 1980

Image Ref: Herity 1974

**191. SL014-209006- NMI E199:2**

Co: Sligo Td: Carrowmore (Carbury By.) Site: Carrowmore 4

T: Bead N: Barrel C: Grey M: Steatite

L: 13mm D: 10mm W: 11mm

Dec: n/a B/C: Burned

SoP: Bi-conical DoP: 4mm

Ass. B/P: 189-190 Cxt: recovered from the inner chamber

in association with a stone bead, ivory rings, Carrowkeel Ware,
chalk balls and chert debitage, antler pins, cremated and unburnt
human and animal bone

Primary Ref: Burenhult 1980

Image Ref: Herity 1974



192. WA827-007- NMI E47:1

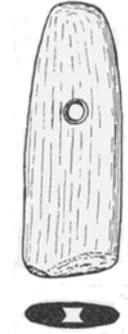
Co: Waterford Td: Harristown Site: Harristown

T: Pendant N: Axe C: Brown M: Mudstone

L: 65mm D: 24mm W: 7mm

SoP: Bi-conical DoP: 6mm

Dec: n/a B/C: n/a



The excavator felt that this 'axe-amulet', provided evidence of foreign influence in the construction of this tomb. Manufactured from a water rolled pebble.

Ass. B/P: n/a Cxt: Central chamber in associated with human bone, and a pebble.

Primary Ref: Hawkes, 1941

Image Ref: Hawkes, 1941/Herity 1974



Appendix B: Lacunae in the catalogue

This appendix summarises the details of assemblages that were not available for examination at the NMI (National Museum of Ireland) and have not previously been published.

County: Donegal **Td:** Magheracar **Site:** Magheracar **RMP:** DG106-011---

The assemblage from Magheracar consists of three small fragments that appeared to belong to a single bead. The information in the excavation report is limited, however it does suggest that the bead was recovered in association with burnt and unburnt human bone and primary Neolithic artefacts including; a miniature stone axe, lithics, chert, fragments of pottery and a possible decorated pin (Cody 1987; 1988). This bead was missing from the NMI archives and as a result has not been examined or petrographically identified, and so is not included in the results.

County: Meath **Td:** Gormanston **Site:** Knockingen/Knocknagen
RMP: ME028-021----

This research suggests that the bead assemblage of Gormanstown consisted of an inconclusive number of pestle pendants. The beads were recovered in what may have been a basin stone in association with burnt bone and charcoal, however, D'Alton does not mention any evidence of heat stress (D'Alton 1844, 130). The assemblage has been omitted from the results, although it is still considered a passage tomb assemblage (D'Alton 1844, 130). The location of the assemblage from Gormanstown is currently unknown.

**Appendix C: Petrographical Report on Neolithic Beads from Irish
Passage Tombs**



PETROGRAPHICAL REPORT

on

Neolithic Beads

from

IRISH PASSAGE TOMBS

on behalf of

Johanna Callaghan

School of Science,

Institute of Technology Sligo,

Sligo

by

EurGeol Dr Stephen Mandal MIAI PGeo

1. Introduction

This report is based on the macroscopic (hand specimen) examination of 131 of 135 beads and pendants from Irish Passage Tombs. Four were not available for examination at the time of the study, and of the 131, eight were identified through photographs.

The purpose of the study was to identify the rock types from which the objects were made and to highlight potential sources for them. It is important to note that macroscopic petrographical studies have been considered of limited value in comparison to microscopic (thin section and geochemical analysis) studies. On the other hand, macroscopic studies provide an excellent preliminary assessment tool and have proven to be of considerable value in petrographical studies (e.g. see Mandal 1997; Cooney and Mandal 1998).

2. Results

The results of the assessment are shown in Appendix 1 and Figure 1 and are summarised below in Table 1.

Petrography	No	%
Dolerite	1	0.8%
Sandstone	3	2.3%
Mudstone	10	7.6%
Shale	1	0.8%
Limestone	12	9.2%
Jasper	10	7.6%
Slate	1	0.8%
Steatite	89	67.9%

Amber	1	0.8%
Bone	3	2.3%
Total	131	100.0%

Table 1. Results of petrographical analysis.

2.1 Steatite

Over two thirds of the assemblage (89; 67.9%) are made from steatite. Steatite is a metamorphic rock which is a soft heavy compact variety of talc with a slightly soapy feel, consisting of hydrated magnesium silicate. It should be noted that 23 of these are uncertain (?), due to surface weathering / alteration making identification difficult.

In general, these range from light grey to black in colour. Twenty-seven have a chalky texture / have chalky inclusions, whilst 16 have a glassy texture. Forty-three appear to have been burned / heat stressed. As illustrated in the Venn diagram below (Figure 2), there is some overlap between these textures and the appearance of burning.

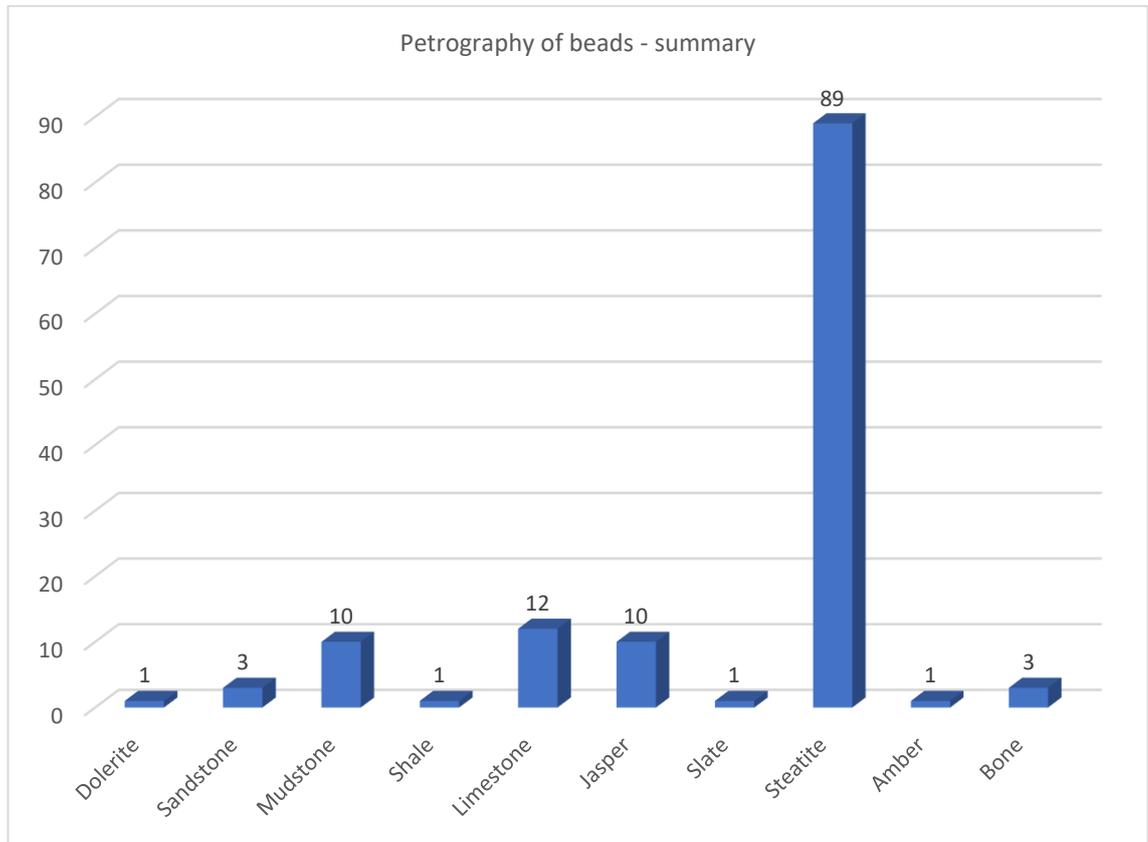


Figure 1. Summary of results of petrographical analysis

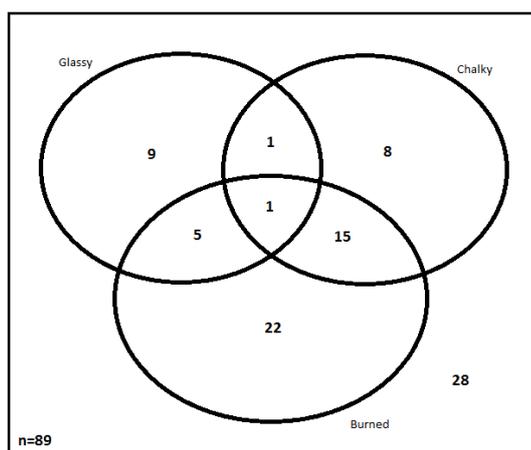


Figure 2. Venn diagram showing relationships between glassy and chalky textures and evidence of burning of steatite beads

Interestingly, a high percentage of steatite beads from Carrowkeel, County Sligo, have a glassy texture (11 of 27; 40.7%), and the same percentage have a chalky texture; although only two are both glassy and chalky.

Looking at the beads that appear to be burned / heat stressed, it is interesting that beads from nearly all the sites in the assemblage exhibit this. Notably six of seven from Newgrange, County Meath; 11 of 16 from Knockroe, County Kilkenny; 10 of 27 from Carrowkeel, County Sligo; and six of 14 from Corstown, County Meath.

2.2 Dolerite

Only one bead, that from Carnaweeleen, County Sligo (RSAI.77.3), is made from an igneous rock type, dolerite. It appears to be a water rolled pebble.

2.3 Sedimentary rock types

Thirty-six of the beads are made from sedimentary rock types: three from sandstone, 10 from mudstone, one from shale, 12 from limestone and 10 from jasper. The most notable are the red jasper beads, of which four are from Carrowkeel, County Sligo; two from Fourknocks and three from Patrickstown, County Meath; and one from Knockroe, County Kilkenny. Nine of these appear to have been burned (four from Knockroe, County Kilkenny; three from Carrowmore, County Sligo; one from Moylehide, County Fermanagh; and one from an unknown location).

2.4 Metamorphic rock types

Steatite is a metamorphic rock type but is discussed above due to its numerical dominance of the assemblage. The only other bead made from a metamorphic rock type, slate, is from Knockroe, County Kilkenny (E554:432). The identification is however, not certain, and the object appears to have been burned.

2.5 Amber

Figure 3. Results of petrographical analysis by site

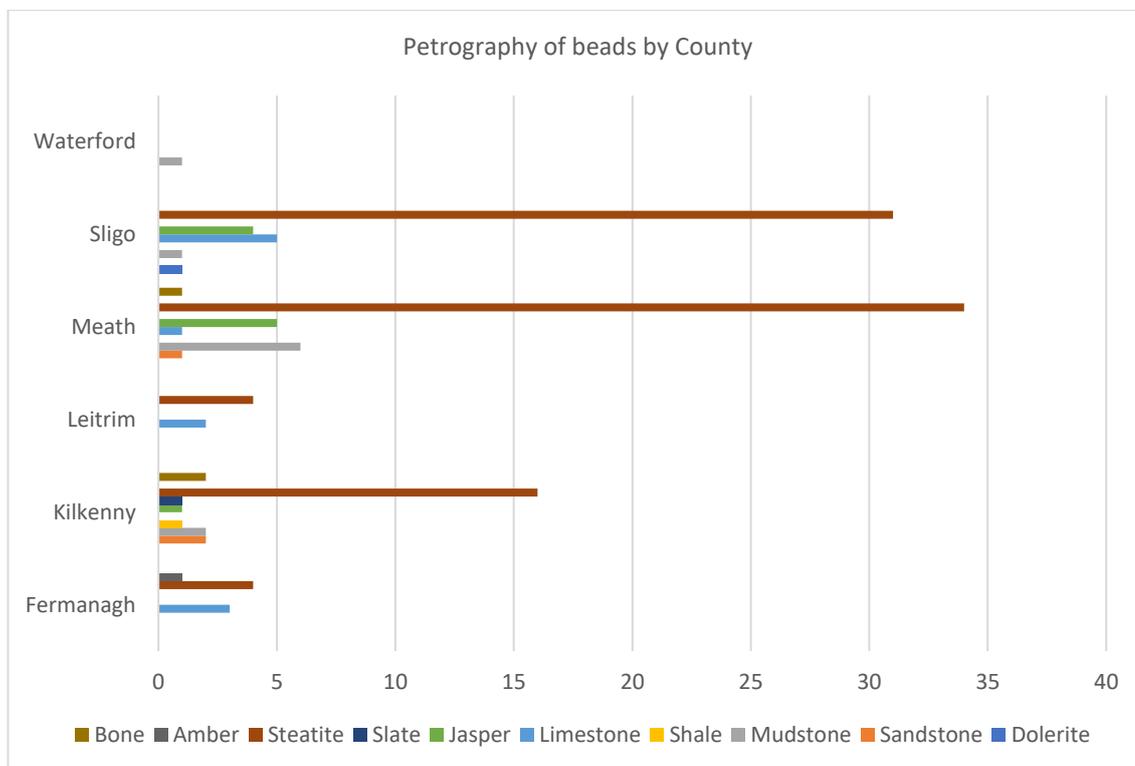


Figure 4. Results of petrographical analysis by county

4. Potential sources

4.1 Steatite

The Geological Survey of Ireland have produced a database of mineral localities in Ireland

(<http://www.gsi.ie/Programmes/Minerals/Databases/Minerals+Inventory+MinLocs.htm>). The data for steatite is shown in Appendix 2. There are widespread sources for steatite in the west and northwest of Ireland in Counties Galway, Mayo and Donegal. Steatite is a relatively soft rock type and would not survive transport over large distances by ice. It is therefore likely that the steatite used for making

beads found at Irish Passage Tombs, particularly those on the east coast of Ireland, was imported by humans.

4.2 Amber

If the bead from Moylehide, County Fermanagh (RIA1898:17.1) is confirmed as being made from amber, this is highly significant as the likely source is the Baltic.

4.3 Other rock types

It is likely that the sources for all of the remaining stones are relatively local. It is, however, important to note that these objects were probably not sourced from bedrock, but from secondary sources, such as from lakeshore deposits and in the glacial tills / sub-soils at the sites. All of the rock types identified (other than steatite and amber), including jasper, which occurs in sediments relating to the Old and New Red Sandstones, occur in tills throughout Ireland.

5. Conclusions and Recommendations

It is important to note that the identification of the beads and pendants, using a hand lens, was difficult, due the size of the objects and the level of weathering. To confirm the identifications would require more detailed analysis, such as x-ray diffraction or x-ray fluorescence, to give a breakdown of the mineral or chemical composition. However, given the size of the beads, and the level of weathering, this may not be possible without destroying the beads, which is clearly not an option. Although the identifications cannot be confirmed with 100% certainty, it is clear that the majority of beads are made from one rock type (believed to be steatite).

The appearance of burning / heat stress on a significant proportion of the beads is very interesting. In total, 53 of 131 (40.0%) have evidence of having been burned / heat stressed. However, 43 of 89 steatite beads (48.3%) appear burned, compared to 10 of 42 (23.8%) of other rock types. The spread of burned / heat stressed beads across sites and regions is also interesting (see Figures 5 - 8). Whilst

the sample size is small, it is interesting to note that the burning of beads appears to be a feature of all Irish passage tombs.

It is not possible to determine with any degree of certainty the level of burning that these beads have undergone. A programme of experimental archaeology would be useful to attempt to determine factors such as the degree or length of burning; for example, whether the beads were part of a cremation pyre, or if they were added at some point in the cremation process, or burned separately.

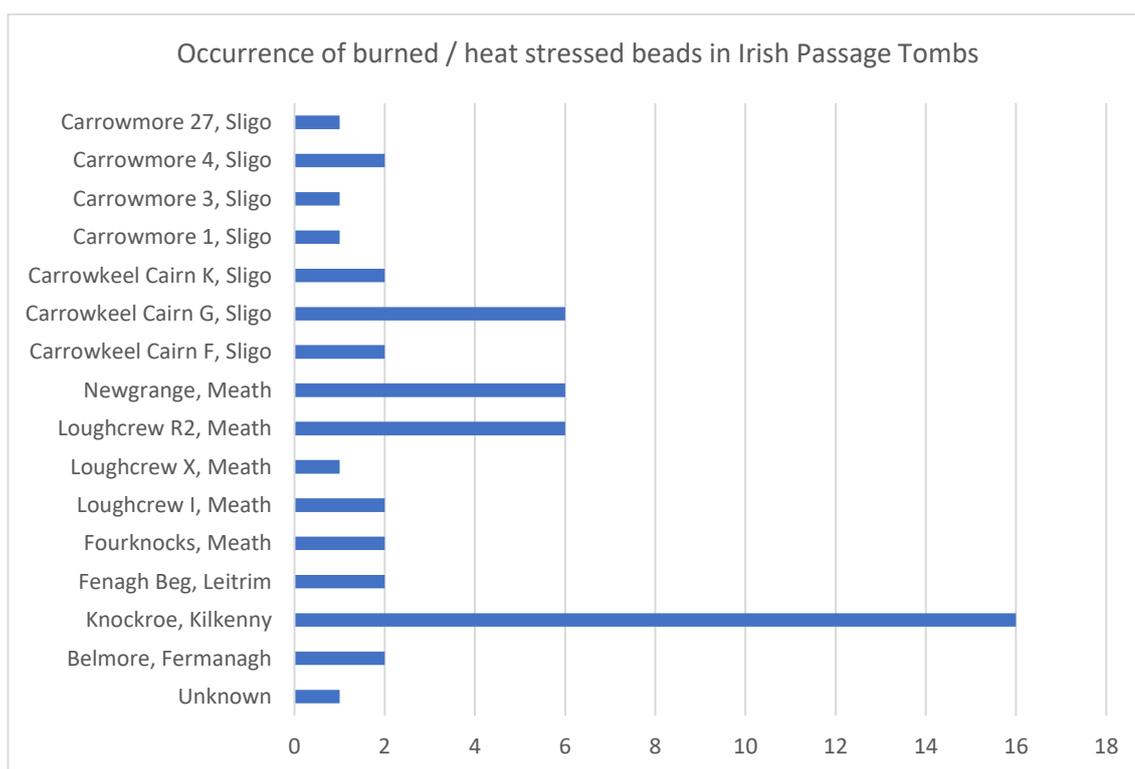


Figure 5. Occurrence of burned / heat stressed beads in Irish Passage Tombs

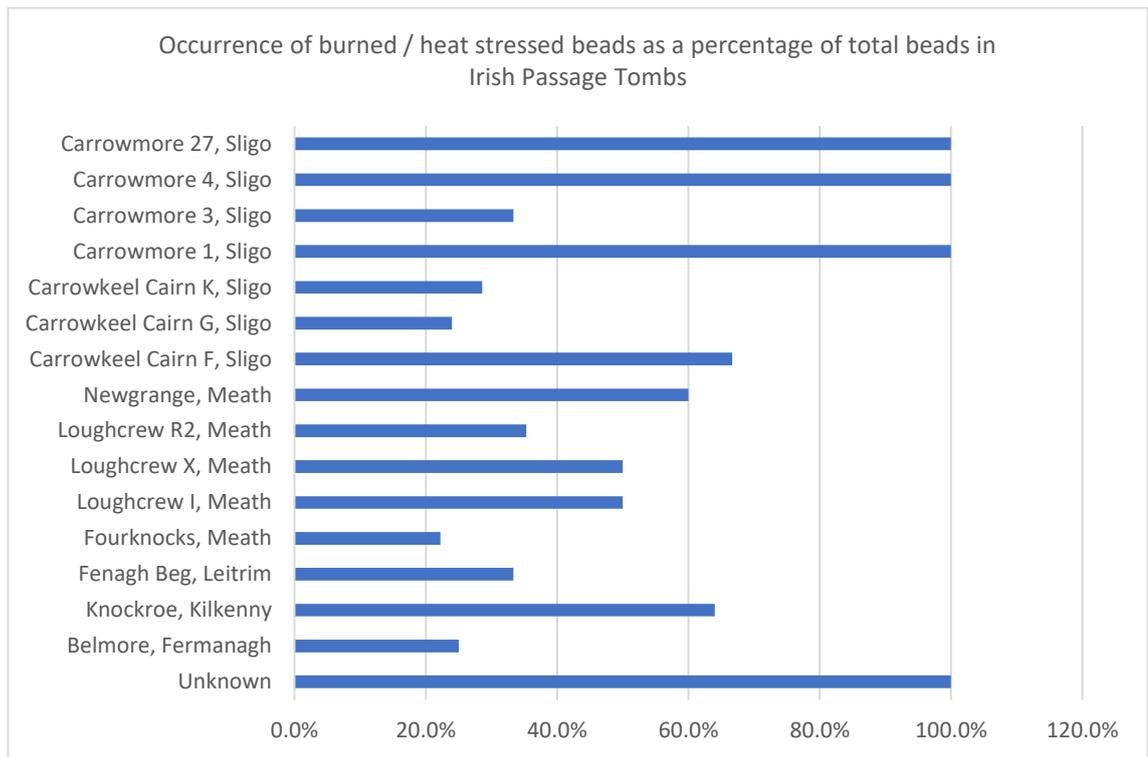


Figure 6. Occurrence of burned / heat stressed beads as a percentage of total beads in Irish Passage Tombs

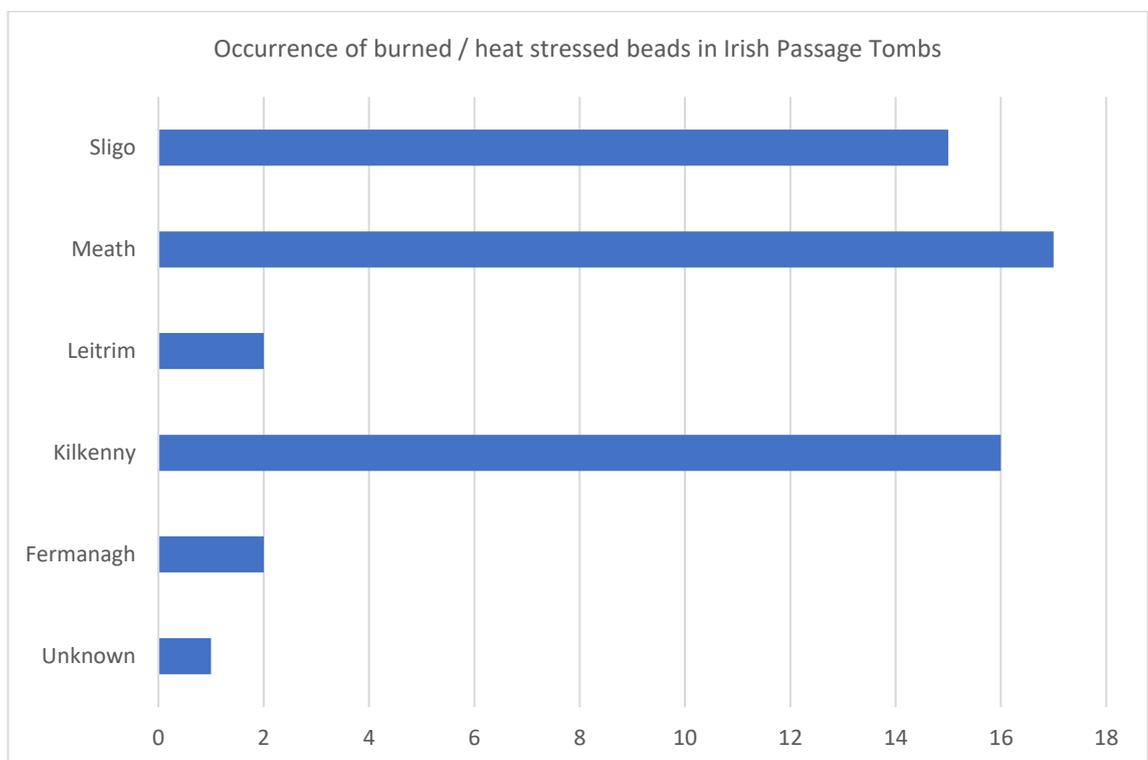


Figure 7. Occurrence of burned / heat stressed beads in Irish Passage Tombs

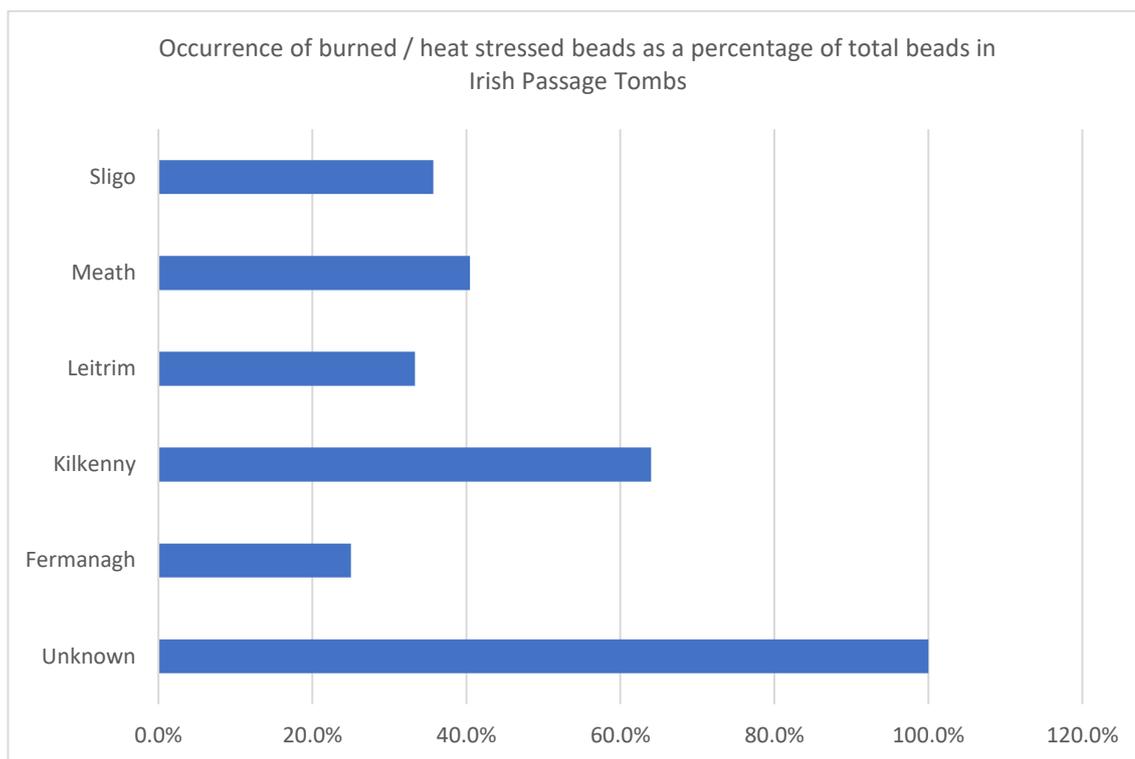


Figure 8. Occurrence of burned / heat stressed beads as a percentage of total beads in Irish Passage Tombs

6. Bibliography

Cooney, G. and Mandal, S., 1998. *The Irish Stone Axe Project: Monograph I*. Wordwell: Wicklow.

Mandal, S., 1997. Striking the balance: the roles of petrography and geochemistry in stone axe studies in Ireland. *Archaeometry* **39(2)**, 289-308.

Geological Survey of Ireland Mineral Localities (MinLocs) database—

<http://www.gsi.ie/Programmes/Minerals/Databases/Minerals+Inventory+MinLocs.htm>

Geological Survey of Ireland geology and soils mapping –

http://spatial.dcenr.gov.ie/imf/imf.jsp?site=GSI_Simple

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

NMI Reg	County	Townland	Site	Type	Material	Rock type	Notes
RIA1898:17.1	Fermanagh	Moylehide	Belmore	Bead	Stone	Amber	
RIA1898:17.2	Fermanagh	Moylehide	Belmore	Bead	Stone	Steatite	
RIA1898:17.4	Fermanagh	Moylehide	Belmore	Pendant	Stone	Limestone	
RIA1898:17.5	Fermanagh	Moylehide	Belmore	Pendant	Stone	Steatite	
RIA1898:17.6	Fermanagh	Moylehide	Belmore	Pendant	Stone	Limestone	
RIA1898:17.7	Fermanagh	Moylehide	Belmore	Pendant	Stone	Steatite?	Burned; chalky
RIA1898:17.8	Fermanagh	Moylehide	Belmore	Pendant	Stone	Steatite?	
RIA1898:17.9	Fermanagh	Moylehide	Belmore	Pendant	Stone	Limestone	Possibly heated
SA1928:780	Leitrim	Fenagh Beg	Fenagh beg	Bead	Stone	Steatite	Glassy; grey
SA1928:779	Leitrim	Fenagh Beg	Fenagh beg	Pendant	Stone	Limestone?	Grey
SA1928:778	Leitrim	Fenagh Beg	Fenagh beg	Bead	Stone	Steatite?	Chalky; red stained; burned?
SA1928:776	Leitrim	Fenagh Beg	Fenagh beg	Bead	Stone	Steatite	Burned
SA1928:774	Leitrim	Fenagh Beg	Fenagh beg	Pendant	Stone	Steatite	Chalky; black

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

SA1928:773	Leitrim	Fenagh Beg	Fenagh beg	Pendant	Stone	Limestone	Water rolled cobble; circular; faceted; perforated; broken
1942:962	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Burned
1942:961	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Chalky; burned?
1942:960	Meath	Corstown	Loughcrew R2	Pendant	Stone	Mudstone?	Brown
1942:959	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Chalky
1942:958	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite?	Red; flaking; burned
1942:957	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Chalky; possibly burned
1942:956	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Grey
1942:955	Meath	Corstown	Loughcrew R2	Bead	Stone	Mudstone	Brown; fine grained
1942:954	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	
1942:953	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Chalky; possibly burned
1942:951	Meath	Corstown	Loughcrew R2	Pendant	Stone	Steatite	Chalky; possibly burned
1942:950	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite	Chalky; possibly burned
1942:949	Meath	Corstown	Loughcrew R2	Pendant	Stone	Steatite	Grey

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

1942:948	Meath	Corstown	Loughcrew R2	Pendant	Stone	Steatite
1942:215	Meath	Corstown	Loughcrew R2	Bead	Stone	Bone?
SA1900:37.1	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite
SA1900:37.2	Meath	Corstown	Loughcrew R2	Bead	Stone	Steatite

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

NMI Reg	County	Townland	Site	Type	Material	Rock type	Notes
E8:19	Meath	Fourknocks	Fourknocks 1	Bead	Stone	Steatite	Burned
E8:20	Meath	Fourknocks	Fourknocks 1	Pendant	Stone	Jasper	Orange
E8:28	Meath	Fourknocks	Fourknocks 1	Pendant	Stone	Mudstone	Brown/grey; Fine grained
E8:30	Meath	Fourknocks	Fourknocks1	Pendant	Stone	Steatite?	Hard; chalky colour
E8:31	Meath	Fourknocks	Fourknocks 1	Fragments	Stone	Steatite	Burned
E8:33	Meath	Fourknocks	Fourknocks 1	Pendant	Stone	Jasper	
E8:37	Meath	Fourknocks	Fourknocks 1	Pendant	Stone	Steatite	Grey
E8:38	Meath	Fourknocks	Fourknocks 1	Bead	Stone	Steatite	Glassy; black
E8:53	Meath	Fourknocks	Fourknocks 1	Bead	Stone	Steatite	Grey
E56:574	Meath	Newgrange	Newgrange		Stone	Steatite	Glassy; possibly burned
E56:549	Meath	Newgrange	Newgrange		Stone	Steatite	Glassy; possibly burned
E56:568	Meath	Newgrange	Newgrange	Pendant	Stone/Ceramic	Steatite?	Burned
E56:569	Meath	Newgrange	Newgrange	Pendant	Stone/Ceramic	Steatite?	Red stained; burned

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

E56:577a	Meath	Newgrange	Newgrange	Stone	Steatite	Burned
E56:575b	Meath	Newgrange	Newgrange	Stone/Ceramic	Steatite?	Pendant
E56:576a	Meath	Newgrange	Newgrange	Stone/Ceramic	Steatite?	Red stained; burned
E126:60	Meath	Newgrange	Newgrange	Stone	Mudstone	Grey; fine grained
E126:61	Meath	Newgrange	Newgrange	Stone	Mudstone	Grey; fine grained
E126:62	Meath	Newgrange	Newgrange	Stone	Mudstone	Grey; fine grained
1942:1116	Meath	Newtown	Loughcrew H	Stone	Unknown	Bead
1942:1117	Meath	Newtown	Loughcrew H	Stone	Unknown	Bead
1942:1118	Meath	Newtown	Loughcrew H	Stone	Unknown	Bead
1942:1149	Meath	Newtown	Loughcrew H	Stone	Limestone	Chalky
1942:1209	Meath	Patrickstown	Loughcrew X	Stone	Steatite?	Brown; coarse grained
1942:883	Meath	Patrickstown	Loughcrew Xa	Stone	Jasper	Pendant
1942:882	Meath	Patrickstown	Loughcrew Xa	Stone	Jasper	Pendant
1942:881	Meath	Patrickstown	Loughcrew Xa	Stone	Steatite	Chalky

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

1942:880	Meath	Patrickstown	Loughcrew X	Bead	Stone	Steatite	Grey; burned
X4241	Meath	Patrickstown	Loughcrew I	Pendant	Stone	Steatite?	Chalky; red stained; burned
X4242	Meath	Patrickstown	Loughcrew I	Bead	Stone	Steatite	Glassy; grey; burned
X4243	Meath	Patrickstown	Loughcrew I	Pendant	Stone	Jasper	
X4244	Meath	Patrickstown	Loughcrew I	Pendant	Stone	Sandstone	Water rolled cobble; fine grained; grey
X4245	Meath	Patrickstown	Loughcrew S	Pendant	Stone	Steatite?	Grey
RSAL.77.3	Sligo	Carnaweeleen	Cairn R	Bead	Stone	Dolerite	Water rolled pebble

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

NMI Reg	County	Townland	Site	Type	Material	Rock type	Notes
E624:21	Sligo	Carrowkeel	Cairn K	Pendant	Stone	Steatite?	Burned; chalky
E624:22	Sligo	Carrowkeel	Cairn K	Pendant	Stone	Jasper	
E624:23	Sligo	Carrowkeel	Cairn K	Pendant	Stone	Limestone	
E624:24	Sligo	Carrowkeel	Cairn K	Pendant	Stone	Steatite?	Burned; chalky inclusions
E624:25	Sligo	Carrowkeel	Cairn K	Pendant	Stone	Steatite	
E624:26	Sligo	Carrowkeel	Cairn K	Bead	Stone	Jasper	
E624:27	Sligo	Carrowkeel	Cairn K	Bead	Stone	Jasper	
E624:28	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Steatite?	Burned; chalky inclusions
E624:29	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Steatite	Glassy; black
E624:30	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Steatite?	Glassy; chalky inclusions
E624:31	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Unknown	
E624:32	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Steatite	Glassy; grey
E624:33	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Steatite	Glassy; chalky inclusions

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

E624:34	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Glassy; black
E624:35	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Glassy; black
E624:36	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Glassy; black
E624:37	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Glassy; brown
E624:38	Sligo	Carrowkeel	Cairn G	Bead	Stone	Limestone?	Brown
E624:39	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Steatite?	Chalky
E624:40	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Chalky; light grey
E624:41	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Glassy; chalky inclusions; burned
E624:42	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Glassy; grey
E624:43	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Grey
E624:44	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Grey
E624:45	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Grey
E624:46	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Chalky
E624:47	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Light grey

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

E624:48	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Chalky; burned
E624:49	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	Chalky; burned
E624:50	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite	
E624:51	Sligo	Carrowkeel	Cairn G	Pendant	Stone	Limestone	Grooved; broken
E624:52	Sligo	Carrowkeel	Cairn G	Bead	Stone	Steatite?	Chalky; burned
E624: 53	Sligo	Carrowkeel	Cairn F	Bead	Stone	Steatite	Chalky; burned
E624:54	Sligo	Carrowkeel	Cairn F	Fragment	Stone	Steatite?	Glassy; burned
E624:55	Sligo	Carrowkeel	Cairn F	Bead	Stone	Jasper	
NMI Reg	County	Townland	Site	Type	Material	Rock type	Notes
1995E22,	Sligo	Carrowmore	Carrowmore 1	Fragment	Possibly clay	Limestone	Fragments; burned
1995:10101F1	?	?				Limestone	Burned
1887:40:00	Sligo	Carrowmore	Carrowmore 3	Bead	Stone	Steatite?	Burned?
1887:39:00	Sligo	Carrowmore	Carrowmore 3	Bead	Stone	Steatite	Chalky
1887:38:00	Sligo	Carrowmore	Carrowmore 3	Bead	Stone	Steatite	Chalky

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

E199:1	Sligo	Carrowmore	Carrowmore 4	Bead	Stone	Limestone?	Burned?
E199:2	Sligo	Carrowmore	Carrowmore 4	Bead	Stone	Steatite	Burned
E198:13	Sligo	Carrowmore	Carrowmore 27	Bead	Stone	Mudstone?	Red claystone; burned
E47:2	Waterford	Harristown	Harristown	Pendant	Stone (natural)	Mudstone	Water rolled pebble
?	Meath	Dowth			Stone	Steatite?	Black
C236:604	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
E554:2000	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	
C236:606	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
C236:S507:SF822	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
C216:5165(1)/1099	Kilkenny	Knockroe	Knockroe	Bead	Bone?	Bone?	Burned?
C236:605	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite?	Burned?
C216:SF2035	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
C258:658	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
C236:S507:SF829	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

C236:5507:SF835	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
E554:452	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
E554:883	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
E554:352	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	Burned?
C233:600	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	
E554:323	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	
E554:339	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite	
C236:614	Kilkenny	Knockroe	Knockroe	Bead	Stone	Shale	
E554:442	Kilkenny	Knockroe	Knockroe	Bead	Stone	Steatite?	
E554:432	Kilkenny	Knockroe	Knockroe	Bead	Stone	Slate?	Burned?
E554:2033	Kilkenny	Knockroe	Knockroe	Bead	Bone	Bone	Burned
E554:188	Kilkenny	Knockroe	Knockroe	Bead	Stone	Sandstone	Old red sandstone; burned
C233:5511:649	Kilkenny	Knockroe	Knockroe	Bead	Stone	Sandstone	Fine grained; yellow/red
E554:189	Kilkenny	Knockroe	Knockroe	Bead	Stone	Mudstone	Red/grey; banded

Appendix C: Petrographical Report on Neolithic Beads from Irish Passage Tombs

E554:445	Kilkenny	Knockroe	Knockroe	Bead	Stone	Jasper	Burned?
E554:414	Kilkenny	Knockroe	Knockroe	Bead	Stone	Mudstone	Shaley

Appendix D: Passage tomb sites included in the research

The following Appendix provides an outline for each of the 22 passage tombs, from across eight counties, that have produced Neolithic stone bead and/or pendant assemblages (Table 13). These sites were identified during a four-month period of desk-based assessment of the Sites and Monuments Records, excavation reports, antiquarian publications, and contemporary publications, which formed the basis of Appendix A and B.

No.	County	Townland	Site	RMP	Site type
1	Donegal	Magheracar	Magheracar	DG106-011----	1
2	Fermanagh	Moylehide	Belmore	FER210:050	2
3	Kerry	Ballycarty	Ballycarty	KE038-074----	2
4	Kilkenny	Knockroe (Kells By., Killamery ED)	Knockroe	KK034-019001-	3
5	Leitrim	Fenagh Beg	Fenagh Beg	LE025-093001-	2
6	Meath	Castleboy (Skreen By., Tara Par.)	The Mound of the Hostages	ME031-033007	2
7	Meath	Corstown (Fore By.,)	Loughcrew R2	ME015-012007-	2
8	Meath	Fourknocks	Fourknocks 1	ME033-028001-	3
9	Meath	Gormanstown	Knockingen/Knocknagen	ME028-021----	3
10	Meath	Knowth	Knowth 1	ME019-030001-	3
11	Meath	Newgrange	Newgrange	ME019-045----	3
12	Meath	Newtown (Fore By., Moylagh ED)	Loughcrew H	ME015-003003-	2
13	Meath	Newtown (Fore By., Moylagh ED)	Loughcrew I	ME015-003006-	2
14	Meath	Patrickstown	Loughcrew X1	ME009-071001-	2
15	Meath	Patrickstown	Loughcrew X2	ME009-017002-	2
16	Sligo	Carnaweeleen	Carrowkeel R	SL040-006001	2
17	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel F	SL040-096----	2
18	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel G	SL040-089----	2
19	Sligo	Carrowkeel (Tirerrill By., Templevanny ED)	Carrowkeel K	SL040-093----	2
20	Sligo	Carrowmore (Carbury By.)	Carrowmore 3	SL014-209004-	1
21	Sligo	Carrowmore (Carbury By.)	Carrowmore 4	SL014-209049-	1
22	Waterford	Harristown	Harristown	WA027-007----	2

Table 13: Complete list of sites included in this study (by author).

Type 1 Sites

County: Donegal **Td:** Magheracar **Site:** Magheracar **RMP:** DG106-011----

Magheracar is an isolated monument on the edge of a cliff face. It is an undifferentiated passage tomb 4.5m long, aligned to the southeast, and surrounded by a boulder circle that was originally 20m in diameter (Cody 2002, 184). Hensey (2015, 29) suggests that Magheracar is Type 1 due to the lack of evidence for cairn material; however, it is possible that the cairn has been denuded due to coastal erosion. According to Wood-Martin (1887-8), bones, ashes and a 'cinerary urn' were found here 'many years ago', suggesting possible reuse during the Bronze Age. The site was excavated by the National Monuments Service in 1986 and 1987 and a considerable quantity of cremated and unburnt human bone was recovered from the site, however no radiocarbon dates were obtained. Among the artefacts recovered were a miniature stone axe, lithics, chert, fragments of pottery, a possible decorated pin and three fragments of a single stone bead (Cody 1987; 1988).

County: Leitrim **Td:** Fenagh Beg **Site:** Fenagh Beg **RMP:** LE025-093001-

Fenagh Beg is situated on a rise in an area of rock outcrop and pasture surrounded by drumlins with two other passage tombs. The boulder circle is 15.7m in diameter and surrounds a simple passage tomb, 0.9m in diameter, which is currently exposed (De Valera and Ó Nualláin 1972, 142, Herity 1974, 278). The site was excavated in 1928 by Patrick Carey, a schoolteacher from Dublin, and an assemblage of four stone beads and two stone pendants was recovered in association with cremated human remains, a bone pin, one quartz and two chalk balls (Gogan 1930, 90). The artefacts were donated to the NMI, with a short account and plan of the site (Topographical Files, NMI). There is no record of the excavation, no radiocarbon dates available, and it is uncertain whether or not the monument ever had a cairn as the site is currently in a state of disrepair. However,

the site is smaller in size with no evidence for an upstanding passage and surrounded by an upright boulder circle, likely an earlier simple passage tomb of the Type 1 typology. The beads are recorded as bone in the ASI records (Moore 2003), however, petrographical analysis in this study has determined that they are all stone.

County: Sligo **Td:** Carrowmore (Carbury By.) **Site:** Carrowkeel 3 **RMP:** SL014-209004-

The Carrowmore complex is centrally situated on the Coolera peninsula in Co. Sligo surrounded by water on three sides, with Ballisadere Bay to the south, the Atlantic Ocean to the west and Sligo Bay to the north. Carrowmore consists of a cluster of approximately 30 passage tombs although current estimates place the original number at closer to 45 (Hensey 2015, 12). Carrowmore 3 comprises a small central chamber, roofed with a capstone, and has an open passage leading to the SSE and ending before reaching the surrounding boulder circle, which is 14m in diameter (Bergh 1995). The tomb appears to be orientated towards the central focal monument of the Carrowmore complex, Tomb 57 (Listoghil). Carrowmore 3 has been the subject of several investigations. In 1837 Petrie noted that Walker, the landowner, had recovered human remains from the chamber (Petrie 1837, 435). Wood-Martin and Graves subsequently reinvestigated the monument and recovered cremated and unburnt bone from the chamber in association with three stone beads, a quartz pendant, and bone and antler pins (Wood-Martin 1885-6, 541-551, 1888, 21-31). Further excavations carried out between 1978-1982, and 1992-1994 produced additional material including cremated human and animal bone and antler pins from the disturbed passage and chamber area. Two Bronze Age cist burials to the west of the passage contained single burials with a stone bead in each (Burenhult 1980), these are not considered in this research. Dating carried out using charcoal deposits by Burenhult produced a controversial multi-phase model of construction and use beginning in the Late Mesolithic (5400cal BC and 4600cal BC) and extending into the Neolithic (Burenhult 2003, 68). Re-

evaluation of the sites by Bergh and Hensey (2013a, 33) demonstrated that the monument was constructed sometime after 3970-3520 cal BC with deposition likely continuing until 2840 to 2280BC and the original model is untenable. Recently, *The Carrowmore Pins Project* has utilised antler and bone pin fragments from Wood-Martin's 1887 investigation and Burenhult's 1979 and 1994 excavations to produce a more reliable chronology related to the use of the Carrowmore monuments, spanning 3775-3520cal BC to 3305-2950cal BC (Bergh and Hensey 2013b, 364).

County: Sligo **Td:** Carrowmore (Carbury By.) **Site:** Carrowmore 27 **RMP:** SL014-209049-

Also located in the Carrowmore complex, this is a passage tomb consisting of a cruciform chamber enclosed by a boulder circle 23m in diameter. The monument is also orientated towards Tomb 57 (Listoghil), the central monument of the Carrowmore complex. Explorations by Wood-Martin in 1887 produced cremated and unburnt human and animal bone, marine shells, hammer-stones pieces of quartz, Carrowkeel Ware and two bone or antler pins (Wood-Martin 1888, 59-60). The monument was subsequently excavated by Burenhult in 1980 who recovered a large quantity of cremated and unburnt bone, fragments of ivory rings, antler pins, two chalk balls, lithics, chert debitage, sherds of Carrowkeel Ware and a stone bead. A Bronze Age cremation was recovered from a cist close to the inner circle at the northwest. Revaluation of the radiocarbon dates provided by Burenhult by Bergh and Hensey (2013a, 33) concluded that the chamber and stone packing were constructed after 3940-3530 cal BC

Type 2 Sites

County: Fermanagh **Td:** Moylehide **Site:** Belmore **RMP:** FER210:050

This monument is situated in a prominent position on the summit of Belmore Mountain. A circular cairn 12.5m in diameter, it is orientated northeast and is cruciform in plan (Evans 1966 166-167). The site was excavated over a period of four days in 1894 by Thomas Plunkett (Coffey 1898, 660). At the time of excavation, the cairn had a depression on the summit, marking the collapse of structural stones beneath, however, a single capstone was recorded over a left-hand recess (*ibid.*, 660). No kerb was mentioned in the report. The contents of the passage, the end chamber, and the right chamber consisted of a mass of cremated bone which was removed in bulk and consequently searched for artefacts. Three stone beads and six stone pendants were recovered from this mass, but their exact spatial location is unknown (*ibid.*, 662). Secondary Bronze Age burials had been inserted into the cairn and the left-hand recess in association with animal bone, sea-shells (Herity 1974, 231) and Bronze Age pottery. A cist had been constructed against the exterior of the monument in the angle formed by the left recess and the back chamber. This contained a human skull and some animal bone (Coffey 1898, 663).

County: Kerry **Td:** Ballycarty **Site:** Ballycarty **RMP:** KE038-074-

This monument was excavated in advance of the construction of the N2 road through Ballycarty, 4km east of Tralee. The excavation revealed a multi-phase tomb, possibly a passage tomb, situated on the west-facing slope of a limestone spur, with three additional cairns to the west, and a cairn situated on Knockawaddra Mountain also possibly representing a megalithic site (Connolly, 1996, 15-44). Phase 1 of the monument involved the construction of an internal

sub-circular chamber, passage and three kerbs (*ibid.*, 35-6). In Phase 2 a winged façade was constructed on the western side of the chamber and a secondary passage orientated west-northwest was built (Connolly 1996, 17). The cairn was likely constructed at this stage. Phase 3 involved the realignment of the passage and the possible construction of the D-shaped chamber. The later levels of the cairn featured animal bone, iron slag, water-rolled stones and bronze pins. The passage produced a perforated limestone pendant and fragments of water rolled sandstone balls (Connolly 1996, 25-33). Connolly has suggested that the tomb is Neolithic in date based on the architecture and associated artefacts, however the radiocarbon dates are Bronze Age and Early Medieval requiring caution (Connolly 1996, 55). Hensey (2015) does not suggest that this tomb fits into the Type 2 category; however, the large size and upright passage are Type 2 characteristics. In addition, the stone pendant was recovered in the passage, which was constructed during Phase 2 of the monument. This phase also saw the extension of the passage, the development of the inner chamber and the addition of the cairn, which might suggest development along the lines of Type 2 monuments.

County: Meath **Td:** Castleboy (Skreen By., Tara Par.) **Site:** The Mound of the Hostages **RMP:** ME031-033007

The 'Mound of the Hostages' is situated on the Hill of Tara. The cairn is 21m in diameter covering an undifferentiated passage tomb orientated to the east. Three of the internal orthostats feature megalithic art. Three pre-cairn cists are constructed against the exterior of the monument containing cremated and unburnt remains, and typical passage tomb artefacts including stone and bone beads and pendants were discovered. Neolithic cremation burials were also encountered surrounding the perimeter of the cairn and are considered contemporary with the early use of the monument. The remains of over 300 individuals were recovered from the monument producing Neolithic, Bronze Age and Iron Age dates. Reuse of the monument during the Bronze Age resulted in the removal of Neolithic material and confused stratigraphy within the monument;

however, typical passage tomb artefacts were intact. Prior to excavation between 1956 and 1959 the site was in good condition and, despite reuse in later periods, the structural stones had not been disturbed. The excavation was carried out initially by Seán P. Ó Ríordáin and subsequently by Ruadhri de Valera (O'Sullivan 2005). The Mound of the Hostages has produced the most significant corpus of radiocarbon dates from an Irish passage tomb to date comprising 63 Neolithic and Bronze Age examples (Bayliss and O'Sullivan 2013, 34). This extensive dating programme suggests that activity relating to the tomb began around 3210 BC and the primary period of use continued until about 2910 BC (*ibid.*, 43). The monument then saw a period of reuse in the Bronze Age between 2140 and 2050BC. The final use of the monument took place between 1885 and 1625BC (*ibid.*, 53).

County: Meath **Td:** Corstown (Fore By.) **Site:** Loughcrew R2 **RMP:** ME015-012007-

Loughcrew passage tomb complex spreads across the four hills of Carbane West, Carrickbreac or Newtown, Carbane East and Patrickstown, Co. Meath. Although morphologically considered later in date than Carrowkeel, the Neolithic material from Loughcrew has not been dated (Hensey 2015, 147). Many of the monuments from the Loughcrew complex may have been adapted from Type 2 to Type 3 sites. Loughcrew R2 is a kerbed cairn 8.2m in diameter, possibly cruciform in shape (Rotherham 1895, 311-6, Herity 1974, 239-242; Shee-Twohig 1981, 213). Conwell noted that 10 orthostats remained *in situ* in 1868 with five nearby. However, when Rotherham excavated this cairn in 1895 there were no orthostats remaining. Rotherham provided no account of the spatial location of artefacts, but at least five pottery vessels (mainly Carrowkeel Ware) bone and antler pins, six quartzite pebbles, Bronze Age pins and three arc-shaped bone pendants were recovered. The bead assemblage includes eleven stone beads, and three stone pendants, found at the western edge of the excavation, and a fourth in the debris that was removed from the cairn (Rotherham 1895, 311-16).

County: Meath **Td:** Newtown (Fore By., Moylagh ED) **Site:** Loughcrew H

RMP:ME015-003003-

Loughcrew H consists of a cairn 16m in diameter covering an unroofed cruciform internal structure orientated southeast (Prendergast 2011, 48). The right-hand chamber in Cairn H is substantially larger than the others, an emphasis that is widespread in the Irish passage tomb tradition. It also contained a stone basin, six decorated orthostats, one decorated sillstone and one kerb stone (Shee-Twohig 1981, 208-9). The passage and chamber were excavated in 1865 by Conwell in association with the RIA, and the spoil heap was subsequently revisited and assessed in 1868 (Herity 1974, 236). The passage contained a deposit of up to 90cm of cremated human bone, and several pieces of quartz. The three chambers contained stone, bone and soil, producing primary finds including Carrowkeel ware, chalk and stone balls, lithics and half a calcite disc pendant (Conwell 1864, 368). Further investigations were carried out by Rafferty in 1943 and produced material associated with the Iron Age (Vegby 2016).

County: Meath **Td:** Newtown (Fore By., Moylagh ED) **Site:** Loughcrew I **RMP:** ME015-003006-

Loughcrew I is a kerbed cairn 19m in diameter covering a passage tomb with seven recesses, 6.6m in length, orientated east towards the focal monument of the Loughcrew complex (Conwell 1868, 365). Located on a small knoll on Carnbane West, it was excavated by Conwell in 1868. Seven orthostats and a stone in the southwest recess all bear megalithic art (Shee-Twohig 1981, 209-10). A stone bead and two stone pendants were recovered from recess A. There were no additional artefacts recovered, although each recess produced cremated human remains (Conwell 1964, 366). The size, enclosed passage, recessed design and internal megalithic art suggests that Loughcrew I was a Type 2 passage tomb (Herity 2015, 36).

County: Meath **Td:** Newtown (Fore By., Moylagh ED) **Site:** Loughcrew X1 **RMP:** ME009-071001-

The remains of cairn X1 consists of a circle of kerb stones approximately 11m in diameter, surrounding an orthostat (Herity 1974, 243-244). Passage tomb art has been identified on both the entrance kerb stone and the orthostat. Rotherham carried out preliminary excavations at the tomb, uncovering cremated human bone, bone pins, flint, Carrowkeel Ware and a pendant North of the ornamented orthostat (Rotherham 1985).

County: Meath **Td:** Newtown (Fore By., Moylagh ED) **Site:** Loughcrew X2 **RMP:** ME009-071002-

Loughcrew X2 is the remains of a probable passage tomb (Shee-Twohig *et al.* 2010, 20) consisting of a semi-circle of kerb stones and three damaged orthostats (Herity 1974, 244). One of these kerbstones displays extensive passage tomb art (Shee-Twohig *et al.* 2010, 20) and the diameter of the semi-circle suggests a kerb 13m in diameter (Herity 1974, 244). Rotherham recovered 3 stone pendants in association with cremated bone, flint, bone pins and fragments of Carrowkeel Ware (Rotherham 1895).

County: Sligo **Td:** Carnaweeleen **Site:** Carrowkeel R **RMP:** SL040-006001

The Carrowkeel-Keshcorran complex consists of 26 passage tombs extending across the Bricklieve Mountains (Hensey *et al.* 2013, 11). The dates recovered from passage tombs M, G and Mullaghfarna 1 at Carrowkeel all centre around 3200-2900 cal BC suggesting the continued use of the monuments at this time (Hensey *et al.* 2013, 17). Carrowkeel R is situated on a spur on the north-eastern slope of Keash, the highest hill of the Bricklieve Mountains, and is part of the Carrowkeel-Keshcorran passage tomb cemetery. Carrowkeel R is an undifferentiated passage tomb 5.75m long, orientated to the north-northeast, and covered with a kerbed cairn 19m in diameter (Moore and Callaghan 2016). Recent research suggests that

this monument may have been excavated by Rev. Cosgrave around 1856 (Moore and Callaghan 2016, 23). Cosgrave uncovered a number of stone beads and a large quantity of cremated human bone (Cosgrave 1856, 52). Two teeth and a stone bead were donated to the *Kilkenny and South East of Ireland Archaeological Society* and subsequently featured in the RSAI collection. They were deposited in the National Museum of Ireland in 1910; what happened to the additional material is unknown (Cosgrave 1856, 52). In 1993 a small pocket of cremated bone was found near the surrounding kerb forming a secondary deposit. Analysis revealed it was the remains of one adult (Moore and Callaghan 2016, 25).

County: Sligo **Td:** Carrowkeel (Tirerrill By., Templevanny ED) **Site:** Cairn F **RMP:** SL040-096----

Cairn F consists of a transceptal passage tomb with a corbelled roof covered by a collapsed cairn 29m in diameter. The passage is 6.2m in length and orientated north (Ó'Nualláin 1989, 83). Cairn F is part of the Carrowkeel-Keshcorran passage tomb cemetery, particularly the larger cluster of passage tombs located in the Bricklieve Mountains (Hensey *et al.* 2013). Eight of these monuments, including Cairn F, were excavated over a period of 16 days by Macalister and his team (*ibid.*, 6). The tomb was already collapsed at the time of its excavation, damaging the context and contents within (Macalister *et al.* 1912, 333). This excavation involved the destruction of the capstone and the removal of the material *en masse* from within the passage and recesses. The spatial locations of the artefacts are not known due to this rushed method of excavation (Hensey *et al.* 2013, 6). Cremated human remains were removed from the floor of the left, end and right recesses and the central chamber. Once removed they were sieved and produced cattle vertebrae, pieces of quartz, and lumps of water-worn limestone. Three stone beads were recovered from the right recess (*ibid.*, 83).

County: Sligo **Td:** Carrowkeel (Tirerrill By., Templevanny ED) **Site:** Cairn G

RMP: SL040-089----

This cairn is 18-20m in diameter and covers a cruciform passage tomb orientated to the northwest. This passage tomb is also one of the seven tombs from the Carrowkeel-Keshcorran cemetery excavated by Macalister (Macalister *et al.* 1912). The internal structure consists of a passage 2m in length ending in a chamber spanned by a corbelled roof (Ó'Nualláin 1989, 83). Prior to excavation by Macalister in 1911 the tomb was almost completely covered in peat (Macalister *et al.* 1912, 335). It was excavated over the course of a single day. The floors of the recesses were covered in cremated human bones. These remains were sieved and contained a considerable quantity of artefacts including Carrowkeel Ware and stone balls. Four stone pendants and seven stone beads were recovered from the central recess (*ibid.*, 335). A pilot dating project (Hensey *et al.* 2013) provided dates for two skull fragments (one adult, one child) recovered from the floor of the cairn in the 1960's showing use between 3346 and 2899 cal BC (Hensey *et al.* 2013, 16).

County: Sligo **Td:** Carrowkeel (Tirerrill By., Templevanny ED) **Site:** Cairn K

RMP: SL040-093----

Another monument from the Carrowkeel-Keshcorran cemetery, Cairn K, consists of a cairn 21.5-23m in diameter with an internal cruciform passage tomb 4.5m in length and orientated north (Ó'Nualláin 1989, 83). Excavation took place over a three-day period in 1911 by Macalister and his team. Their methodology involved removing large chunks of the cairn in order to discern the doorway, and the removal of material *en masse* from within the chambers (Macalister *et al.* 1912, 314-5). Cremated remains were spread across the floor of the chamber, the right recess, the central recess and compartments at the back of the recess. Cremated remains and sherds of Carrowkeel Ware were also recovered from beneath the floor slabs in the left recess (Macalister *et al.* 1912, 336). Additionally, the artefactual assemblage included stone balls, mushroom and poppy-headed antler

and bone pins, and a decorated Bronze Age bowl (Waddell and Ó Riordáin 1993, 130). Three stone pendants were recovered from the central chamber and two stone pendants and three stone beads were recovered from the compartments at the back of the central recess (Macalister *et al.* 1912, 336).

County: Waterford **Td:**Harristown **Site:**Harristown **RMP:** WA027-007--

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Harristown is an undifferentiated passage tomb with a circular covering cairn 15.25m in diameter surrounded by a kerb. It is uncertain whether the cairn was original or was a later addition to accommodate secondary Bronze Age burials (Hawkes 1941, 133). The passage is 6.1m in length and orientated to the east southeast (*ibid.*, 134). An early account by Reade records a local story that the monument had been robbed out by treasure hunters (Reade 1868-69, 161-2). This disturbance was noted during the subsequent excavation by Jacquetta Hawkes in 1939, however she concluded that the disturbance was limited and did not affect the primary deposit (Hawkes 1941, 137). Cremated remains were recovered in two concentrations at the back of the main chamber in association with a stone pendant and pebble. The floor of the internal structure was covered with charcoal and contained concentrations of quartz fragments and pebbles (*ibid.*, 131). Small deposits of cremated bone were found buried to the north, one of these was covered with a slab, and an additional deposit was found beneath a kerbstone to the West. Further cremations were recovered in a pit directly outside the entrance to the passage, containing an Early Bronze age cordoned urn (Brindley 2007, 148-151, Hawkes 1941, 141-142). Secondary cremations were inserted into the cairn in association with Bronze Age pottery and two cists (Waddell and Ó Riordáin 1993, 139). Harristown may be Type 1 or Type 2 monument based on the size and the possible later addition of the cairn.

Type 3 Sites

County: Kilkenny **Td:** Knockroe (Kells By., Killamery ED) **Site:** Knockroe
RMP: KK034-019001-

Knockroe is an isolated passage tomb situated on sloping ground in a landscape of low hills near the Linguan River. It consists of a circular cairn 20m in diameter which contains two passage tombs on the south side of the monument, the 'Eastern' and 'Western' tombs (O'Sullivan 2011, 2). The cairn is kerbed with decorated slabs that extend across the front of the east tomb and a winged façade opens from the western tomb and merges into the kerb (*ibid.*, 47). Differing stone types were utilised at various points that are considered structurally significant, and megalithic artwork occurs internally (O'Sullivan 2004, 47). Excavations were carried out between 1990 and 1995 and again in 2010 (O'Sullivan 1993, 1995, 2003, 2010). Both tombs have an astronomical alignment; the east tomb is aligned on the rising sun at mid-winter solstice, with the west tomb aligned on the sunset on the same day. The tombs contained cremated human bone, Late Neolithic to Early Bronze Age pottery sherds, antler and bone pins, pendants, beads, flint scrapers, struck flint, bone spacers and decorated bone artefacts (O'Sullivan 2011, 2).

County: Meath **Td:** Fourknocks **Site:** Fourknocks 1 **RMP:**ME033028001-

Fourknocks 1 is the largest in a small cluster of three passage tombs situated on the highest point of a hill. The cairn is 19m in diameter and contains a cruciform passage tomb orientated to the north-northeast. Fourknocks 1 was excavated in 1950 by Hartnett over a nine-week period. Prior to excavation the monument had been damaged by ploughing, the construction of a stone wall on the south side of the monument, and exploration by treasure hunters (Hartnett 1957, 197-200). Hartnett found that the primary usage had not been disturbed. Many architectural elements of Fourknocks are unusual. A funnel-like entrance unsupported by lintels

leads to the largest chamber of any Irish passage tomb (Herity 2015, 153-154). The chamber contains evidence of a large central posthole and thus it has been suggested that Fourknocks may have originally been an open-air site. Seventeen decorated stones were incorporated into the internal structure. Cremated remains of at least 24 individuals were discovered in the three recesses mixed with typical passage tomb artefacts including stone balls, antler and bone pins, lithics and shells (Hartnett 1957). The cremated and unburnt bone of 28 individuals were recovered from the passage. Five stone pendants and three stone beads were found in the right recess, one bead, and one hammer pendant from the west recess and three from the east recess (Herity 1974, 254). In the Middle Bronze Age, the cairn was enlarged to allow for five stone-lined cists containing inhumations (Hartnett 1957, 202). In the Middle to Late Bronze Age, further burials were inserted into the top of the mound (Herity 1974, 253-4, Shee-Twohig 1981, 220-2).

County: Meath **Td:** Gormanston **Site:** Knockingen/Knocknagen

RMP: ME028-021----

Only a small portion of this monument remains at the edge of a sea cliff. The site was marked on the 1837 edition of OS maps as a complete tumulus. However, prior to excavation in 1840 it had sustained significant damage from sea erosion (Herity 1974, 252). It was excavated by antiquarian G.A. Hamilton while holidaying at the Gormanstown estate, in order to discern whether the monument was prehistoric (Hamilton 1846, 251). Hamilton discovered the mound was constructed of water rolled stones with an internal kerb beneath. Cremated remains were discovered within this kerb, possibly against the walls of the internal structure. A sandstone basin with evidence of heat exposure was discovered, surrounded by cremated bone, charcoal, and conical shaped stone beads (D'Alton 1844, 130). The location of the bead assemblage is currently unknown, but the description would suggest that they were pestle pendants. The morphology of the monument and the inclusion of the basin suggests that Knockingen is a Type 3

passage tomb but it may also have been adapted from a Type 2 monument. Following excavation, the material from the monument was utilised in the construction of the nearby railway (D'Alton 1844, 131, Herity 1974, 252).

County: Meath **Td:** Knowth **Site:** Knowth 1 **RMP:**ME019030001-

Knowth and its satellites are the largest cluster of passage tombs at the Bend of Boyne (Eogan 1986, 14). The flat-topped cairn is 95m in diameter and contains two back-to-back internal tombs. The west tomb is a passage 34.2m in length terminating in a square chamber containing a stone basin. The east tomb is 40m in length ending in a cruciform chamber with a corbelled roof. Eogan began intensive investigations at the site in 1962 to examine whether smaller satellite tombs existed around the main mound (Eogan 1986, 21). At the time of excavation there was a large depression at the centre of the mound due to quarrying for building materials, and a modern field boundary ran across the mound (*ibid.*, 30). Evidence of reuse in the Late Iron Age and Early Medieval period included ditches that decimated the outer 4-5m of each passage, and evidence for occupation at the entrance area and within the mound (*ibid.*, 35).

Cremated human remains were recovered from the recesses in the eastern tomb in association with three pestle pendants and nine bone and antler pins. The northern recess contained a decorated stone basin that had been overturned (Eogan 1986, 40). The right recess contained an additional decorated basin and a decorated flint macehead in addition to stone beads, pendants and antler pins (Eogan 1986, 43). Megalithic art occurs both externally and internally at Knowth. It has been suggested that the elaborate quality of the art on the external kerbstones may indicate procession around the monument (Eogan 1986, Moore 1987, Hensey 2015). Prendergast and Ray (2015) have found that, contrary to early suggestions, the western and eastern tombs are not aligned to sunrise and sunset at the period of the vernal and autumnal equinoxes as previously thought.

County: Meath**Td:** Newgrange**Site:** Newgrange**RMP:** ME019-045----

Newgrange is the principal monument in the Bend of the Boyne complex and the largest passage tomb in Ireland. The cairn is 85m in diameter and would have originally appeared a drum-shape defined by a megalithic kerb (O'Kelly 1982, 15). The internal structure is cruciform in plan, 24m long and orientated to the southeast (*ibid.*, 22). This orientation has an alignment with the midwinter solstice on the 21st of December, allowing the sun to penetrate the main chamber. The roof is corbelled and megalithic art is featured on 75 of the stones that have been uncovered to date (*ibid.*, 152). Basins were found in each recess, with two recovered in the northeast recess. The cairn was reused during the Bronze Age and the annals record looting activities carried out by the Vikings in the 9th century (Lucas 1971/72). Newgrange was rediscovered in 1699 by men removing construction material from the cairn and has been the subject of investigation and excavation for many years, including an intensive campaign over 10 years by O' Kelly (O'Kelly 1982, 24). Finds from the tomb included unburnt and cremated human remains, pottery sherds, lithics, marbles, antler and bone pins, and lumps of granite. A stone pendant was recovered from the right recess and a further two ceramic pendants were recovered from near the basin in the left recess and in the passage (*ibid.*, 192-196). Two serpentine beads were recovered from a Neolithic hut site to the north.