

Hot Property: the Morphology and Archaeology of the Irish *Fulachta Fiadh*

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Introduction

Fulachta fiadh are the most prolific Bronze Age monument type present in the Irish landscape, yet they are also one of the most enigmatic. As a monument type, *fulachta fiadh* are generally located in wet/marshy areas and are usually identified by the presence of “sod-covered mounds which are largely composed of heat-cracked stones and charcoal-enriched soil. The mounds often feature a depression which, on excavation, is found to contain the remains of a hearth and trough” (O’Sullivan and Sheehan 1996, 117). They can occasionally occur in groups of two to six (Waddell 1998, 174). The term *fulacht fiadh* is derived from early Irish literature and is usually interpreted as an ancient cooking place. The presence of literary sources, some of which date from as early as the 9th century AD (Ó Drisceoil 1990), which offer feasible interpretations as to the function of *fulacht fiadh*, has resulted in a lack of research into this monument type. However, as a by-product of the recent building boom, a large number of *fulachta fiadh* have now been excavated. This new investment of archaeological resources into this monument type has resulted not only in an increase in our knowledge of *fulachta fiadh* but has questioned the basic interpretation as to both their time-frame and function. While the majority of academic references continue to attribute the main purpose of this monument to cooking, it is agreed that they may also have been utilised for a variety of other functions such as bathing, saunas and textile production.

The Morphology of *Fulachta Fiadh*

The basic components of this monument type are (A) a mound of heat-cracked stones, (B) a hearth and (C) a trough; a retaining kerb may also be present. The essential function of the majority of *fulachta fiadh*, whatever the intended purpose, would appear to have been to heat water. As a consequence of this, *fulachta fiadh* must typically either be located in naturally wet ground or by a water source such as a stream, spring or river, allowing the trough to naturally infill with water. The water in the

trough would then have been brought to the boil by means of adding hot stones. These stones would have been fired in a hearth and upon heating placed in the water-filled trough. “Debris from stones, heated and shattered during the process of boiling water in the trough was discarded nearby, gradually accumulating to form the mound.” (O’Sullivan and Sheehan 1996, 117)

Fulachta fiadh may also be located on dry land sites, and in the absence of a water source these particular sites must be interpreted as having been used for the production of dry heat and used for such functions as roasting or steaming. In such instances, where the troughs would have been used for roasting, a layer of stones would have been placed in the base of the trough upon which food would be laid. This then would have been covered with an additional layer of stones causing the enclosed food to roast quite quickly. It is in this manner that cultures such as the New Zealand Maori cook their food, occasionally speeding up the cooking time through the introduction of steam. This is achieved by placing a stick through the upper stone layer. Upon removal of the stick, water is poured down the surviving hollow which, on contact with the hot stones, turns into steam.

The Trough

The trough is the central and most essential component defining the nature of *fulachta fiadh*, with Brindley and Lanting (1990, 56) insisting that “the term *fulacht fiadh* should be used only with reference to sites with troughs and mounds”. The troughs associated with *fulacht fiadh* sites vary greatly in shape and type, but their dimensions are generally uniform, having a maximum length of 2.5m by 1m in depth. However, analysis of various excavation results would suggest that the average trough would measure 1.5m in length by 1.3m in width by 0.6m in depth.

Trough Shape

The basic trough is circular, oval or rectangular in plan and is relatively shallow. Ó Néill (2000, 19) has stated that “generally (although not exclusively) earlier sites have circular unlined troughs” (Plate I). However, work on the Gas Pipeline to the West (Grogan *et al.* 2007) resulted in the excavation of a large number of *fulachta fiadh* sites, producing evidence which contradicts this statement. In particular, the site at Leahys, Co. Limerick, had three episodes of use (Dennehy 2003a). The first phase of use produced a Middle Bronze Age date of 1520-1390 BC and related to the construction of a rectangular trough and

associated hearth site. This rectangular trough was subsequently replaced in the second and third phases of use by circular troughs. Similarly a *fulacht fiadh* excavated at Groin, Co. Kerry, also had circular troughs truncating earlier rectangular troughs (Fig. 1, Plate I). Therefore it would appear that an interpretation as to the age of a site cannot be based on the shape of the trough (Dennehy 2001a).



Plate I: View from north-east of troughs I and II, and roasting pit at Groin, Co. Kerry (01E0095).

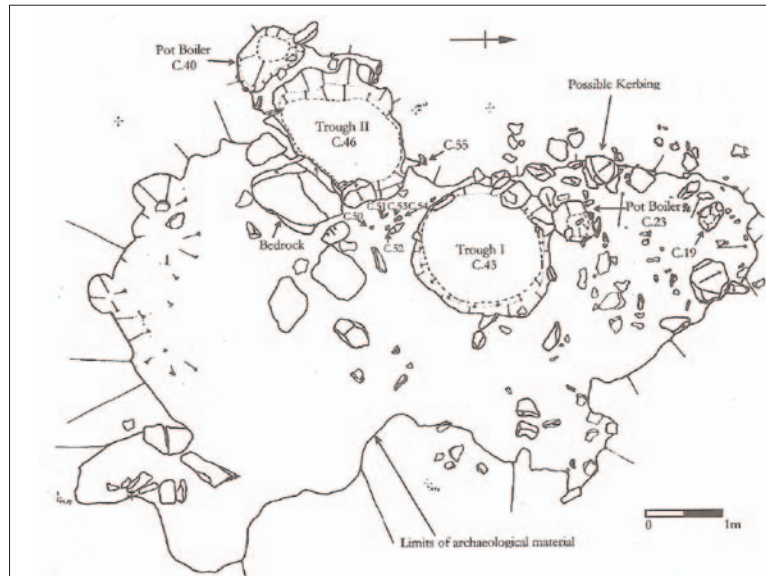


Fig. 1: Post-excitation plan of *fulacht fiadh* at Groin, Co. Kerry (01E0095).



Plate II: Post-excitation view of stone-lined trough, Cahiracon, Co. Clare (02E0952).



Plate III: Brushwood and wood lining at base of trough, Groin, Co. Kerry (01E0095).



Plate IV: Wood-lined trough at Cahiracon, Co. Clare (02E0952).

Trough Construction

The majority of troughs are cut into the underlying subsoil, with exceptions occurring only in peat regions where the depth of the peat exceeds the required depth of the trough. The trough may be unlined or it may be lined by one or by a combination of the following materials: clay, stone slabs (Plate II), leather, wicker, brushwood (Plate III), moss, wooden planks (Plate IV), hollow tree trunks or dug-out canoes.

In the majority of cases where the troughs are lined, a great deal of pre-planned effort has gone into their construction. In the case of wood-lined troughs, planks may have tenons for better support and fitting; others have corner posts to support the frame (e.g. Dooradoyle, Co. Limerick, McConway 1998; Cahiracon, Co. Clare, Dennehy and Sutton 2003, Plate IV). In an example of a wicker-lined trough at Derryville 253, Killoran, Co. Tipperary, corner rods were inserted into the surrounding soil for extra stability. Moss was used to plug any holes and to ensure the trough was filled with filtered ground water rather than bog water (Ó Néill 1998a).

The complex nature of the trough construction illustrates that a great deal of communal time and effort went into the construction of such sites, not merely through the physical labour and mathematical calculations to ensure a perfect fit, but also through the time spent in sourcing the required raw materials. Such care implies that these *fulachta fiadh*, at least, played an important role in the society of the time. A number of sites also exhibit evidence not only for the reuse of troughs but also for their relining, once again indicating the continued use of such sites over extended periods of time (Cahiracon 3/37/4, Co. Clare; Dennehy and McLeod 2003).

Hearths

The hearth by the very nature of these sites formed an integral part to the function of the *fulacht fiadh*, being necessary for the required heating of the stones. Despite this, very few of the excavated *fulachta fiadh* have produced evidence for a hearth. Initially many authors attributed this lack of hearth sites to the restricted nature of the excavations. However, in the past few years great numbers of these sites are being excavated as part of large-scale developments whereby sites are exposed in their entirety and yet hearth sites are still elusive. Given the nature of the monument, it seems logical that the hearth would have been situated in close proximity to the trough, and ideally within the mounds where the necessary supply of stones were heaped. It is possible that these hearths

are being found without the excavator realising it, as the temperatures being reached may not have been sufficiently high enough to scorch the underlying ground surface. This would prove to be particularly true if the hearths were located within the mounds rather than being placed directly on the ground surface. It is therefore logical that if the hearth was located within the mound, its location and size would have altered and changed with each use of the site. Therefore, hearths within *fulachta fiadh* would be identified by deposits of dense charcoal and reddened stones rather than areas of burnt/oxidised clay which generally signifies the location of a hearth on domestic sites, e.g. at Cloughjordan, Co. Tipperary (Dennehy 2006).

At the few sites where definitive hearths have been identified they occur in two basic forms, either as an informal hearth placed directly on to the ground surface and identified by the presence of heat-altered clay, or placed in a defined area delineated by a setting of stones. An example of a formal hearth was identified at Kilcor South IV, Co. Cork, and was defined by a semi-circular stone revetment enclosing an area of oxidised clay 1.3m in diameter and 0.1m deep (Hurley 1987, 47). A defined hearth was also identified at Killeens Site II, Co. Cork, and described as “a very rough setting of stones and slabs on edge forming an arc 1.5m across the horns and 1m front to back, while the floor was paved with roughly-laid slabs” (O’Kelly 1954, 133).

The Mound

Generally the most obvious indicator of a *fulacht fiadh* in the field is the mound, which may be U-shaped, circular/oval, irregular or D-shaped in plan (Waddell 1998) (Plate V). The mounds are not generally continuous around the trough as one side was left open for the purpose of access. In some instances the mound has survived up to a height of 2m, though the average recorded height of a mound is less than 1m (Power 1990, 14).

In the majority of cases where a *fulacht fiadh* has been excavated under rescue conditions, levelling of the mound has occurred in the past leaving no above-ground register. This is generally the result of land reclamation activities. In these situations the remains of the mound may survive to a height varying from as little as 0.05m to 0.2m, e.g. at Flemyby, Co. Kerry (Dennehy 2000). The length and width of the mound again varies greatly from site to site with an average length of 10m and maximum of 30m. Evidence from excavations has now indicated that a number of mounds were deliberately levelled on the abandonment of the sites in order to back-fill the trough (Hurley 1987, 47).



Plate V: Section through *fulacht fiadh* mound, Groin, Co. Kerry (01E0066).

Mound Composition

The mound is generally composed of heat-shattered stones contained in a charcoal-enriched matrix (Figure 2, Plate V). As the mound is a by-product of the use of the trough, it is natural to suppose that the size of the mound will be a reflection of the number of times the site was used. In a relatively large proportion of these sites, the mounds do not exhibit any formal stratigraphy; this may be as a result of water sorting, but it is more probable that it is a result both of the method of deposition and the continued random reuse of the mound material over prolonged periods of time. However, a means to identify the different phases of the site can occasionally be obtained through the grouping of similarly composed deposits or, more clearly and accurately, through the identification of episodes of topsoil/peat regrowth within the deposits of the mound itself. This is particularly true of sites located in peat environments which have been used on a distinct periodic basis allowing peat reclamation to take place between each phase of use, e.g. Cahiracon, Co. Clare (Dennehy and Sutton 2003; Dennehy and McLeod 2003).

The majority of excavation reports for *fulachta fiadh* record the mounds as being composed predominantly of sandstones irrespective of the local geology, suggesting a deliberate selection process for the required raw material. A variation of this theme is now occurring with the use of limestone increasingly recorded. Ó Néill noted that the

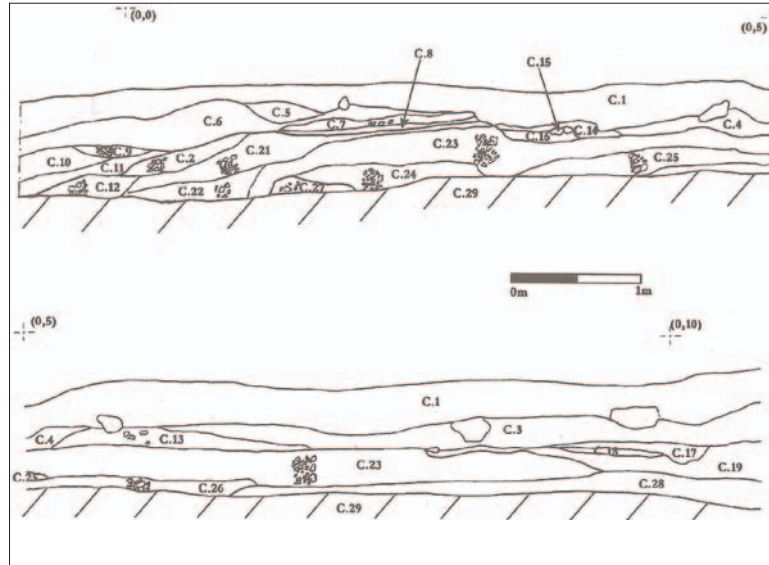


Fig. 2: Scaled section drawing of *fulacht fiadh* at Groin, Co. Kerry (01E0066)

mounds of two sites excavated at Derryville Bog, Co. Tipperary, were composed of between 80% sandstone : 20% limestone, and 90% sandstone : 10% limestone (DER 265 and DER 253 respectively; 1998a and 1998b). The mound material of a *fulacht fiadh* excavated in Ballycahane Upper, Co. Limerick, as part of the Munster Gas Pipeline was “uncharacteristically composed chiefly of burnt limestone, rather than of sandstone” (Gowen 1988). While in Mullingar, Co. Westmeath, potential *fulacht fiadh* material was composed entirely of burnt limestone (Reed 2000). Similar results were identified on a large number of sites excavated during the recent Gas Pipeline to the West Project in 2002 and at Cloughjordan, Co. Tipperary (Grogan *et al.* 2007; Dennehy 2006). It is possible that this variation in the composition of the mound is more significant than previously thought as it may be an indication or reflection of the intended function of these particular *fulachta fiadh* (this will be discussed in more detail below).

Kerbs

A number of excavated sites have provided evidence for the construction of kerbs around the limits of the mound material. Such kerbs are interpreted as retaining features minimising the slippage of

mound material, thereby implying (a) the continued use of such sites over unspecified periods of time and (b) that a conscientious approach to the management of these sites by the user community was undertaken. It is unusual that such attempts at site management would have been made given that one would assume land was not in short supply. These retaining kerbs are generally constructed of large boulders, with examples identified at Attyflinn, Co Limerick, and Coarhamore, Valentia, Co. Kerry (Gahan 1998, 111; Sheehan 1990, 31). Limited evidence for a retaining kerb was also uncovered at the much-truncated site at Groin, Co. Kerry (Dennehy 2001a) (Figure 1).

Mound Size as a Reflection of Use

It has been suggested that the number of times a site was used is reflected in the size of the associated mound. It has been estimated that “a single use of such a site would require the firing of a volume of stone equivalent to approximately half that of its trough” (Fahy 1960, cited in Sheehan 1990, 35). On the basis of this theory, Sheehan estimated that to accumulate a mound the size of that at the site of Coarhamore, Co. Kerry (10m north-east/south-west by 7m by 1.35m in height), the *fulacht fiadh* would have had to be used 500 times. How realistic such an estimate can be is unsure as one must remember that the users would not necessarily have gathered fresh stones for each boiling, but would have reused those already present in the mound from previous episodes of use. In addition, it is plausible that more stones would have been heated than actually required. A study by Denvir proved that initially only 12 stones were required to bring a trough of water to the boil (www.angelfire.com/fl/burntmounds.html). One stone subsequently added every 10 minutes could maintain a constant temperature. It is therefore highly unlikely that any comparative analysis of trough and mound size will ever give an accurate reflection of the number of uses for a particular monument.

Platforms and Trackways

A limited number of excavations have recorded the presence of platforms beside the *fulacht fiadh*. The presence of a platform is generally identified when the site is located in peat or otherwise wet locations. In these instances it would have been a necessity to construct some form of stable platform to create a secure footing in order to successfully access the site and work the trough. Examples of platforms were located at Coarhamore, Valentia, Co. Kerry, and at DER 265 and DER 253, Derryville Bog, Co. Tipperary (Sheehan 1990; Ó Néill 1998a

and 1998b). In the case of the Coaharmore example, the platform was constructed of stone slabs, while the example at DER 265 “was made from a loose arrangement of timbers... The majority of the wood sampled from the platform was identified as crab apple” (Ó Néill 1998b). The DER 253 example measured 5m by 2.3m and consisted of “irregular boulders and cobbles of sandstone and, occasionally, limestone”.

A linear arrangement of stones was identified in Coolgarriff, Aghadoe, Co. Kerry; on this occasion the flat-topped boulders related to a trackway providing secure access through the peat to and from the *fulacht fiadh* (Kiely 2003, Dennehy 2001b) (Plate VI). A similarly formed trackway was excavated at Rincullia, Co. Limerick, whereby a trackway was constructed in wetland to provide secure footing between the low-lying mound and the associated complex of roasting pits which were situated upslope (Dennehy 2003b).



Plate VI: Trackway at Coolgarriff, Co. Kerry (01E0083).

Roasting Pits

Several excavations have identified the presence of pits (roasting pits) containing burnt mound material in the vicinity of larger troughs. Ó Drisceoil (1987, 51) has suggested that these pits and other small, unlined troughs had a temporary nature in instances where they occur in the vicinity of larger and more sophisticated troughs. He suggests that

the pits may have been used on a temporary basis until such time as the construction of the trough proper had been completed, or they may have been used to test the suitability of the underlying ground for the construction of a *fulacht fiadh*.

As more and more roasting pits are being excavated, their number, size and location in proximity to the main trough suggests they may have formed a distinct function, possibly to heat pots or roast food in tandem with the use of the *fulacht fiadh* (Plate I). These pits are generally smaller and shallower than troughs and would have reached optimum heat in a much shorter time. In the case of *fulachta fiadh* sites used for cooking, this may have been a way to produce the familiar “meat and two veg”. In the case of *fulachta fiadh* used for alternate purposes such as textile production, these features may have been used to produce the dyes while the fleece was prepared in the trough(s).

The Dating of *Fulachta Fiadh*

Fulachta fiadh that are located in wet environments can provide optimum dating material due to the waterlogged nature of the trough which, when wood-lined, not only allows species analysis but also allows for a calculation of the age of the tree itself (Brindley and Lanting 1990, 55). In light of this, many *fulachta fiadh* are extremely suitable for radiocarbon dating, with the wooden trough “providing integral samples from directly comparable contexts” (Baillie 1990, 165; Brindley and Lanting 1990, 55). A large number of *fulachta fiadh* have been dated, with recent excavations producing an extremely broad time-frame for this site type. For example, a Neolithic date for the use of *fulachta fiadh* has been confirmed through excavations at the site of Newdown and Heathstown in Co. Westmeath (Egan 2005). A *fulacht fiadh* in Derryville Bog, Co. Tipperary, produced an Early Bronze Age date of 2138-1935 cal. BC. The majority of *fulachta fiadh* do, however, date to the Middle Bronze Age, with analysis indicating that their main period of use concentrates in the Middle to Late Bronze Age from 1800 BC, with a decline occurring around the 12th century BC (Baillie 1990, 167). This indicates that *fulachta fiadh*, or a variant of this site type, were present in the Late Neolithic/Early Bronze Age, but reached a height of construction and use in the Middle to Late Bronze Age.

Evidence is also present both from radiocarbon dates and literary sources that the use of *fulachta fiadh*, though at a much-decreased rate, continued well into the early medieval period. Excavations at Coaharmore, Co. Kerry, retrieved a spindle-whorl from a secure context;

the spindle whorl is closely paralleled in assemblages from the ecclesiastical sites of Church Island and Reask in Co. Kerry, indicating an early medieval date for the use of this site (Sheehan 1990, 35). A radiocarbon date of 8th-10th century AD from the *fulacht fiadh* at Ballyman, Co. Dublin, also indicates the continued use of such sites into the early medieval period (O'Brien 2005, 297). A 13th-century example of a *fulacht fiadh* was excavated in Peter Street, Waterford (Walsh 1990), with a 15th-17th-century date range produced for the site of Ballymakeamore, Co. Limerick (Grogan *et al.* 2007, 101).

Literary sources have been used in the past not only to date *fulachta fiadh* but also to interpret their function. One of the main sources usually cited is Geoffrey Keating's *Foras Feasa ar Éirinn*, written in the 17th century, in which Keating recounts how the Fian used these sites. Although this source does not substantiate the continued use of *fulachta fiadh* as present in the Bronze Age into the 17th century, it does establish that the knowledge of the use of such sites remained in the consciousness of the society of the time. It also supports the above dating evidence, which illustrates that versions of this site type were still in use in Ireland in the late medieval period (Ó Drisceoil 1990, 161).

Functions

One of the most debatable issues with regards to *fulachta fiadh* centres on the intended function. An analysis of literary sources such as the above-mentioned *Foras Feasa ar Éirinn*, in addition to early law tracts and saints' lives, implies that they were utilised by hunter-type/transitory groups of people or individuals for the purpose of cooking and bathing (Ó Drisceoil 1990). O'Kelly, at the site of Ballyvourney, Co. Cork, undertook experiments based on these sources. During the course of these experiments, it was substantiated that it was perfectly feasible to use *fulachta fiadh* for the purpose of cooking. As a result of this, the archaeological profession have tended to accept cooking as the main function of the *fulachta fiadh*, despite the fact that very few sites have produced faunal remains to substantiate cooking as their primary function.

This lack of evidence is usually attributed to soil conditions, which are not conducive to the preservation of animal bones, though others question whether the lack of faunal remains implies that "the cooking of joints of meat was subject to various sorts of ritual controls and food remains carefully disposed of" (Waddell 1998, 177). Conversely, it is possible that such sites which do not produce definitive evidence for

cooking may have been utilised for bathing, as saunas, for the purpose of washing and dyeing cloth and for textile production. These are functions which do not necessarily leave a visible imprint on the archaeological record.

Cooking and Bathing

It is possible that the *fulacht fiadh* which were used for cooking may also have served the dual function of bathing. An account from the romance of Mis, and Dubh Ruis details the story of Dubh Ruis, who on capturing Mis, who had run off wild into the mountains, took her to a *fulacht fiadh* in which they cooked a deer and feasted upon it (cited in Ó Drisceoil 1990). After they had completed the meal, he sat Mis in the trough and bathed her in the trough water which was rich in melted deer fat. This tandem use of the trough water for cooking and bathing as a regular use for *fulachta fiadh* is quite plausible as the boiling process would have caused the separation of fat from the deer meat. This melted deer fat and the ashes derived from the heating of stones combine to make a natural detergent. In light of this it is easy to see how *fulachta fiadh* used for cooking would also be subsequently used for bathing when a cleansing soap occurs naturally in the trough water.

Not all *fulachta fiadh* sites, particularly those which incorporate the use of limestone, would be conducive to this function. Occasionally the presence and use of limestone is just a small percentage of the overall mound composition and may be seen as incidental or unimportant to the overall function of the site. In other cases, the mounds are dominated by limestone and as such would indicate the unsuitability of the use of these sites for either cooking or bathing. This is in the first instance due to the fact that limestone does not retain heat as easily as other readily available rock sources such as sandstone. Secondly, the constant reheating of limestone causes a chemical reaction, turning it into slaked lime, making it highly unsuitable for either cooking or bathing (Barber 1990, 100). Consequently, on sites where the mound is predominantly composed of limestone, cooking, though a convenient interpretation, may not be a feasible one.

Textile Production and Dyeing

As part of a BA dissertation for Queen's University Belfast, Anne-Marie Denvir conducted various experiments on a *fulacht fiadh* to determine the feasibility of the use of this site type for a multiple of purposes (Denvir). In this dissertation she details several experiments for

washing raw wool in addition to dyeing and fulling textiles.

Denvir identified that the ingredients required for textile dyeing were (a) a vat of water, (b) a detergent to clean the fleece, (c) a dye and (d) a mordant to ensure the dye would set and remain fast to the textile chosen. As almost any plant when boiled will make a dyestuff, there was no scarcity of colorants in Ireland (www.itdg.org). Cherry, ivy, alder, oak, lichen, berries and sloes may be utilised to produce dyes, and all were widely available at the peak of *fulachta fiadh* usage. As seen above, a detergent was readily made from wood ash and animal fat, while a bleaching agent was widely available in the form of stale urine. These same ingredients could also have been used as a mordant to secure the dye, but other sources such as oak galls (a tree's response to insect parasites) were also available. Denvir's textile experiments were extremely successful, proving also that the material required to dye textiles occurred naturally in the surrounding environments.

Oak galls have been identified within mound deposits of the *fulacht fiadh* at Cahiracon, Co. Clare, in quantities which indicate the site may have been used for textile production, but the stratigraphic association is questionable (Dennehy and O'Donnell forthcoming). On this site the trough, which was carefully wood-lined, was too shallow to have been used for cooking, being just 0.25m in depth. It was self-filling, due to an underlying spring which provided a continuous supply of fresh, clean water, filtered by a sand deposit deliberately placed below the trough lining. Pollen and charcoal analysis conducted on the site have also identified that natural dyes in the form of ivy, alder and oak were readily available in the surrounding environment. Although the association of the oak galls is questionable, their presence on site confirms our need to seek alternate interpretations for the use of these sites.

Saunas

The recent find of a large hut site encircling a trough at the site of Cloughjordan, Co. Tipperary, and presumably functioning as a sweathouse has led credence to the theory that *fulacht fiadh* may have been used as saunas (Dennehy 2006) (Plate VII). Saunas and sweathouses have long played a dominant role in Irish and European society, but evidence for the use of *fulachta fiadh* for such activity, while postulated, remained unproved. The functions of saunas differ vastly within and between various social groups with uses ranging from health and relaxation, to the bonding of men before hunting expeditions, to the curing of meat and drying of foodstuffs, or use for medicinal reasons and

the laborious process of childbirth. Therefore it can be interpreted that that saunas served both a ritual and domestic function.



Plate VII: View of the house underlying mound material at Cloughjordan, Co. Tipperary (06E0257).

The sweathouse at Cloughjordan was sub-circular in plan and had an average internal diameter of 5.5m. It had two entrances which accommodated an organised use of the sauna. The entrance located in the south-west was positioned between the trough and external hearth in such a way that it allowed the heated stones to be brought to the trough in a quick and safe manner. The second entrance in the south-east is presumed to have accommodated safe access and egress for individuals using the sauna by avoiding any requirement to approach the trough. The off-centre location of the trough also accommodated a large seating area within the sweathouse itself. The sweathouse, though large, had no internal roof supports, indicating that if a roof was present it was temporary in nature and possibly constructed from woven mats and hides as is the practice with native populations in North and South America. This absence of a permanent roof structure further supports the interpretation that the structure was never intended for day-to-day use.

Such a definitive proof for the use of *fulachta fiadh* as saunas as

identified at Cloughjordan is rare, but indications of sites with similar functions have been found on other sites around the country such as at Newtown, Co. Kildare (Dennehy 2005). At Newtown the trough, which was sub-oval in plan (2m x 1.5m), was excavated to two distinct levels such that the west half, excavated below the water table to a depth of 1.4m, functioned as a well (Plate VIII). The east half, excavated to a depth of 0.56m, appeared to have functioned as a “platform” area within which hot stones were placed and water cupped from the well may have been poured over them to create steam.



Plate VIII: Trough/well at Newtown, Co. Kildare (05E0545).

If this site was indeed used as a sauna, the trough functioned both as a source of water and a container for the hot stones. Although no evidence for the presence of a superstructure was found during the course of the excavation (e.g. stake-holes), any such superstructure may have been quite temporary in nature and held in place by alternative materials such as stones or logs (Dennehy 2005). Unusually, although the morphology of the Newtown trough would appear to indicate it functioned primarily as a sauna, animal bones of a young sheep and berry seeds were also recovered (McQuade and Johnson cited in Dennehy 2005). Therefore,

this site would appear to be multi-functional, used both as a sauna and as a cooking site.

Ritual

The widespread presence of *fulachta fiadh* in the landscape does suggest that whatever their function they were an integral component within the culture of the society at the time. The lack of associated finds would appear to indicate that their basic function was indeed predominantly domestic. However, the retrieval of prestige objects from a limited number of *fulachta fiadh* suggests that certain sites served ritual functions. Examples of such sites are, Killeens, Co. Cork, where a fragment of a gold ring was retrieved; Dooros, Co. Mayo, where a gold dress-fastener was retrieved; and at Fahee South, Co. Clare, where amber bead fragments and flint scrapers, in addition to two barbed and tanged arrow-heads, were retrieved (Cherry 1990, 49-54).

The retrieval of yew pipes from the trough at Charlesland, Co. Wicklow, also indicates that certain *fulachta fiadh* had more formal purposes (Molloy 2006a). These pipes represent the oldest musical instrument in Europe, and their association with a *fulacht fiadh* is spectacular, reinforcing the uniqueness of this monument type and the existing potential for new interpretations as to their function.

***Fulachta Fiadh* in Association with Settlements and Other Monuments**

The majority of *fulachta fiadh* identified both through excavation and through field survey are found in isolation from other archaeological sites. This has led to a debate as to whether they are a reflection of a transient society or functioned in conjunction with more permanent settlements. To date only a handful of sites have produced evidence for associated structures, the most noted of these being Ballyvourney and Drombeg in Co. Cork, where circular huts in proximity to the *fulachta fiadh* are attributed to being meat stores (O'Kelly 1989, 223-25).

Excavations in which *fulachta fiadh* have been found in association with contemporary trackways have, as mentioned above, been identified in Coolgarriff, Aghadoe, Co. Kerry, and Rincullia, Co. Limerick (Kiely 2003; Dennehy 2001b; Dennehy 2003b). Trackways are generally identified in bogs and are a reflection of safe access to the sites over arduous land conditions. By this means they also reflect the importance of such sites to the user community, justifying the intensity of labour invested into the construction of the trackway

A *fulacht fiadh* identified in Ballycahane Upper, Co. Limerick, lay to the south of an enclosed cremation cemetery. Cremation cemeteries were also identified at a short distance from a burnt spread at Kiltienan South, Co. Limerick, and in association with two *fulachta fiadh* at Ballycaseymore, Co. Clare (Dennehy 2003c; Murphy 2006). It has been suggested that the *fulacht fiadh* trough may have been used for washing bones as part of a ceremony associated with human cremation (Ó Néill 2000, 19). However, no direct Irish evidence to substantiate this has been identified other than their mutual proximity to each other. Irrespective of this, the proximity of *fulachta fiadh* to cremation cemeteries would appear to indicate that the landscape in which these particular sites were located was a ritual one and therefore the sites themselves served a ritual function. Evidence for the association of cremation burials with *fulacht*-type sites is also available in Norway. Here excavations have uncovered “cooking-pits” such as the aforementioned roasting pits in association with cremation burials which contain “nothing but fire-cracked stones, but there had never been a fire in this pit” (Oestigarrd 2000, 47).

On a few occasions *fulachta fiadh* have been identified as a component of large-scale archaeological complexes, and their direct association with habitation sites cannot therefore be disputed. It is possible that in these occasions the *fulachta fiadh* served particular functions within the community, be it for cooking, bathing or industrial purposes, though even at this their use was limited and never on a “day-to-day” basis. *Fulachta fiadh* have been found in association with such archaeological complexes at Manor West and Cloghers, Co. Kerry, Kilgobbin, Co. Dublin, and Charlesland, Co. Wicklow (Dunne 2002; Kiely 2002, Molloy 2006b; Hagen 2006). It is interesting to note that these complexes dated from the Neolithic to the Bronze Age, with these sites also having extensive evidence for Beaker occupation.

Conclusion

Fulachta fiadh are one of the most defining sites of the Irish Bronze Age. Occurring in their thousands across the our landscape, they were “hot property”, something the communities of the time felt a need to own, constructing them over and over again with great diligence and care. For some they were merely a means to cook food or to prepare fleeces and clothing. For others they were integral to the communities’ sense of identity, functioning as the focal point of gatherings and rituals which remain as yet elusive. The exact nature of the importance of these sites to the user communities will continue to escape us if we repeatedly

dismiss these sites as run-of-the-mill cooking points, for as Barber (1990, 101) has aptly stated, “boiling water has many uses”. Indeed this statement comes to the fore when one considers that water was not as integral to the function of *fulachta fiadh* as we may think given that some sites operated with troughs which could never physically retain water. Perhaps if we re-examine our sampling strategies on sites and also expand our anthropological analysis to other countries, we may gain more relevant and concrete interpretations for this site type.

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Note about Author

Emer Dennehy worked as a field archaeologist for ten years and is currently working for the Railway Procurement Agency. She previously published an article in the journal on the topic of children’s burials grounds in Kerry, which was the subject of her MA thesis. During the course of working as a field archaeologist, Emer excavated a large number of *fulacht fiadh*. The generic and well-known interpretation that these sites were used for cooking is not supported by the field evidence. As no two *fulachta fiadh* are the same, the evidence would suggest that each *fulacht fiadh* was excavated for an individual purpose and to individual style requirements. She has written this article both as a reference document and to introduce some ideas as to their alternative functions.

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