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The Mosfell Archaeological Project: 2002 Excavation

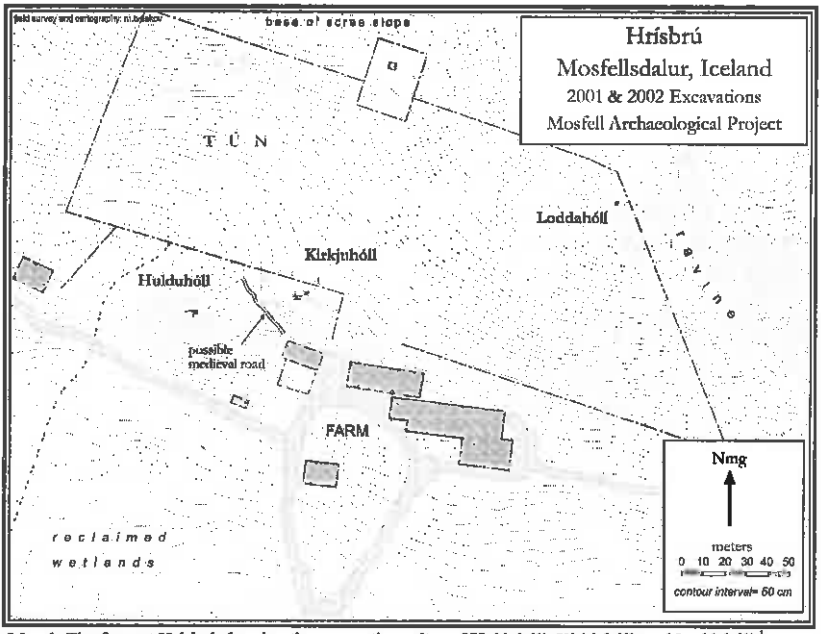
> *"When Christianity was adopted by law in Iceland (around 1000 A. D.) Grímr of Mosfell was baptized and built a church there. People say that Thórdís had Egill's bones moved to the church, and this is the evidence. When a church was built at Mosfell, the one that Grímr had built at Hrísbrú was demolished and a new graveyard was laid out. Under the altar some human bones were found, much bigger than ordinary human bones, and people are confident that these were Egill's because of stories told by old men."* Egil's Saga, chapter 86

> *"The story goes that in the autumn Illugi rode from his home at Gilsbakki with thirty men and arrived at Mosfell early in the morning. [The chieftain]Önundr and his sons escaped into the church, but Illugi caught two of Önundr's kinsmen, one called Björn and the other Thorgrímr. He had Björn killed and Thorgrímr's foot chopped off. Then he rode home, and there was no counter-stroke to this by Önundr."* Gunnlaug's Saga Serpent Tongue, chapter 13

Following the issuance of an excavation permit to Jesse Byock and Phillip Walker by the Fornleifavernd rikissins, an international team of researchers conducted archaeological work at the site of Hrísbrú, Mosfellsdalur in July and August of 2002. The goal of our research was to continue our 2001 excavation work at Hrísbrú during which we located an early church and cemetery as well as an adjacent burial mound containing cremation remains. Our 2002 excavations focused on three archaeological deposits on the Hrísbrú farm (see Map 1): Kirkjuhóll (Church Knoll), the small hillock just behind the modern farm's stable that we tested in 1995 when the Mosfell Archaeological Project began and again in the 2001 field season; the adjacent Hulduhóll (Elfin Hill), a hillock located about 60 meters west of Kirkjuhóll; and Loddahóll, a knoll at the far northeast corner of the *tún* (home field or hay meadow) immediately north of Kirkjuhóll.

In their present states Kirkjuhóll, Hulduhóll, and Loddahóll are all small, oval-shaped, grass-covered knolls situated behind the modern buildings of the existing dairy farm at Hrísbrú in Mosfellsdalur. The long axis of each of the knolls is oriented on the same general east-northeast line, and, given the bedrock exposed around the skirt of Hulduhóll and on the east side of Loddahóll, they may be the surface expression of a basaltic ridge that extrudes from the base of the scree slope of broken rock and gravel at the base of Mosfell mountain to the north. Of the three mounds, Hulduhóll is the largest and from a distance the most impressive.

The 2002 excavations document a Viking Age occupational history. The deposits, especially at Kirkjuhóll are complex, but ^{14}C dates, stratigraphic relationships, tephrachronology, and burial associations all support a general sequence spanning the pagan and early conversion eras of the Viking Age. Of note, some discoveries provide evidence for a range of ceremonial behaviors taking place at Hrísbrú especially during



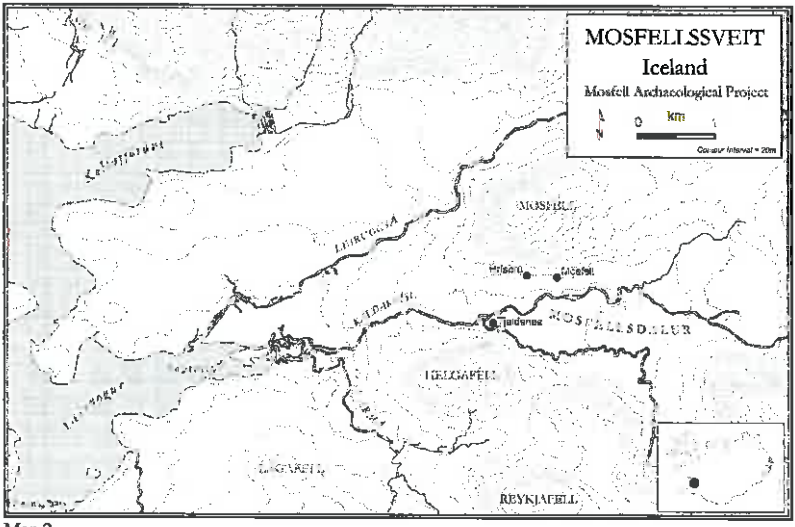
Map 1. The farm at Hrísbrú showing the excavations sites of Hulduhóll, Kirkjuhóll, and Loddahóll.[1]

the conversion period around the year 1000. Chemical and stratigraphic analysis of volcanic ash layers and radiocarbon dating undertaken as part of the 2002 work agree that the remains of the early turf building, the graveyard, and the stone foundation first unearthed at Kirkjuhóll in 2001 date from the 10th and 11th centuries. The oldest layers of habitation at Hrísbrú may go back to around the year 900, a possibility we will explore in future excavations.

In approaching our work in the Mosfell Valley (Mosfellsdalur), we view the region as a valley system (see Map 2). The surrounding highlands and the lowland coastal area are an interlocking system of natural and man-made pieces. Beginning in the ninth-century settlement or *landnám* period, this area or *sveit* developed into a functioning Viking Age, Icelandic community. This valley system encapsulates the major ecologies of Iceland: coastal, riverine, and highland. Our task is to unearth the prehistory and early history of the Mosfell region, providing an in-depth understanding of how this countryside evolved from its earliest origins.

Of importance for our archaeological research, evidence of early habitation in this valley system has not been denuded by the effects of erosion as it has at many other early habitation sites in Iceland. The Mosfell valley has served as a catchment for

[1] Maps were drawn by Mark Axel Tveskov



Map 2.

wind and water-born erosion deposits from other areas. The 2002 excavations together with the surveys, geological analysis, and test excavations of our previous field seasons reveal that the earliest inhabitants at the Hrísbrú site initially lived high up on the valley sides, close under Mosfell Mountain. These initial sites had to be abandoned within the first centuries because of erosion, including mud and rock slides initiated by the impacts of vegetation clearance and livestock grazing on the fragile sub arctic "moss-green" groundcover on the *fell* or mountain. In the 11th and 12th centuries the inhabitants moved many of their major buildings to safer sites out of the way of landslides, either to the present-day site of the Mosfell farm (approximately 600 meters to the east of Hrísbrú) or to near the placement of present-day farm buildings at Hrísbrú, that is further from the slopes but closer to the marshy valley floor. The abandoned earliest habitation layers were soon buried where they have lain until our day. Future excavations will determine if some initial habitation sites were moved already in the tenth century. Many types of scientific analysis are now coming into play. For example the long stratigraphic sequence we found below Hrísbrú is a potentially rich source of pollen and other paleoenvironmental data.

Mosfell is in many ways representative of early habitation in coastal valleys throughout Iceland. The valley was partly a self-contained social and economic unit, but it was also connected to the rest of Iceland through a network of horse paths, including a major route leading to the nearby meeting of the annual Althing at Thingvellir thirty kilometers to the east. Close to offshore fishing grounds, the economy was mixed terrestrial and marine. In 2001 we analyzed the carbon isotopes contained in one 10th century skeleton. We did this as part of the radiocarbon dating in order to estimate the marine reservoir effect. The results suggest that the diet of this individual was roughly 27% marine, either from the consumption of fish, sea mammal, shellfish, or other marine or estuarine resources.

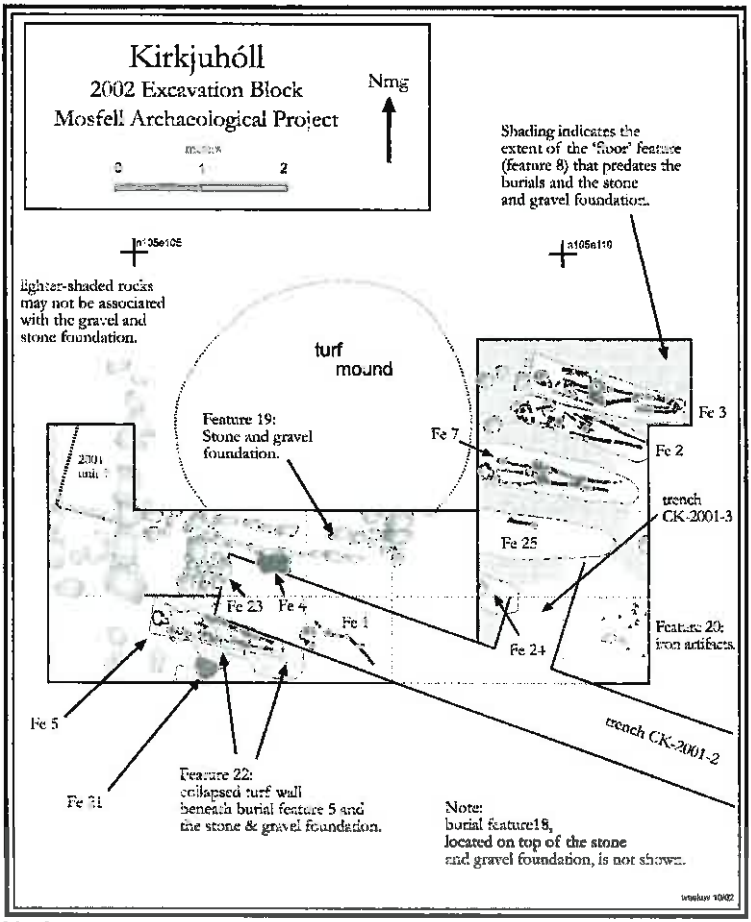
Trade and overseas travel also played a role in the lives of the inhabitants. With its coastal port at Leiruvogur, the region was in commercial and cultural contact with the larger Scandinavian and European worlds. The presence of the Leiruvogur port and the numerous saga

mentions of comings and goings there raise important questions as to the origins of the Mosfell population. Indeed, the origin of the early Icelanders in general is a much discussed issue. The Mosfell Archaeological Project may be among the first in Iceland to use isotopic analysis of human tooth enamel to determine the birthplace or early childhood habitation of excavated skeletal remains. Our isotopic analysis suggests that the three people buried at Mosfell who we have tested so far were all born in Iceland. The concentrations of strontium isotopes in the teeth of the Kirkjuhóll burials provides a basis for determining whether people were born on the Scandinavian mainland and immigrated to Iceland. Iceland has a unique volcanic lithology that differs markedly from the Scandinavian mainland and these isotopic values would have been transferred to the calcified tissues of the people living in these areas.

The 2002 work revealed more burials as well as further evidence of occupational activity, including the well-preserved stone foundation of what appears to have been the south wall of a small wooden (stave) church (see Map 3). The radiocarbon dates obtained are all consistent with the hypothesis that this structure is the conversion-age church described in *Egill's Saga*, the church to which Egill's remains were moved after his initial burial in a pagan mound at Tjaldaness (ca. AD 990). *Gunnlaug's Saga Serpent Tongue* also mentions a church at the site around the year AD 1020.

The work of the Mosfell Archaeological Project at the Hrísbrú sites is distinguished in several ways. The sites are unusually well preserved and largely undisturbed. Our archaeological work is providing significant evidence of cultural practices. Here the archaeology is aided by a wealth of surviving medieval writings, including the *Book of Settlements*, *Egill's Saga*, *Gunnlaug's Saga*, and *Hallfred's Saga*, describing the sites in both the Mosfell Valley and at Leiruvogur (Clay Bay) on the coast into which the rivers of the valley flow. Beginning with the settlement period of Iceland in the late ninth-century, this valley system was home to important leaders and their families. Thórd Skeggi was the colonist (*Landnámsmaður*) who settled the area (ca. AD 900). Egilll Skalla-Grímsson died there (ca. AD 990). Grímr Svertingsson, the law speaker of Iceland (AD 1002-03), lived there. In the next generation after Grímr, in the years around the 1020s, the chieftain Önundr and his warrior son Hrafn were in charge.

Because of these writings, the sites in the Mosfell Valley region are steeped in history both of Iceland and of Scandinavia in the Viking Age and later. For example *Hallfred's Saga* tells that Önundr and his family at Mosfell/Hrísbrú controlled the Viking Age port at Leiruvogur and extracted dues, by force when necessary, from travelers from Norway who came to their port. Not only is such specific information of importance for constructing a socio-economic understanding of how the Mosfell Valley region functioned, but having this wealth of medieval narrative sources is highly unusual in Viking Age archaeology. Extensive sites are often found throughout mainland Scandinavia, the British Isles and northern Europe, but, because of the lack of written sources, archaeologists and historians know little about the inhabitants, specific history, and socio-economic relationships.



Map 3

Some of the archaeological finds from our 2002 work appear to correspond to material culture and social practices described in the sagas and other old Icelandic writings. For example, we found a reburied, disarticulated skeleton placed right up against the church wall at Kirkjuhóll. This reburial of a young man in his twenties included an intriguing carved whalebone artifact of a kind spoken of in the sagas as a talisman for warding off sickness. So also, the emptied graves in the graveyard are consistent with accounts of bone removals found in the sagas and the Old Icelandic laws. *Egill's Saga*, for instance, mentions both the reburial of pagan ancestors to church ground after the conversion and the movement of bodies from graves. The violence and killing at Mosfell described in *Gunnlaug's Saga* also corresponds, at least in a general way, to archaeological evidence for the violent death of an adult male (Feature 2, Map 3) buried immediately outside the church foundation.

Scientific investigation, including bioarchaeological research, plays a large role in our excavation strategy. Skeletons excavated during the 2002 fieldwork provide important new

evidence of the health status and living conditions of Iceland's earliest inhabitants. Pathological conditions are common among the skeletons, including evidence for

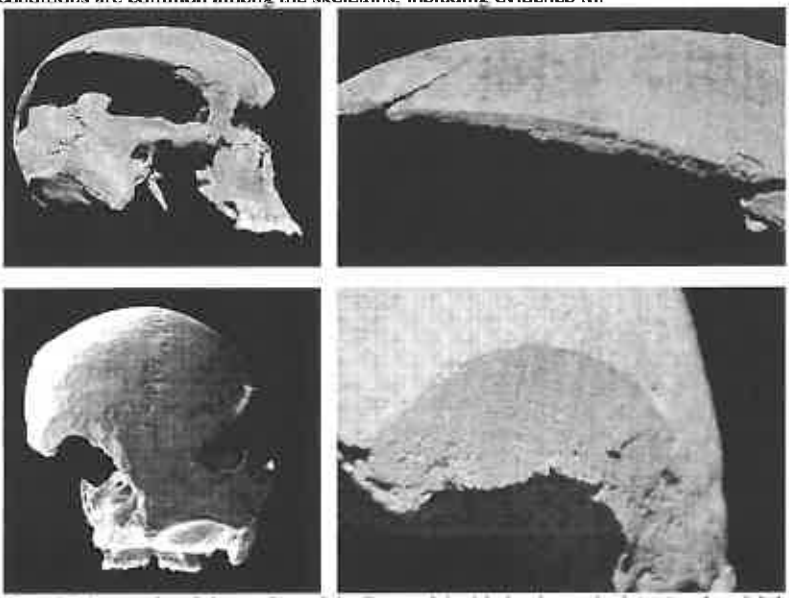


Figure 1. Photographs of the cranium of the Feature 2 burial showing parietal (top) and occipital (bottom) injuries made by a bladed weapon such as an axe. Death surely resulted.

degenerative conditions related to occupational (e.g., osteoarthritis) and nutritional stress (enamel hypoplasia), dental problems, and infections. The 2002 excavations provided further evidence that skeletal lesions of the type associated with infectious disease, heavy labor, and traumatic injuries were common in this conversion period population. Violence was also a factor as observed in the skeleton in burial feature 2. An apparent homicide victim, The skeleton shows massive cranial trauma with a gaping wound in the left parietal and a slice of bone removed from the occipital (see Figure 1). Bioarchaeological analyses of the burials excavated thus far reveal a detailed picture of life at Hrísbrú. At least some of these individuals experienced stressful childhoods, as suggested by growth disruptions in the teeth, usually associated with nutritional deficiencies or disease. Adults surviving these early periods of stress led active lifestyles that left the evidence of arthritic changes in their skeletons. Together the pathological lesions found in these early Icelandic skeletons imply harsh living conditions.

Our work at the Hulduhóll mound on the Hrísbrú farm in 2002 confirmed the earlier observation in the 2001 field season that humans constructed portions of this impressive mound, looking out to the ocean at the seaward entrance to the Mosfell Valley. Specifically, the knoll was modified by humans, who placed basalt curbstones

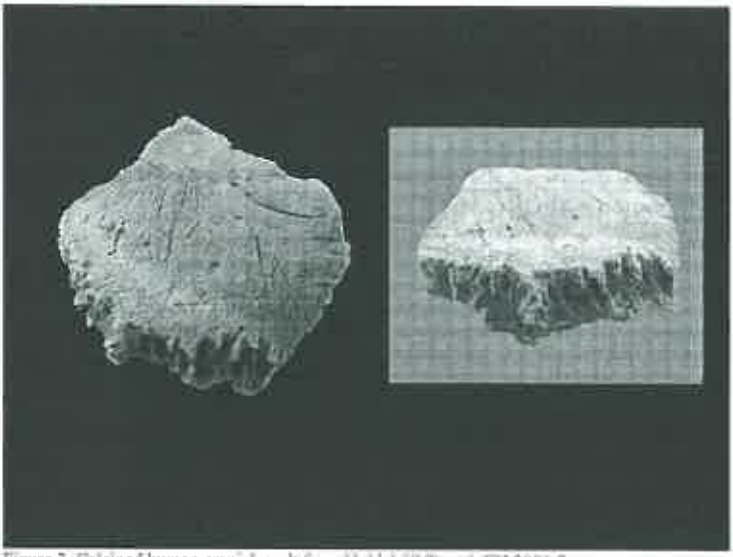


Figure 2. Calcined human cranial vault from Hulduhóll Trench EH 2001-2

and gravel fill on its western end to create a shape resembling the prow of a ship. In 2001, while excavating a small trench near the top of the knoll, we encountered a calcined fragment of a human cranium (see Figure 2). The dense concentration of charcoal with metal artifacts found at the base of the soil horizon near the skull fragment strongly suggested that we had identified the remains of a Viking Age cremation burial placed in a mound modified to resemble a symbolic ship. Although small boat burials have been found in Iceland, cremations, especially those associated with ship burials, have not previously been documented in Iceland. They are, however, well documented elsewhere in the Viking world during pagan times. We reported our preliminary findings in the 2001 site report submitted in spring of 2002 to the Fornleifavernd ríkissins (Byock et al. 2002:10-12) and planned further investigations for our 2002 field season.

In 2002 we excavated additional sections of the buried ash and charcoal deposit on the top of the Hulduhóll mound, finding further cremated human remains and pieces from ancient metallic objects, including remnants of bronze. These finds have been analyzed at the University of Oslo and at the Getty Museum laboratories between 2001 and 2003. They provide intriguing indications that Hulduhóll served as a pagan burial area and ceremonial structure. Several AMS radiocarbon dates on small charred twigs associated with this cremation feature have now been obtained, providing strong evidence that this cremation took place between about AD 990 and 1020. As the first Viking Age cremation burial identified in Iceland, there was considerable interest in this discovery, not just among Icelandic and international archaeologists but also from the Icelandic public.

That a conversion period church at Kirkjuhóll was constructed close by this pagan mound at Hulduhóll is highly informative about the social and cultural customs of the conversion period. There has been much speculation in Viking Age studies about the customs, cultural values, and religious behavior of Scandinavians during the conversion period, but there has been relatively little archaeological evidence. We sense the possibility that the results of the Mosfell excavations may play a role in this international discussion.

Overall, the archaeological work at Hrisbrú/Mosfell is beginning to provide a well-documented picture of complex pagan and Christian habitation and interaction in early Iceland. Possibly there was co-habitation in the period around the year 1000. At the very least, there is considerable evidence of habitation from the *landnám* or settlement period continuing into the 11th century. The long stratigraphic sequence below Hrísbrú is a potential source of pollen and other paleoenvironmental data. The Mosfell Archaeological Project is providing a continuous record of Icelandic Viking Age society before and after the conversion.

In addition to our work at Hrísbrú, a reconnaissance was made of possible Viking Age archaeological deposits at Leiruvogur. Evidence of possible man-made structures was found at Skiphóll at the edge of the estuary. Tephra layers appear to be preserved to some extent in soils along the shore. These deposits will be very important for our project in the future as they may give us an opportunity to date the temporal sequence of environmental changes that have shaped the Leiruvogur estuary. Since the Viking Age, significant sea-level and shoreline changes have occurred in southwest Iceland. In the past centuries, great quantities of sediment, consisting of gravel, sand, and silt, have been transported by rivers into the Leiruvogur estuary. Information on these environmental changes will be central to our goal of producing a comprehensive cultural and ecological reconstruction of the Mosfell Valley's history.

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