

A Viking-age Valley in Iceland: The Mosfell Archaeological Project

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THIS is an account of both the history and the recent findings of the Mosfell Archaeological Project. Excavation is part of an interdisciplinary research approach that uses archaeology, history, anthropology, forensics, environmental sciences and saga studies to construct a picture of human habitation, power relationships, religious and mortuary practices, and environmental change in the region of Mosfellssveit in south-western Iceland. The valley system with surrounding highlands and lowland coastal areas has interlocking natural and cultural components which developed from the 9th-century settlement of Iceland into a Viking Age chieftaincy dominated by the family at Mosfell/Hrisbrú. Excavations of both pagan and Christian sites are providing significant information on the changing periods of occupation, with implications for the larger study of Viking North Atlantic. During the Viking Age, Mosfell was a self-contained social and economic unit connected to the rest of Iceland through a network of roads, including a major E.–W. route to the nearby assembly place for the yearly Althing. With its ship's landing or port at Leirvogur, in the bay at the valley's mouth, the region was in commercial and cultural contact with the larger Scandinavian and European worlds.

In the autumn [c. A.D. 1020] Illugi [the Black] rode from his home at Gilsbakki with thirty men and arrived at Mosfell early in the morning. Önund [the chieftain at Mosfell] and his sons escaped into the church, but Illugi caught two of Önund's kinsmen, one named Björn and the other Thorgrim. Illugi had Björn killed and Thorgrim's foot chopped off. Then he rode home.
*The Saga of Gunnlaug Serpent-Tongue*¹

The passage above is one of many in Iceland's sagas and medieval writings that refers to Viking-age inhabitants of the Mosfell Valley (Mosfellsdalur) in western Iceland. While written sources have their own problems, these medieval references offer a powerful set of comparative tools for informing the archaeological work of our international team of researchers re-constructing the Viking-age landscape of the Mosfell region. The Mosfell Valley, the surrounding highlands, and the lowland coastal area, are a valley system composed of interlocking natural and man-made pieces, encapsulating the major ecologies of Iceland: coastal, riverine and highland.

¹ 'Gunnlaugs saga orms tungu', in Sigurður Nordal and Guðný Jónsson (eds.), *Borgfróðinga sögur* (Íslenzk fornrit, 3, Reykjavík, 1938), ch. 13.

Following the issuing of excavation permits by the Icelandic Archaeological Agency (*Fornleifavernd ríkissins*), we excavated in 2001, 2002 and 2003 at Hrísrú in the valley, and this article focuses on the work of the Mosfell Archaeological Project (MAP) during these years.

Directed by Jesse Byock and Phillip Walker, MAP has been excavating in the Mosfell Valley and the surrounding Mosfell region (Mosfellssveit) since 1995. We employ the tools of archaeology, history, anthropology and environmental science, and work in collaboration with the National Museum of Iceland (Þjóðminjasafn Íslands) and the town of Mosfellsbær.² The goal is to construct a picture of life in the Mosfell Valley and the Mosfellssveit region beginning with Iceland's settlement (*landnám*) in the Viking Age and continuing into the following centuries. The archaeological work began with surveys in the early 1990s and continued with test excavations starting in 1995. Major excavations began in 2001, and the archaeology has documented a rich Viking-age occupational history.

The 2001 excavation at Hrísrú located a number of significant remains, including an early church and surrounding cemetery and an adjacent burial mound, containing remains of human cremation. The goal of our 2002 and 2003 field seasons was to expand the scope of the promising 2001 work. Our excavations focused on three archaeological deposits on the Hrísrú farm: Kirkjuhóll (Church Knoll), the hillock just behind the modern farm's stable that was first tested in the 1995 field season and again in 2001; Hulduhóll (Elfin Hill), a hillock located about 60 m west of Kirkjuhóll; and Loddahóll, a small knoll at the far north-eastern corner of the home field (*tún*), the hay meadow immediately north of Kirkjuhóll (see Fig. 1).

When we began excavating in the Mosfell Valley in 1995, the knolls at Kirkjuhóll and Hulduhóll were used as pasture. Both of these adjacent knolls were covered with grass, and their surface was undisturbed except where the trappings of cows exposed small patches of earth. The farmer, Ólafur Ingimundarson, whose family has lived on the land for many generations, and who is extremely knowledgeable about life and the changes in land use in the valley, follows the archaeological work closely. When we dug our first test trench at Kirkjuhóll, Ólafur informed us that no agricultural machinery had ever been used on the knoll because of the reverence attached to Kirkjuhóll in oral memory as the site of an ancient church. To date this remains the case, a situation that is relatively rare on contemporary Icelandic farms which are highly mechanized. The same has held true for Hulduhóll, with oral story attaching to it the interdiction that it was to be left alone because it was inhabited by 'the hidden people' or elves. As it turned out, both knolls were connected with ancient mortuary rites, Christian and pagan.

The archaeology at the Mosfell Valley sites is aided by a wealth of surviving medieval Icelandic writings, including *The Book of Settlements* (*Landnámabók*), *Egil's Saga* (*Egils saga Skallagrímssonar*), *The Saga of Gunnlaug Serpent-Tongue* (*Gunnlaugs saga Ormstungu*), *Hallfred's Saga* (*Hallfredar saga*), *The Saga of the People of Kjalarness* (*Kjalnesinga saga*), *The Saga of the People of Floi Bay* (*Flóamanna saga*), and *The Short Saga of Orm Storolfsson* (*Orms þáttur Stórolfssonar*) in *Flateyjarbók*. These sources describe sites in the

² We also work in collaboration with the Hólar Project directed by Ragnheiður Traustadóttir.

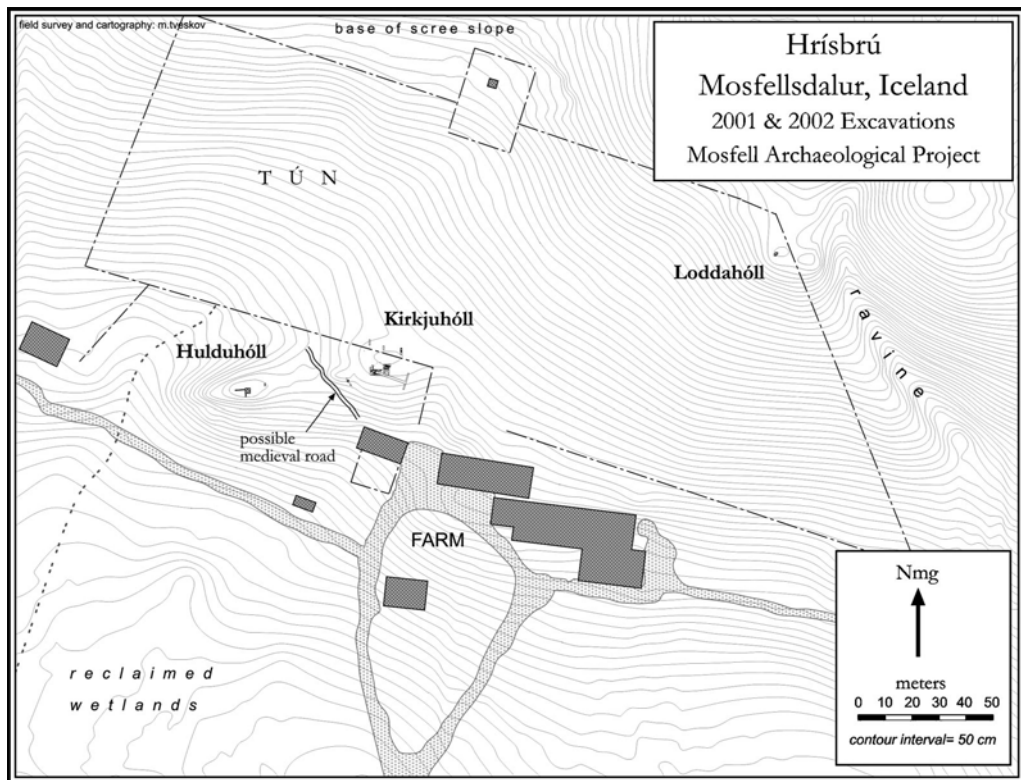


FIG. 1

The farm at Hrísbú showing the excavations sites of Hulduhóll (Elfin Hill), Kirkjuhóll (Church Knoll) and Loddahóll. The modern paths and driveways are marked in light grey and the modern farm buildings in dark grey.

Mosfell valley and at Leirvogur (Clay Bay), the inlet on the coast below the mouth of the valley into which the rivers of the Valley flow. For example, the following passage from *The Saga of Gunnlaug Serpent-Tongue* tells that Önund, one of the Mosfell chieftains or *goðar*, held sway over the headlands or promontories of the local southern coastal region and was married to a woman from a prominent family on Iceland's south-western coast:

A man named Önund lived to the south at Mosfell. He was among the most wealthy of men and held the chieftaincy [*goðorð*] for the headlands [*nesin*] there in the south. He was married, and his wife was named Geirny. She was the daughter of Gnup, the son of Molda-Gnup who settled at Grindavik in the south. Their sons were Hrafn, Thorarin, and Eindridi.³

While we do not by any means believe everything found in the written materials, the sources concerning Mosfell are often basic and detailed. We have in these writings a core of information from a variety of sources about settlers, chieftains, warriors, women and lawgivers from Mosfellssveit. Much of this

³ Op. cit. in note 1, ch. 5.

information speaks to the material and social culture, describing habitation sites, lands, social standing, kinship relations, economic arrangements, as well as determinations of causes and places of conflict. As a grouping of sources about a regional chieftaincy or *goðorð*, these passages from different texts have been largely overlooked by historians and anthropologists. Together the recent archaeological finds by MAP and the ancient written materials offer a new combination of information about a 250-year period in the past of an important region from the early 10th century to the mid-12th, a time which spans the transition from prehistory to history, from paganism to Christianity.

Having medieval narrative sources, such as those connected with the Mosfell sites, or written sources at all, is exceptional in Viking archaeology. Extensive Viking-age sites are found throughout mainland Scandinavia, the British Isles and northern Europe, but because of the paucity of written sources, archaeologists, historians, and anthropologists often know little about the inhabitants, their personal history or specific socio-economic and political relationships. The Viking-age sites in Mosfellssveit are somewhat different.

Beginning with Iceland's settlement period in the late 9th century, the Mosfell Valley was home to important leaders and their families about whom the sources tell a good deal. *The Book of Settlements* speaks of Thord Skeggi, a settler or *landnámsmaðr* with extensive family connections and allies, as the first to colonize the area around the year 900. In the decades before and after the year 1000, Grim Svertingsson lived at Mosfell. He was a prominent chieftain and the Law-Speaker at the Althing (Iceland's annual national assembly), and during Grim's occupancy, Egil Skallagrimsson, the protagonist of *Egil's Saga* and Grim's father-in-law, also lived there in his old age. Egil died on Grim's farm and according to his saga was first buried in a pagan burial mound at Tjaldanes on the floor of the Mosfell Valley (c. 990). A decade later Egil's body was disinterred and moved to the new church at Hrísrú, built shortly after the conversion in the year 1000. In the generation after Grim, in the 1020s, the chieftain Önund and his warrior son Hrafn lived at the Mosfell/Hrísrú site. From the start, the interdisciplinary archaeological work in the Mosfell Valley was conceived in terms of treating methodological issues surrounding excavations within a quasi-historical context.

The following passage from *Egil's Saga* tells us about the building of the first church at Mosfell/Hrísrú and the subsequent movement of the church and graveyard to a new farm site (also called Mosfell) about 400 m to the east of Hrísrú (see Fig. 2). The passage recounts that the movement took place while Skapti the priest was present, information that dates the event to the mid-12th century. Several sources (different from those above) mention Skapti, who according to *Prestatal*, a 12th-century listing of well-born priests, was alive in 1143.⁴ Skapti appears to have been a descendant of Egil, and he may also have been a chieftain. Some scholars, including the saga specialist Sigurður Nordal, surmise

⁴ 'Nafnaskrá íslenzkra presta', in *Diplomatarium Islandicum: Íslenzkt fornbréfasafn*, ed. Jón Sigurðsson (Copenhagen, 1857) Vol. 1, 186. This list of priests is widely believed to have been written by Ari Thorgilsson, the author of *Íslendingabók*. Skapti is also mentioned in *The Saga of Thorgils and Haflíði (Þorgils saga ok Haflíða*, ch. 31, in *Sturlunga saga I*, eds. Jón Jóhannesson, Magnús Finnbogason and Kristján Eldjárn [Reykjavík, 1946]).

that Skapti was the owner of Mosfell and the *göðorð* in the mid-12th century when the following events described in *Egil's Saga* took place:⁵

When Christianity was adopted by law in Iceland [around the year 1000] Grim of Mosfell was baptized and built a church there. People say that Thordis [Grim's wife and Egil's stepdaughter] had Egil's bones moved to the church, and this is the evidence. When a church was built at Mosfell [c. 1140], the one that Grim had built at Hrísrú was taken down and the graveyard dug. Under the altar some human bones were found, much bigger than ordinary human bones, and people are confident that these were Egil's bones because of stories told by old men.

Skapti Thorarinsson the Priest, a man of great intelligence, was there at the time. He picked up Egil's skull and placed it on the fence of the churchyard. The skull was an exceptionally large one and its weight was even more remarkable. It was ridged all over like a scallop shell, and Skapti wanted to find out just how thick it was, so he picked up a heavy axe, swung it in one hand and struck as hard as he was able with the reverse side of the axe, trying to break the skull. But the skull neither broke nor dented; it simply turned white where struck, and from that anybody could guess that the skull would not have been easily cracked by small fry while it still had skin and flesh on it. Egil's bones were re-interred on the edge of the graveyard at Mosfell.⁶

In recent times, the above passage has attracted attention. The results of that inquiry, especially those about Paget's Disease and the epidemiological history of this bone disease, contribute to our archaeological research and have helped set from the start the cross-disciplinary nature of the research.⁷

Along with giving the history of the churches and graveyards, the medieval passage also helps to clarify the two place-names Mosfell and Hrísrú. Both names are associated with the farmsteads of the Mosfellingar, as the chieftain or *goðar* family in the Mosfell Valley was called. In the 1100s the original Mosfell landholding was split into two adjoining farms, and the older farmstead was given the name Hrísrú. This division of the land explains the usage of the two names in the medieval sources when referring to the oldest farm. In 1995, we excavated a corner of what may be the remains of the 12th-century church referred to in the passage above, the one constructed at the new farmsite of Mosfell when Grim's original church at Hrísrú was taken out of service and moved.

Because of the medieval writings, the sites in the Mosfell Valley region are steeped in the history both of Iceland and of Scandinavia in the Viking Age. For example, *Hallfred's Saga* tells a story about the warrior poet Hallfred's return to his native Iceland. The passage recounts that Önund at Mosfell/Hrísrú controlled the ship-landing or port at Leirvogur, and that, when necessary, the Mosfellingar were ready to extract dues by force from travellers.

In the summer Hallfred sailed out [from Norway] to Iceland, landing the ship in Leirvogur, south below the heath. At that time Önund was living at Mosfell. Hallfred was required to pay half a mark of silver to Önund's houseservant, but refused harshly. The servant came home and told of this trouble. Hrafn [Önund's son] said that it was to be expected that the servant would get the lower part of the bargain in an exchange between them. And in the morning,

⁵ *Egils saga Skalla-Grímssonar*, ed. Sigurður Nordal (Íslensk fornrit, 2, Reykjavík, 1933), lvii.

⁶ *Ibid.*, ch. 86.

⁷ Þórður Harðarson, 'Sjúkdómur Egils Skallagrímssonar', *Skírnir*, 158 (1984), 245–8; J. Byock, 'The skull and bones in Egils Saga: a Viking, a grave, and Paget's Disease', *Viator*, 24 (1993), 23–50; 'Hauskúpan og beinin í Egils sögu', *Skírnir* (1994), 73–109; 'Egil's Bones: A Viking Warrior and Paget's Disease', *Scientific American*, 272/1 (1995), 82–7.

Hrafn himself rode to the ship, intending to cut the anchor cable [letting the otherwise moored ship drift out to sea] to make sure that Hallfred and his men did not leave [continue on their journey within Iceland]. Then men intervened between them and took part in reconciling them. The result was that Hallfred paid half again more than the servant had demanded. With this they parted.⁸

We will never know if this story about Hallfred is true, but for our archaeology, the information about Hallfred, although interesting, is not uppermost. The saga episode is a story told to show that Hallfred was a cowardly bully, good at intimidating servants but no match for a fighting man like Hrafn. Of importance to us is the medieval text's mention (one of several in the written sources) of Leirvogur as a landing place for ocean-going ships and the economic connection between this port and the chieftains at Mosfell. From the layout of the land, we would have surmised the connection, but it is better to have a medieval description of the Mosfellingar willing to fight for control of the coastal region at the mouth of their valley.

Much is to be gained by gathering these medieval passages about the Mosfell region into an analytic study within the context of early Iceland's (or for that matter the Viking Age's) historical, archeological and socio-economic development. They tell us not only about the lives and the regional connections of characters such as Thord Skeggi, Ingolf Arnason, Grim Svertingsson, Egil Skallagrimsson, Önund from Mosfell and his son Hrafn, but also about Thordis Egilsdottir, Hallfred, Illugi the Black and other prominent individuals. So also the passages give us considerable information about what some scholars refer to as the 'small people' of history: the labourers and hired hands on the farms, the type of men and women who usually go unmentioned in European medieval narratives, but who were the ones who utilized most of the archaeological finds that we come across. In the Mosfell Archaeological Project, the integrated study of archaeology, biological anthropology, landscapes and narrative sources offers a powerful comparative approach in illuminating the history of a North Atlantic community in the Viking Age.

By Icelandic standards, it is highly unusual to have so many detailed medieval narrative sources describing such rich archaeological sites from the earliest centuries of human settlement. Until now, the correlation between modern scientifically excavated archaeological sites in Iceland and medieval written sources has been poor. Most recent archaeological finds from Iceland's earliest habitation period, whether of buildings, artefacts or graveyards, are only scarcely, if at all, mentioned in the written sources. A good example is the wonderfully excavated farmstead at Hofstaðir in Mývatnssveit in northern Iceland.⁹ There are no written sources providing information about either the early farmstead itself or the people who might have lived at that site, their genealogies, kinship relationships, social roles or political and economic influence. The magnificent excavations in Þjórsárdalur in southern Iceland are also under-represented in the written sources. A few brief mentions in *The Book of Settlements* and *Njals Saga*, including the naming

⁸ 'Hallfredar saga', in Einar Ól. Sveinsson (ed.), *Vatnsdæla saga* (Íslensk fornrit, 8, Reykjavík, 1933), ch. 11.

⁹ I. A. Simpson, O. Vésteinsson, W. P. Adderley and T. H. McGovern, 'Fuel resource utilisation in landscapes of settlement', *Archaeol. Science*, 30 (2003), 1401–20.

of a man from Stöng who is also connected with a runic inscription in the Orkneys, have given the Stöng archaeology vital historical context.¹⁰ In this light, we see the information about the sites at Mosfell as a boon for Icelandic archaeology and history.

It is also unusual for a series of major archaeological sites from the first centuries of Iceland's settlement to be undisturbed. The sagas and other writings such as *The Book of Settlements* mention numerous places, but many of these medieval sites have been continuously inhabited since the settlement period, leaving few traces of the earliest medieval occupation. Many other sites described in the sources have disappeared as a result of Iceland's characteristic erosion. Building activity over the years and the extensive use of agricultural and construction machinery in modern times (the latter often employed to level natural and cultural irregularities such as the remains of turf buildings from the surface of the fields) has reduced the potential of other sites. As noted, Hulduhóll and Kirjuhóll on the Hrísrú farm were spared this disturbance.

Certainly other unexcavated archaeological sites with connections to medieval written sources exist, but in recent decades few have been found or explored. With these factors in mind, the cross-disciplinary methodology followed by the Mosfell Archaeological Project might be of interest to other archaeologists. Mosfell Valley was initially chosen in the 1990s as a specific site for long-term excavations only after intensive field survey from the coast up through the valley and into the surrounding highlands.¹¹ At the same time we undertook archival, manuscript, textual and oral memory research, the latter gathering easily lost information from the Valley's living inhabitants. As part of MAP's research, two local teachers, Bjarki Bjarnason and Hlynur Helgason, undertook an oral history survey, concentrating on the oldest inhabitants of the valley, several of whom have since died. Many of the memories reached back to what is now a lost world of the 1920s and 1930s, before Iceland's post-World War II modernization. In the mid- and late 1990s, we tried phosphate analysis and geophysical methods, including magnetometry and ground conductivity surveys on a variety of promising sites in the valley and surrounding highlands. Subsequently, we did limited trenching followed up beginning in 2001 with broader exposure excavations at Kirkjuhóll and Hulduhóll.

THE LANDSCAPE AND THE VALLEY SYSTEM

In their present states Kirkjuhóll, Hulduhóll, and Loddahóll are relatively small, oval-shaped, grass-covered knolls behind the modern buildings of the dairy farm at Hrísrú in Mosfellsdalur. The long axis of each knoll is oriented on the same general SW.–NE. line. Given the bedrock exposed around the skirt of Hulduhóll and on the east side of Loddahóll, the knolls may be the surface expressions of a basalt ridge that runs from the base of the scree slope of broken

¹⁰ Sigurdur Thorarinsson, 'Bjósárdalur under landnamstid och sagatid', 17–21 in M. Stenberger (ed.), *Fornfnda Gárdar i Island* (Copenhagen, 1943).

¹¹ Thanks are owed to Bjarki Bjarnason, who, in the initial survey phase of the project and afterwards, walked the valley, coast, and highlands with Jesse Byock, sharing his extraordinary knowledge of Mosfellsveit's past. Professor Helgi Þorláksson also worked closely with us on textual and archival matters.

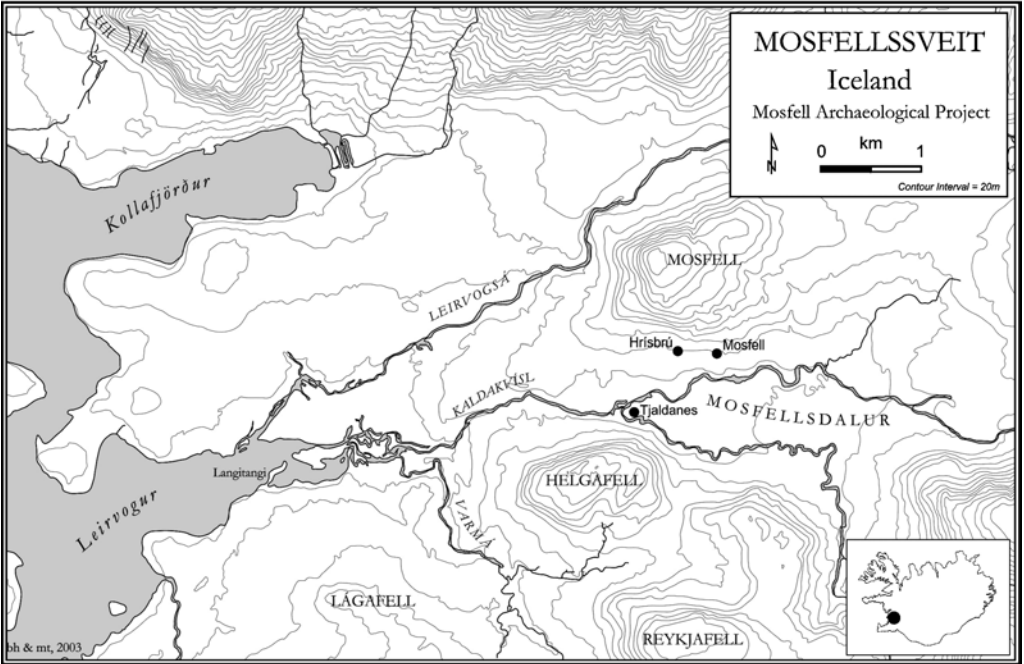


FIG. 2

Map of Mosfellssveit (the Mosfell region) showing Mosfellsdalur (the Mosfell Valley) and the farms of Hrisbrú, Mosfell and the coast.

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.

In approaching our work at Mosfell, we view the region as a valley system (see Fig. 2). Beginning with the 9th-century settlement, this area, or *sveit*, developed into a functioning Viking-age Icelandic community. Our task is to unearth the early history of the Mosfell region and to provide an in-depth understanding of how this countryside evolved from the earliest habitation. Fortunately, erosion has not destroyed evidence of early habitation in this valley-system. Unlike many other early habitation sites across Iceland, which have been denuded, the Mosfell Valley has served as a catchment for wind and water-borne sediments from other areas. Until recent times, the valley floor was a marshy area that extended up the sides of the valley almost to the farmstead of Hrisbrú. The thick sediments on the Hrisbrú lands record the environmental changes that mark the impact on the landscape of the immigrants' introduction of Scandinavian herding culture immediately after the beginning of the Viking-age settlement. Specifically, the soils at our excavation sites at Kirkjuhóll and to a lesser extent Hulduhóll contain a variety of cultural evidence (stone and turf structural remains, midden debris, etc.) encased primarily in silty air-borne loess, the latter probably reactivated and redeposited by erosion and devegetation associated with early forest/scrub burning and subsequent overgrazing. Upslope on the grassy *tún* — as documented in our previous seasons —

there are larger and coarser accumulations of mudflow and colluvial deposits mixed with loess and volcanic ash.

The 2001 to 2003 excavations — together with the surveys, geological analyses, and test excavations of our previous field seasons — suggest that the earliest inhabitants at the Hrísrú site initially lived on the Valley sides, under Mosfell Mountain, whereas the present farm buildings are lower and closer to the now drained valley centre. Some of the early buildings appear to have been abandoned within the first centuries because of erosion, including mud and rock slides. These latter were initiated by the impact of vegetation clearance and livestock grazing on the fragile subarctic ‘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 away from the path of mud and rock slides. They moved either to the present-day site of the Mosfell farm (east of Hrísrú) or closer to the placement of the present-day farm buildings at Hrísrú (old Mosfell): that is, further from the slopes of Mosfell Mountain but nearer to the marshy valley floor. The abandoned earliest habitation layers were soon buried where they have remained until our day. Future excavations will determine if some initial habitation sites at Hrísrú were already moved in the 10th century.

The settlements in the Mosfell Valley are in many ways representative of early settlements in coastal valleys throughout Iceland. Except for a few Irish monks who are thought to have arrived earlier seeking solitude, Iceland was uninhabited when the first settlers or *landnámsmenn* arrived in the mid- to late 800s. The settlers came mostly from mainland Scandinavia, especially the western coast of Norway, but significant numbers also came from the Viking settlements in the British Isles. These latter Norse settlers from Ireland, Scotland and the Hebrides often brought with them Gaelic wives, followers and slaves. Although the culture of early Iceland was predominantly Norse, the population was mixed Scandinavian and Gaelic, the latter probably derived mostly from women.¹²

The newcomers were forced to adapt to a harsh northern landscape of sometimes limited resources. From modern socio-historical and anthropological viewpoints, early Iceland is a social laboratory,¹³ in which the evidence of archaeology has a large role to play. The society that evolved during the Viking Age on this large island (Iceland is 25% larger than Ireland and two-thirds the size of England and Scotland together) avoided the establishment of most official hierarchies without going so far as to create egalitarianism. The politically active population consisted mostly of free land-owning farmers.¹⁴ These latter kept some slaves, but free workers and cotters were more common. Leadership was in the hands of small-scale Scandinavian chieftains known as *goðar*. Consensus played a

¹² A. Helgason, S. Sigurðardóttir, J. R. Gulcher, R. Ward and K. Stefánsson, ‘mtDNA and the origin of the Icelanders: deciphering signals of recent population history’, *American J. Human Genetics*, 66 (2000), 999–1016; A. Helgason, S. Sigurðardóttir, J. Nicholson, B. Sykes, E. Hill, D. G. Bradley, V. Bosnes, J. R. Gulcher, R. Ward and K. Stefánsson, ‘Estimating Scandinavian and Gaelic ancestry in the male settlers of Iceland’, *American J. Human Genetics*, 67 (2000), 697–717.

¹³ J. Byock, *Viking Age Iceland* (London and New York, 2001).

¹⁴ Jón Jóhannesson, *A History of the Old Icelandic Commonwealth: Íslendinga saga* (Winnipeg, 1974); G. Karlsson, *The History of Iceland* (Minneapolis, 2000); idem, *Goðamennning: Staða og áhrif goðorðsmanna í hjóðveldi íslendinga* (Reykjavík, 2004).

prominent role in decision-making, and Iceland's medieval government found its roots in issues that specifically concerned the political and legal rights of free farmers.

The environment encountered by the first settlers was significantly different from that of mainland Scandinavia or the coastal regions of the British Isles. The effects of active volcanic systems, massive glaciers, and the subarctic ecology, as well as the climate, the distance from Europe, and the shortage of good building wood, helped to define the culture and its evolving survival strategies.¹⁵ The settlers brought with them dogs, cats, pigs, goats, sheep, cattle and horses. They also brought lice, fleas, dung beetles and a variety of other animal parasites. Working with the skills and practices of their homelands, the settlers set about harnessing the resources of their new landscape and relied heavily on the Norwegian model of cattle and sheep raising, traditional Norse strategies that were destructive to the fragile northern ecology. In the first centuries, however, life was good and, directly or indirectly, the new culture group that formed in valleys such as Mosfell took advantage of a northern coastal location made habitable by the warmth of the Gulf Stream. The settlers did not live in villages, and there is no evidence of urbanism. They lived on separate, often isolated farmsteads, and from the start they used the surrounding highlands as a commons where they let livestock roam during the summers. The worst danger for the settlers may have come not from the harshness of the nature, but from other men. Political life in Iceland focused on feuding and the processes of dispute resolution.

The Mosfell Valley is a social, cultural, geographical and environmental microcosm of early Iceland. The valley and its coastal region were partly a self-contained social and economic unit, but they were also connected to the rest of Iceland through a network of extensive horse-paths, as there were no roads for wheeled carts in Iceland until modern times. The major route connecting western and southern Iceland ran through the Mosfell Valley. It also led to the nearby annual meeting of the Althing at Þingvellir, 30 km to the east of Mosfell. Close to some of the best marine fishing grounds in Iceland, the economy of the Mosfell Valley system was mixed terrestrial and marine. In 2001, we analysed the carbon isotopes contained in one 10th-century skeleton to estimate the marine reservoir effect as part of our radiocarbon dating programme. The results suggest that the diet of this individual was roughly 28% marine, from the consumption of fish, sea mammal, shellfish, or other marine or estuarine resources.

The archaeology has produced other evidence of the close connection between the valley and the coast. For instance, in 2002 the screening of organic rich sediment from a midden found on Kirkjuhóll revealed several fragments of mussel periostracum, the 'skin' that covers the outer shell of many bivalve species. Based on their morphology, these fragments appear to represent the remains of *Mytilus sp.*, probably *M. edulis*, a mussel found in rocky intertidal areas exposed to

¹⁵ P. Buckland, 'The North Atlantic environment', 146–53, in W. Fitzhugh and E. Ward (eds.), *Vikings: The North Atlantic Saga* (Washington, 2000); T. Amorosi, P. Buckland, A. Dugmore, J. H. Ingimundarson and T. H. McGovern, 'Raiding the landscape: human impact in the Scandinavian North Atlantic', *Human Ecology*, 25 (1997), 491–518; K. P. Smith, 'Landnám: the settlement of Iceland in archaeological and historical perspective', *World Archaeol.*, 26 (1995), 319–46; Byock, op. cit. in note 13.

relatively low-energy wave action such as is found today in Leirvogur at the mouth of Mosfellsdalur. This marine find at our inland site resembles other midden features of calcined bone and organic matter identified at Kirkjuhóll in 2001 in the eastern half of trench CK-2001-2.¹⁶ A sample of periostracum from this feature yielded an AMS radiocarbon age of 1680 ± 30 B.P. (OS-37372) that, after calibration and correction, suggests an age of A.D. 740–880 (1 sigma) or A.D. 690–940 (2 sigma). Given uncertainties about the local marine reservoir effect, and the possibility that old carbon may be entering the estuary system via thermal streams (one river that flows into the estuary is named Varmá or ‘Warm River’ because of its thermal source), this age is generally consistent with the evidence for occupation of Hrisbrú from the initial Viking-period settlement into the conversion era (c. 870–1020).

In Viking and later medieval times, trade, travel and immigration played important roles in the lives of the inhabitants of Mosfellssveit. With its coastal port at Leirvogur, the Mosfell Valley was in commercial and cultural contact with Scandinavia and the rest of Europe. The Leirvogur port and the saga accounts of comings and goings at this landing site raise important questions as to the origins of the Mosfell population. The origin of the early Icelanders in general is a much discussed issue,¹⁷ and the on-going analysis of our skeletal remains from the 10th and 11th centuries may have something to say on this issue. MAP is among the first research projects in Iceland to use isotopic analysis of human tooth enamel to determine the birthplace or early childhood habitation of individuals whose skeletal remains have been excavated. Concentrations of stable isotopes of strontium in ground water varies between geological regions, and Iceland with its unique volcanic lithology differs markedly from the Scandinavian mainland. Distinctions between Norway with its old rock and Iceland with its young volcanic environment provide a basis for determining whether a person’s teeth formed while living in Iceland or on the Scandinavian mainland, because differing isotopic values would have been transferred to the calcified tissues of the people depending on the location. Isotopic studies conducted at McMaster University have examined three of the people buried at Mosfell, and all of them appear to have been born and raised in Iceland.¹⁸

KIRKJUHÓLL: CHURCH KNOLL

The cultural deposits at Kirkjuhóll are complex, but radiocarbon dates, stratigraphic relationships, tephrochronology and burial associations all support a general sequence spanning the pre- and early conversion eras of the Viking Age. The archaeology provides evidence for a range of ceremonial behaviors at Hrisbrú, especially during the conversion period around the year 1000. We have identified three separate phases of occupation on Kirkjuhóll. The earliest consists of several

¹⁶ J. Byock et al, Viking Age Graves in the Mosfell Valley: The Mosfell Archaeological Project, 2001 (unpub. rep.).

¹⁷ Helgason et al., opp. cit. in note 12.

¹⁸ H. Schwarcz and A. Dickin, ‘Appendix E: preliminary report on strontium isotopes in teeth from Kirkjuhóll’, 84–5 in J. Byock et al., Pagan and Christian Burial Sites at Hrisbrú: The Mosfell Archaeological Project, 2002 (unpubl. rep., 2003).

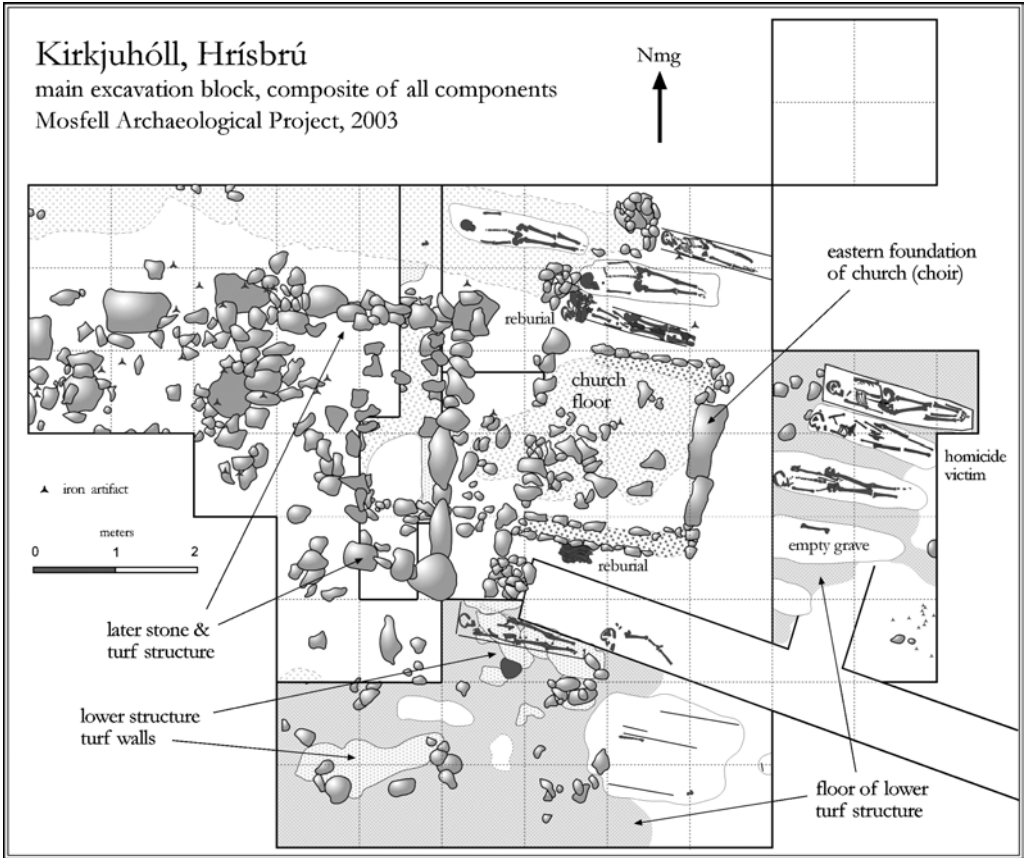


FIG. 3

Church ruins with surrounding graves after 2003 excavation.

domestic refuse pits and disturbed turf wall features (see 'lower structure turf walls', Fig. 3). Lying on top of these early domestic deposits are the intact structural remains of a church surrounded by associated and contemporaneous inhumation burials, radiocarbon dated to the 10th and 11th centuries (Figs. 3–4). Uppermost and close under the surface, we found the disturbed remains of a small agricultural structure, possible a collapsed sheep shed. Stratigraphic relationships and pieces of imported Early-modern pottery within its contexts date this small structure to many centuries after the Viking Age (marked on Figure 3 as 'later stone and turf structure'). Chemical and stratigraphic analyses of volcanic ash layers and radiocarbon dating undertaken in 2002 confirm that the remains of the early turf building and associated midden deposits that make up the initial occupation at this site, as well as the graveyard and the church foundation, date from the 10th and 11th centuries. The oldest habitation layers at Hrísbú, which are clearly earlier than the church, may go back to about the year 900, a possibility we will explore in future excavations.



FIG. 4

Ruins on Kirkjuhóll after the 2003 excavation. The church chancel is at the far end of the excavation area. In the foreground are the disturbed remains of a later structure, which overlies the remains of the church nave.

The structural remains belonging to the church phase uncovered on Kirkjuhóll in 2002 include the well-preserved stone foundation of the S. wall of the church chancel (Fig. 5, Feature 19). The 2003 excavations (continuing the work of 2001 and 2002) uncovered the eastern and the northern walls of the church chancel (see Figs. 3–4). The chancel is approximately 2 m wide and 2 m long. The N. and S. chancel walls appear to have been constructed of vertical wooden staves or planks inserted into wooden sill beams. The sill beams rested on gravel and in the S. and N. walls of the choir were held in place on either side by small vertically embedded foundation stones (see Fig. 3, the southern wall of the choir at the eastern end of the church). We found small pieces of wood mixed in with the gravel, probably the remnants of the sill beams (see below the discussion of Stratum I, concerning the radiocarbon dating of similar carbonized and uncarbonized small pieces of wood found in the choir's gravel floor). The vertical planks or staves of the eastern wall rested on top of large flat foundation stones.¹⁹ At the end of the

¹⁹ J. Byock et al., *The Kirkjuhóll and Hulduhóll Excavations at Hrisbrú: The Mosfell Archaeological Project, 2003* (unpubl. rep.).

2003 field season, we were able to distinguish the disturbed upper remains of a later agricultural building from the well-preserved nave of an older church lying below.

The goal of the coming excavations will be to document and then remove the overlying younger structural remains in order to uncover the nave of the church. No intact large structural foundation beams or corner posts from early Icelandic churches have been found (and very few wooden structural remains from the earliest churches in Norway), leaving unanswered many questions of how such structures were built, not least how the pieces were joined together. Because we were able to determine the intact placement of a large wooden sill beam from the underlying church foundation lying well preserved *in situ*, the possibility exists that the coming field seasons will shed new light on the architectural and construction methods of the first Icelandic churches.

The radiocarbon dates obtained from the site are consistent with the hypothesis that the structure, which seems to have gone through several significant building phases, is the conversion-age church in *Egil's Saga*. If so, this would be the church to where the saga tells us that Egil's remains were moved after his initial burial in a pagan mound at Tjaldanes (c. 990). *The Saga of Gunnlaug Serpent-Tongue*, in addition to *Egil's Saga*, mentions a church at the site around the year 1020. (See the saga passage at the head of this article describing a raid on the Mosfell farmstead in which the inhabitants sought refuge in the sanctity of the church.) According to *Egil's Saga* the original conversion-age church at Hrísrú was pulled down in the mid-1100s, at which time a new church and graveyard were constructed several hundred metres to the east. We draw no conclusions at this point, but shall test this hypothesis in coming field seasons.

In accordance with the saga information that bones were moved to the new churchyard, we found several emptied graves in the old Hrísrú graveyard. The emptied graves are witnessed by shafts containing small pieces of isolated human bone, apparently missed when the remains were removed from the grave. Such a transfer of bones is consistent with accounts of exhumations found in the sagas and in *Grágás*, the Old Icelandic 'Grey Goose' laws. *Egil's Saga*, in particular, mentions the reburial of pagan ancestors at the Mosfell/Hrísrú site.

In the 2001 and 2002 excavations of the graveyard at Hrísrú, nine burials were excavated around the S. and E. walls of the church. The burials, which consisted of 8 adults (6 males, 1 female and 1 undetermined) and one poorly preserved infant vary in preservation, alignment and treatment. At least seven were buried in an E.-N. orientation with their heads to the west. The 2003 excavations added an additional five burials (all males) mostly directly north of the church along with evidence of several empty graves to the south (Fig. 3). Most burials appear to be interred in coffins, and along with coffin traces, nails and clenched bolts, burial associations include a carved piece of whalebone, a staff gripped in the hand of a skeleton, an iron pot fragment, and pieces of wood.

Trenching in 2001 (CK-2001-2: Fig. 5) about 10 m to the east of the church disclosed three lenses of dark charcoal and burned bone (Features 10-12, lying east of the area in Figure 5), which appear to be a mixture of midden and hearth-cleaning deposits. Parts of these lenses are possibly the remains of a large fire-pit.

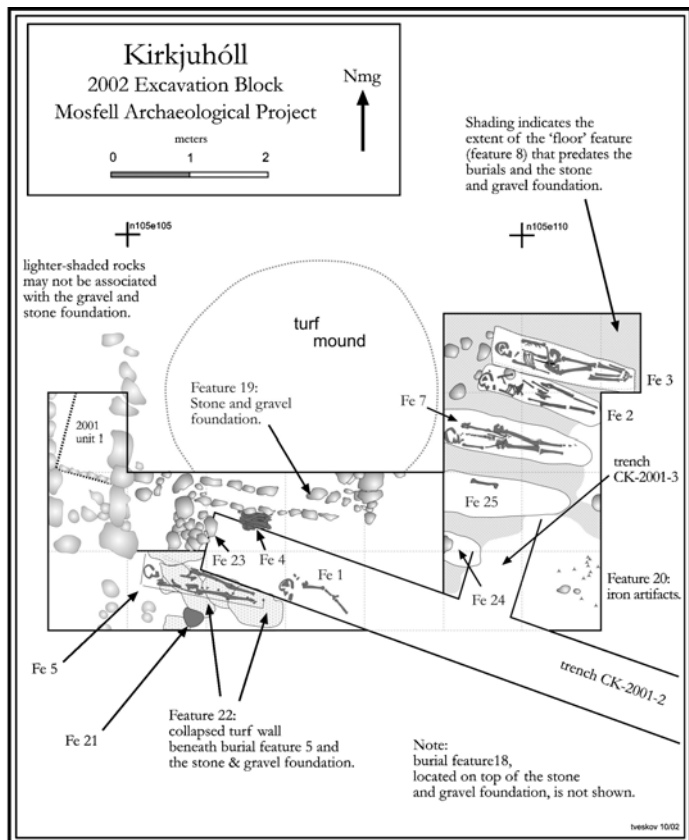


FIG. 5

Church ruins and graves at Kirkjuhóll after the 2001 excavation (Fe = Feature).

Charcoal from a twig found in Feature 10 produced a calibrated radiocarbon date centred upon A.D. 900. The initial sorting of the bulk samples showed a large percentage of charcoal, considerable amounts of calcined mammal and bird bone, and much smaller amounts of mostly unburned fish bone. Preliminary analysis suggests that most of these bones appear to be clupeids (e.g. herring). There are also a few fragments of forged iron. The deposit may also contain a small chert or flint flake. The presence of unburned fish bone makes us suspect the material was from a refuse midden mixed with the ashes from a hearth. If this is a midden and/or a hearth-cleaning deposit, then we may be quite close to the site of a farmhouse.

There are numerous strata at the Kirkjuhóll site. Cultural remains are mostly found within Stratum I, a relatively homogeneous sedimentary unit of dark brown and relatively organic-rich silty loess. Stratum II, immediately beneath, is a 10–15 cm thick wedge of dark gray fine silty clay and loess mottled with charcoal, which also shows some cultural evidence. Stratum II lies on top of two largely undisturbed non-cultural layers. The first of these layers, Stratum III, is a 20–30 cm thick wedge of prehistoric undisturbed sediment comprised of lenses of dark orange-brown and dark brown sandy silt, loess, and tephra with some grey mottling. Stratum IV is a

layer of dark orange-brown fine silty sand with about 40 per cent subangular vesicular basalt gravels and cobbles.

The presence of *landnám* tephra (volcanic ash dated to A.D. 871 ± 2) and the medieval tephra layer from the early 900s in the turf walls in the lower parts of Stratum I and in Stratum II provides a basis for dating.²⁰ These two upper strata mostly post-date the 920s. As a sedimentary unit, Stratum I ranges from over a metre thick under the top of the knoll to less than 0.5 m thick along the slopes. The cultural features in Stratum I include structural remains, human burials, artefacts, imported gravel and basalt building cobbles, and large numbers of small calcined animal bone fragments. The sediment of this stratum appears to be fairly homogenized, probably due to earthworm activity. While burials, midden features, and stone and turf foundations remain fairly well preserved, grave-shafts are only indistinctly evident. Particularly in Stratum I, the areas over burial features are often mottled with ephemeral stains of oxidized red or yellow sediment, charred organic material, and woody debris that bespeak cultural activity.

Stratum I contains additional sub-strata, possibly of cultural origin. One is a 2–3 cm thick consistent band of oxidized red and yellow sediment lying 30 cm below the surface of the knoll. This stratum was most clearly evident beneath the small artificial surface mound above the younger agricultural building lying on top of the church and conforming to the surface contour across the main excavation block. The band lies over all the burial features and the stone and gravel chancel foundation (Feature 19). Another sub-stratum — a poorly sorted gravel lens — is also centred beneath the surface mound. It is thickest (~ 15 cm) immediately beneath the centre of the mound and lies directly over the gravel and stone foundation. This lens, truncated by the larger stone feature, appears to be part of a cultural floor used to build up the eastern part of the church. Careful examination showed that the lens contained a localized stringer of small carbonized and uncarbonized wood fragments. Hypothesizing that these could be weathered remnants of wood from the church itself, we submitted a fragment of uncarbonized wood for radiocarbon dating. An uncalibrated AMS date of 1150 ± 40 B.P. (Beta-175676) produced an estimated calendar age of A.D. 890, with an age-range of A.D. 870–960 at one sigma. If the dated wood is part of the church, perhaps part of the walls or flooring, there is a strong potential that the resulting date reflects the ‘old wood’ effect that is it measures the growth, hence the age, of the timber rather than the time of its use by the occupants of Hrísrú.

At this point we can summarize some of the long-term results of our archaeology at Hrísrú. In 2001, we began major excavations around a turf mound on the top of Kirkjuhóll (Fig. 5), finding ancient graves and buildings. In 2002 and 2003, we continued the excavations, documenting a complex occupational history that spans the pagan and early conversion eras, c. 900–1100. A decade of work, beginning in 1995, has revealed on Kirkjuhóll Viking-age features associated with several major medieval components. There are residential debris, middens and

²⁰ K. Grönvold, N. Óskarsson, S. Johnsen, H. Clausen, C. Hammer, G. Bond and E. Bard, ‘Tephra layers from Iceland in the Greenland GRIP ice core correlated with oceanic and land-based sediments’, *Earth and Planetary Science Letters*, 135 (1995), 149–55.

features (turf wall remnants, a floor striated with organic layers including hay remnants, charcoal and calcined bone) from a farm, dating to the 900s; and stone foundations of a small church with an associated cemetery dating to about 1000. This church appears to be associated with the conversion-era church at Hrísrú mentioned in *Egil's Saga* and is among the best documented and perhaps the best-preserved evidence of early church construction in Iceland. As such it is of considerable significance for the comparative study of such buildings and religious culture throughout the northern lands.

BIOARCHAEOLOGICAL EVIDENCE

Bioarchaeological research plays a large role in our excavation strategy and is revealing a detailed picture of Viking-age life at Hrísrú. Skeletons excavated during the 2001, 2002 and 2003 fieldwork seasons are providing 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 degenerative conditions related to occupational (e.g. osteoarthritis) and nutritional stress (enamel hypoplasia), plus dental problems and infections (Fig. 6). The 2002 and 2003 excavations provided further evidence that skeletal lesions of the type associated with infectious disease, heavy labour and traumatic injuries were common in this conversion-period population. 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. The pathological lesions found in these early Icelandic skeletons imply harsh living conditions.

Some of the burial evidence from Kirkjuhóll agrees with social practices described in the sagas and other Old Icelandic writings. For example, we found a reburied, disarticulated skeleton placed directly against the S. church wall at Kirkjuhóll (Fig. 6; see also Fig. 5, Feature 4 and the reburial on Fig. 3). This reburial of a young man in his twenties included an intriguing carved whalebone artefact of a kind spoken of in the sagas as a talisman for warding off sickness. In fact, this young man was mortally ill. The skull shows several pathological changes, including evidence of a brain abscess in the area of the right temporal bone, which spread to the surrounding bone. These changes are consistent with tubercular infection, making this skull one of the earliest pieces of evidence for tuberculosis in Iceland. The remains tell us a good deal more about this young man, who must have been unusual looking. He had an extra incisor in the middle of his upper jaw, four molars on the left side of the lower jaw, and a small benign tumour inside his nose. He also had lesions in the vertebral column and on the femoral head, suggesting that he may have been injured in a fall or similar traumatic episode, resulting in damage to the hip and spine. Activity-related changes in the arms and shoulder suggest that he performed strenuous activities involving heavy pulling.

Violence was also a factor at Hrísrú. This reality is observed in the skeleton of an apparent homicide victim (Feature 2, Fig. 5). This skeleton of a man in his forties was interred immediately to the east of the chancel foundation. The skull shows massive cranial trauma with a gaping wound in the left parietal and a slice



FIG. 6

The skull of a young man about 25 years of age found among a pile of his disarticulated bones reburied just outside the southern wall of the choir of the early church at Hrísbú. The skull shows several pathological changes, including lesions associated with a chronic ear infection that resulted in a brain abscess and probably death. The site of the abscess can be seen as the darkened area within the skull.



FIG. 7

Photographs of the cranium of the Feature 2 burial showing parietal (top) and occipital (bottom) injuries made by bladed weapons such as an axe and possibly a sword. These were mortal wounds.



FIG. 8

Calcined human cranial vault from Hulduhóll Trench EH 2001–2. Four cranial pieces probably from the same person, a man or woman between the age of 30 and 40, were found during the 2001, 2002 and 2003 excavations.



FIG. 9

Looking north-eastwards up to the Hulduhóll mound.

of bone removed from the occipital bone. These wounds caused rapid death. As the cuts in the skull show (Fig. 7), the weapons used on this victim were of excellent quality. Little evidence of actual violence has been found on Icelandic skeletal remains from the Viking Age, and there has been a debate in Iceland for many years concerning the quality of the weapons available during the early centuries. From this skull, at least, it can be stated that one or two people had very good weapons. The wound on the top of the head was probably caused by an axe, as evidenced by the size and the isolated region of the cut, while the wound to the rear

may have been the result of either an axe or a sword. Possibly the killing was carried out by two assailants, and, given the nature of the blows that came directly down on top of the skull, the victim may have been executed.

Such evidence of violence at the Mosfell/Hrísbrú site is consistent with descriptions of feuds found in the Icelandic sagas.²¹ One saga in particular, *The Saga of Gunnlaug Serpent-Tongue*, offers an account that specifically describes the Mosfell/Hrísbrú site and corresponds, at least in a general way, to the archaeological evidence for violent death at the site. According to the saga (see the passage quoted at opening of this article), around the year 1020 the chieftain Illugi the Black raided his rival Önund, the chieftain at Mosfell, and caught and executed one of Önund's kinsmen, a man named Björn.

HULDUHÓLL: A CREMATION SITE

At the seaward entrance to the Mosfell Valley, the impressive Hulduhóll mound (Fig. 9) looks west out to the ocean and is the most prominent natural feature on the northern side of the valley as one enters, heading inland. By nature, the mound is ship-like with its western tip (prow) formed by an outcropping of the underlying basalt. Widest at mid-section and narrowing toward the eastern end, the mound is somewhat flattened in the centre or high point, where especially lush grass grows. When standing in the centre portion of the mound and looking out over the western tip, the Hulduhóll points directly to the ship-landing in sight below on the coast at the estuary in Leirvogur Bay.

At some time in the past, the western part of the knoll was slightly modified by humans, with gravel fill brought in and for a length of 4 m laid to a depth of up to 20 cm in order build up and level the shallow dip between the basalt prow and the central highpoint of the mound. The gravel fill was held in place on both the northern and southern sides by carefully laid outer rims of large slab-like curbstones. The Hulduhóll mound thus has several major and separate components. One, the western tip, is artificial, built by humans and composed of gravel fill, seemingly to emphasize the natural ship-like nature of the mound. Another is the centre of the mound, the high-point easily visible throughout the valley. As with the neighboring Kirkjuhóll mound, modern agricultural machinery has never been used on Hulduhóll. There was a reason why this mound was left alone. The name Hulduhóll means 'Hidden People's Hill', and local folk legend contains the interdiction that this home of the elves was not to be disturbed. All these aspects attracted our interest.

Both cremations and inhumations were common forms of burial in Viking-age society in Scandinavia itself, but despite a search by archaeologists for almost a century no evidence of cremation has been found in Iceland. There is even a small literature about the non-existence of cremations. For example, the multi-volume History of Iceland (*Saga Íslands*), written by the major specialists at the University of Iceland, contains a magisterial article on the archaeology of early Iceland.²² The

²¹ Helgi Thorláksson, 'Hvað er blóðhefnd?', 389–414 in G. Sigurdsson, G. Kvaran and S. Steingrímsson (eds.), *Sagnahing: Helgadó Jónasi Kristjánssyni sjötugum 10. apríl 1994* (Reykjavík, 1994); Byock, op. cit. in note 13, 207–51.

²² Kristján Eldjárn, 'Fornbjóð og minjar', 99–152 in Sigurður Línal (ed.), *Saga Íslands*, 1 (Reykjavík, 1974).

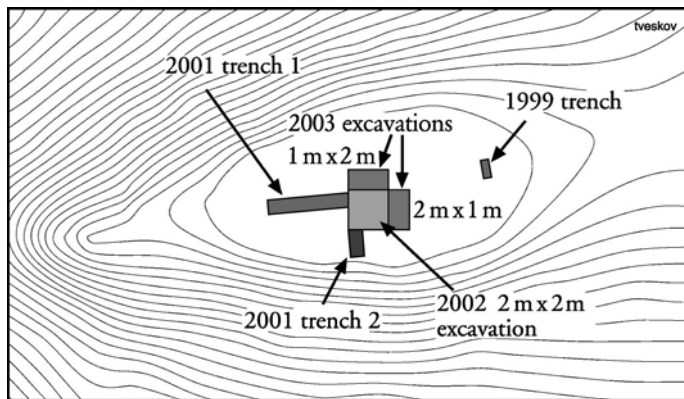


FIG. 10

Hulduhóll (Elfin Hill) showing the series of excavations from 2001, 2002 and 2003 on top of the ship-like cremation mound. The site contained dense concentrations of charcoal and ash with fragments of burnt human and animal bone and remnants of iron, copper and bronze artefacts. Contour intervals = 20 cm.

article was written by Kristján Eldjárn, Iceland's foremost archaeologist and expert on pagan burial customs. Kristján, who was Head of the National Museum and President of Iceland, includes a separate section on cremation and inhumation burials, which opens with the following statements:

The issue of burial cannot be understood without noting a remarkable factor: in the approximately three hundred pagan burials, of which there is some knowledge, nowhere is there any evidence of human cremation. Never has anything been found in Iceland which points to the fact that dead people have at any time been cremated. Something may still be found, but the evidence is entirely that this form of burial custom was not at all common here in this country. This fact is remarkable when one considers that during the Viking Age cremations are known from everywhere else in the Scandinavian lands, that is the period of Iceland's settlement and its saga age. In fact, it is a custom that is known in the north as far back as the Roman Iron Age.²³

On the central highest point of this knoll, we excavated a Viking-age cremation site. It was found in the 25 cm of soil covering the basalt core of the knoll. This feature included dense concentrations of charcoal, lenses of ash, four cremated human skull fragments (all belonging to same individual, see Fig. 8) and many small pieces of bone, small fragments of a worked bronze sheet, as well as many small iron fragments, including riveted sheets of iron from larger artefacts. As noted, the Hulduhóll knoll resembles a ship (Fig. 10), and this natural feature had, we surmise, something to do with the choice of this mound as a cremation site. Five small boat burials have been found in Iceland.²⁴ None of these show evidence of cremation, although such burials from pagan times are well-documented elsewhere in the Viking world.²⁵ The evidence gathered from successive MAP excavations from 2001 to 2003 makes Hulduhóll the first scientifically documented evidence of cremation unearthed in Iceland.

²³ Ibid., 138. Nothing had changed by the re-publication in 2000 of Kristján Eldjárn's major work, *Kuml og haugfé*, 2nd ed., ed. Adolf Friðriksson (Reykjavík, 2000), 290: 'Here in Iceland cremation graves have never been found.'

²⁴ Þór Magnússon, 'Bátukmlið í Vatnsdal', *Árbók hins íslenska fornleifafélags* (1966), 1–32. For a description of this boat burial in the West Fjords, see Byock, op. cit. in note 13, 294–6.

²⁵ M. Müller-Wille, 'Boat-graves, old and new views', 101–10 in O. Crumlin-Pedersen and B. Thye (eds.), *The Ship as a Symbol in Prehistoric and Medieval Scandinavia* (Copenhagen, 1994).

The human cranial vault fragments found on Hulduhóll all show clear evidence of burning. During the cremation of a body at high temperatures, pressure builds up in the cranial vault, exploding it into characteristically small fragments.²⁶ The separation of the four skull fragments by as much as 2.5 m in the Hulduhóll cremation feature is typical, as skull fragments are separated both by the initial bursting and again if the ashes are stirred. The cranial fragments from Hulduhóll are all calcined (reduced to their mineral constituents through burning), having been exposed to a comparatively high temperature (c. 800°C) for a considerable period of time, thus not the result of a casual fire. The four calcined skull fragments from the Hulduhóll cremation mound were analysed at the University of Oslo School of Medicine and found to be from the same person. Based on the closure of cranial sutures, this person appears to have been between about 30 and 40 years of age. The gender could not be determined. It was not possible to determine if the many other very small bone fragments mixed among the ash, charcoal and soil were animal or human.

The inclusion of metal grave goods such as those found on Hulduhóll is a common feature of pagan burial and cremation ritual. The metallic finds were analysed at the University of Oslo and in Los Angeles at the Getty Museum laboratories between 2001 and 2003, where it was determined that the working and annealing techniques of the bronze fragments and the riveting method employed in the iron sheets are consistent with Viking-age metallurgical procedures.²⁷ Several AMS radiocarbon dates on small charred twigs found within this cremation feature indicate that this cremation took place between about A.D. 990 and 1020.²⁸ This would put the event just before or shortly after the Christian conversion and right about the time that the church was built.

As the first Viking-age cremation site identified in Iceland, the discovery stirred considerable interest among archaeologists and historians, both in Iceland and abroad. In part the interest is due to the long and heated debate among Icelandic historians and archaeologists about the origin of the Icelanders. Over the years the debate has been stirred by the continued absence in pagan Iceland of evidence of cremation graves, otherwise common in the West Norse, i.e. Norwegian, cultural area.²⁹ The historian Barði Guðmundsson argued that the absence of normal Norwegian cremation burials in Iceland was an indication of the East Norse origin of the Icelanders rather than the usually accepted West Norse provenance of the settlers.³⁰ According to this theory, chieftains from West Norway immigrated to Iceland in the face of the rising power of Norway's conquering and first unifying king, Harald Fairhair (c. 865–930). For Barði, many of the *landnámsmenn* were only nominally Norwegian. Rather, he argues that they were originally of East Norse origin, that is Danish and Swedish Vikings who settled on the west coast of Norway perhaps as early as the 7th century to better control the

²⁶ P. Holck, *Cremated Bones: A Medical-Anthropological Study of Archaeological Material on Cremation Burials* (Oslo, 1997).

²⁷ D. Scott, 'Appendix A: examination of a small Icelandic copper alloy fragment from Hulduhóll', 63–4 in J. Byock et al., op. cit. in note 18.

²⁸ J. Byock et al., op. cit. in note 18.

²⁹ Holck, op. cit. in note 26.

³⁰ Barði Guðmundsson, *Uppruni Íslendinga: safn ritgerða* (Reykjavík, 1959).

trade along Norway's coast and to raid as Vikings in the west. Barði's views explain many cherished anomalies such as the lack of cremation mortuary rituals, and the debate surrounding his views has played such an important role in modern Icelandic historiography that, without having to mention Barði by name, Kristján Eldjárn argued in his article in *Saga Íslands* that: 'This absence of cremation graves in Iceland cannot possibly be explained by the concept that the settlers came from some portion of Scandinavia where the cremation of corpses was altogether unknown. Such a land did not exist.'³¹

CONCLUSIONS: A LANDSCAPE BETWEEN PAGAN AND CHRISTIAN TIMES

Our archaeological work in the Mosfell Valley is providing considerable evidence of extensive habitation from the period of the *landnám*, or settlement, through the time of the conversion around the year 1000 and continuing into the 11th century. A well-documented picture of complex pagan and Christian habitation and interaction in early Iceland is emerging. At Hrisbrú, archaeology and written texts appear to corroborate one another, attesting to the importance of the locale as well as the viability of examining physical remains in conjunction with Icelandic medieval sources.

A valuable aspect of the work at Hrisbrú is its relevance to understanding the use and possible hybridization of mortuary and religious practices during the conversion period. There has been considerable speculation in Viking Age studies about the customs, cultural values and religious behaviour of Scandinavians during the conversion period. Much points to a transition at specific cultic sites from pre-Christian to Christian times, but there has been relatively little clear archaeological evidence. The results of our Mosfell excavations may play a role in this international discussion. The close juxtaposition of a pagan cremation at Hulduhóll and a Christian church and graveyard at Kirkjuhóll provides us with the remains of an exceptionally complete religious and mortuary site, offering a unique window for viewing the process by which one Viking-age population converted to Christianity. That a conversion-period church at Kirkjuhóll was constructed close by the pagan mound at Hulduhóll is highly informative about the social and cultural customs of the conversion period, and today a site with two mounds in such well-preserved condition is most unusual. The evidence suggests a mixed Christian and pagan community living side by side at the time of the conversion.

The Mosfell/Hrisbrú site is especially relevant for an interpretation of Icelandic history because it was the home of people about whom, until now, we have only had written documentation. Grim Svertingsson is a case in point. He lived there at the time of the conversion to Christianity and was the law-speaker of Iceland in the years immediately following the conversion. Grim was married to Thordis, the daughter of the prominent chieftain family at Borg in Borgarfjord, and he was one of the most influential men in Iceland at the time. Based on written sources, historians have long held that many powerful Icelandic chieftains, such as

³¹ Op. cit. in note 22, 138.

Grim, switched to Christian practice in order to maintain their status. To this end, around the year 1000 many chieftains were said to have constructed family-owned chapels in order to establish sanctified ground within their home estates.³² But do we have much evidence of this?

The archaeology at Hrísbú together with written records suggests that, beginning in the *landnám* era, the site was a chieftain's establishment and occupied a commanding place in the social arrangements and cultural practices of the inhabitants of the Mosfell Valley. *Egil's Saga* tells us that immediately following the conversion, Grim Svertingsson constructed a private church and grave field at Hrísbú. The physical remains that MAP has unearthed at Hrísbú agree. The land ownership, identity, and status established by the *Mosfellingar*, the leading family of the Mosfell Valley, in the 10th century following the settlement period were reaffirmed at the time of the conversion through the construction of this church. The stones and graves at Hrísbú document a central feature in the cultural and physical landscapes, while the physical remains from the graveyard at Hrísbú offer considerable information on the health, living conditions, and the presence of violence among the people living on the Mosfell/Hrísbú lands. These physical remains evidence the attempt by a prominent chieftain family to negotiate a favourable place for its members in the changing religious and ultimately social environment of the first two centuries of Icelandic life. Our research suggests that the mortuary and religious use of this Viking-age landscape thrived both before and after the conversion, with continued ancestral presence maintained in both pagan and Christian times.

³² Orri Vésteinsson, *The Christianization of Iceland: Priests, Power, and Social Change 1000–1300* (Oxford, 2000), 37–9. For a broad discussion of the early Icelandic Church see Jón Jóhannesson, op. cit. in note 14, 118–221.