

# the newsletter of Hurstwic

## SUMMER, 2012

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### Welcome, guest!

Welcome to Hurstwic's second newsletter. Again, we plan to bring you informative and interesting articles on Viking-age topics, focusing on topics related to our research and practice of Viking-age combat at Hurstwic. We hope these articles provide you with information not readily found in other sources. We thank you for your interest in our work, and we welcome your [comments and suggestions](#).

And, if you haven't already seen it, we invite you to watch the [We Are Hurstwic](#) video which explains our goals, our mission, and our activities.



### Going Berserk

By Mike Cicale, Hurstwic student

Have you ever gone berserk? In the Viking age, a *berserkr* was a fearsome, ferocious warrior, but the available sources don't quite agree on what made someone a berserkr. In the sagas, there seem to be several kinds of fighters who were called berserks.

Some berserks were valiant warriors, admired by the people fighting alongside them. The berserks who served King Haraldr hárfagri (fair-hair) of Norway defended the bow of his ship in the battle at Hafsfjörðr, where the king consolidated his rule over Norway. *Vatnsdæla saga* says that these berserks used wolf-skin cloaks (*vargstakkr*) as their mail shirts (*brynja*), and so they were called Wolf-Skins (*úlfbéðinn*). Hornklofi said in his poem about the battle:

Their berserkers bellowed  
as the battle opened,  
the wolf-skins shrieked loud  
and shook their weapons.

*Haralds saga hins hárfagra*, chapter 18.

Other berserks entered a trance-like rage (*berserksgangr*) and became endowed with extraordinary strength. In this state, they were more like animals than humans. Swords could not bite them, nor could fire harm them. Their gaze could blunt an opponent's weapon, and they howled like animals and bit their shields. This image of a berserkr biting his shield has been preserved in a 12th century chess piece, found at the Isle of Lewis. Viking law prohibited berserksgangr (*Grágás K.7*) and required those present to restrain someone in berserksgangr.

Some berserks were "shape changers" (*hamrammr*). The Icelandic word suggests not that they took on the shape, but rather, the characteristics of wild animals. In battle, their ferocious strength made them unstoppable, but when the frenzy wore off, they were exhausted and powerless and had to lie down to rest, according to *Egils saga*. *Ynglinga saga* says that these skills were first taught to men by Óðinn, the highest of the gods.



Some people believe that the berserk state was induced by medicinal herbs or alcohol, but there is little in the sagas or other sources to suggest that external agents were needed. In at least some cases, the berserk rage came over men with little warning, such as when Skallagrímr Kveld-Úlfsson was playing a ball game with his son Egill and his friend Þórðr, as told in *Egils saga*. When the game turned against him, Skallagrímr picked up Þórðr in a rage and threw him down, killing the boy. He picked up Egill to do the same, but an old family servant, Þorgerðr brák, reminded Skallagrímr that it was his son he had in his hands. He tossed the boy aside and chased after Brák instead, killing her.

Some men were ashamed by their berserk tendencies. *Vatnsdæla saga* says that Þórir Ingimundarson

bemoaned the fact that a berserk fit came over him when he least wished it, and he asked his brother to help him overcome the tendency.

In some sagas, berserks were utterly evil men, travelling the countryside challenging farmers to duels, with their wealth, their property, and their wives at stake. In many sagas, these berserks are stock characters: villains for the saga hero to vanquish. *Eyrbyggja saga* tells how Styrr tricked two berserks who had become troublesome, killing them and burying them along the path in the lava they had painstakingly constructed a part of Styrr's ruse to get rid of them. The grave mound is still visible today along the path (right).



In some sagas, any strong fighter was called a berserk, even though there is nothing to suggest that a battle frenzy came over these warriors.

In our Hurstwic Viking practice, we try to train with a level of intensity that approaches, to the best of our ability, the intensity used by Viking-age warriors. We have no berserks (that we know about). No one yet has been seen entering *berserksgangr*. But at least some of our training is at a very high intensity, using exercises such as the “berserkur drill” based on high-intensity interval training, and the “Hurstwic shield” drill that leaves many students gasping for air after the short duration of the drill.



These drills are grueling and seemingly endless, but they teach us to fight without a let-up, regardless of what is happening. After the first few rounds, you feel your teeth begin to chatter, your body to shake, your head to swell. You let out a roar like a wild animal and break the waster clean in two across the pell! Maybe you’ve gone berserk after all!



## Two-Handed Use of Viking Swords

By William R. Short, Hurstwic Instructor

The sagas tell us that Viking warriors sometimes used their swords two-handed. When Egill met Atli in a duel over some disputed property:

Then they both grabbed their swords, closed in and exchanged blows. Atli did not yield. They struck hard and fast and their shields soon began to split. When Atli’s shield was split right through, he tossed it away, took his sword in both hands and hacked away with all his might. *Egils saga*, chapter 66



8th century sword

But how did Atli perform this move, given that Viking swords have a grip big enough for only one hand? Most surviving Viking swords have grips big enough for even the most ham-fisted Viking to grasp comfortably in one hand, but none have grips large enough for two hands to fit on the grip. In fact, some Viking swords have grips so small that, today, it might seem difficult to fit even a single hand around the grip. It has been speculated that these swords represent blades that have been repaired many times, since each time the pommel and upper guard were removed and replaced and the tang peened back down, some small amount of the tang was lost, resulting in a shorter grip.

to fit on the grip. In fact, some Viking



Regardless, how did Atli grip a one-handed weapon with both hands to deliver full power to the blade? There are many possibilities. For example, he could cup the pommel with the second hand. Or he could double up on the grip, placing one hand over the other. These and other alternatives provide a modest increase in power when we’ve put them to the test, but not the dramatic increase suggested by the sagas.

What we found that makes more sense is to cup the second hand over the wrist of the weapon hand and use it to pull the weapon through the cut (right). As with any attack with a Viking sword, the power comes from the central core of the body. The second hand doesn’t grip the wrist, but simply helps to pull the weapon through the cut, resulting in more power being delivered to the blade. Because the second hand



merely cups, the second hand can be released quickly to do more work as soon as the blade passes the target.

This two-handed grip results in fearsome cuts, more powerful than can be delivered with a single hand. And it results in body mechanics that give a fighter many options. It’s a move that has become a regular part of our cutting practice at Hurstwic, whether the cuts be to the pell, to focus pads, or to a partner in sparring.

We can’t tell from the saga text how Atli used his sword two-handed in his duel with Egill. But however he accomplished the move, it didn’t help him in the end. When Egill’s shield was destroyed from the powerful blows, he threw away sword and shield and ran in to grapple. Egill took down Atli, and then Egill killed him by biting through his throat.



## Iron Smelting in the Viking Style

by [Jeff Pringle](#), [Swordsmith](#)

In my quest to understand the perspective and motivations of the artisans and craftsmen of the Viking Age, I've long sought to replicate the processes and materials they used. Accordingly, I've built on the research and experiments of [Lee Sauder](#) and Skip Williams to smelt iron using bloomery furnaces similar to those used in the Viking age.



I've been building my furnaces from a traditional mix of clay and sand that has many benefits over modern furnace materials, and this approach has resulted in iron and steel that is easier to refine. Processing and using this material has given me many insights into the how and why of Viking weapons.

For most of the history of the Iron Age, bloomery furnaces were made from (or lined with) a mixture of sand, fiber (typically horse dung in which undigested hay provided the fiber), and clay, mixed with water. This material is easy to work with and has the right balance of structural and insulating properties to contain the smelting processes. The walls radiate enough heat to keep the inside from melting into the slag excessively, which can be a problem with furnaces made from modern firebricks. Once a furnace wears out, it can be easily recycled by crushing it up and mixing in fresh clay.

The clay stack is built around a tapered wooden form which is removed as the clay mix dries, and wood is burned inside to complete the drying process.

To begin the smelting process, the furnace is warmed up with a natural draft fire to prevent damage from thermal shock. Then the air blast is started, and the bore is filled with charcoal. The blower is adjusted to control the burn rate as ore and charcoal are added together at about a 1:1 ratio.



The local ore here in Northern California is magnetite sand, which is too rich in iron and too fine in size to run through the furnace like the bog ores that were commonly used in Scandinavia, so we mix it with silica sand and a binder to make pellets.

After a few hours, a section of the lower furnace is removed and the bloom is levered free of the furnace walls. Once it is pulled out, the surrounding mass of slag and charcoal is knocked off the bloom and the metal is compacted with sledges to consolidate the material.

The fresh bloom is refined by folding it to remove impurities and homogenize the material. Cleaner, more highly-refined material is created by repeating the folding process, and carbon can be added to the iron to create steel.

Artifacts from the Viking Age show varying degrees of refinement in the metal depending on the type of tool or weapon and which part of the tool you're looking at. Axes often have very rough material in the body; iron with fairly large slag inclusions that indicate minimal working of

the bloom iron. The edge material is usually higher in carbon and has much smaller slag inclusions.

Spears have to be forged more extensively to create the socket and so are made of cleaner material, while the fine edges of knives and swords must be made from material that is virtually free of slag, which can

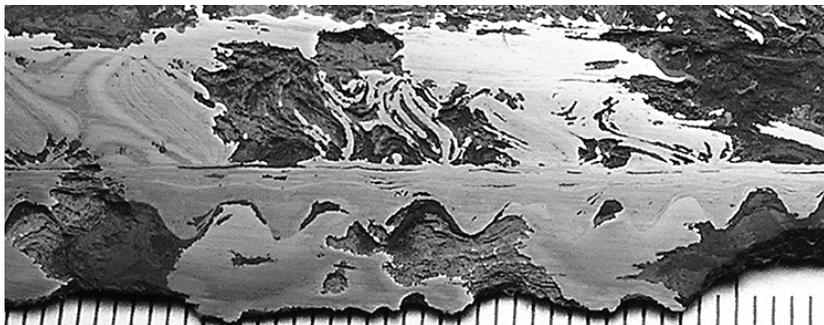


act as a point of weakness from which cracks can propagate. The back of a knife or the center of a spear or sword, even when pattern-welded, is made of rougher material than the edge.

These variations are visible in the Viking-age spear head shown in the photo below. It was prepared by sanding, polishing, and etching to reveal its composite structure. The edge material (at the bottom) is very clean, and by comparison, the bars in the pattern-welded area (top) show an increase in the size and number of slag inclusions.

Our experimental smelts are

now well-enough controlled that we can create material fine enough, and in large enough quantities, to fabricate Viking-age replica weapons where all steps, from ore to finished product, use the processes thought to have been used by Viking-age smiths.



## The Franks vs. The Vikings

By Chris Paoella, Hurstwic student

In the Viking lands, few men could be described as professional soldiers. Instead, they were farmers, traders, and craftsmen who were also part-time warriors engaged in feuds and in seasonal raids. In some cases, young men served with a king or an earl to make a name for themselves.

Their occasional opponents, the Franks, were in similar circumstances. The Franks were not like the professional soldiers of ancient Rome; they too were farmers and craftsmen. While internal conflict was endemic during the middle Carolingian dynasty, warfare was not the local man's primary occupation. Those who resisted the Vikings in Francia were ordinary people, called upon in times of extraordinary danger. As we study the Vikings and the manner in which they fought, we must bear in mind their opponents, as one necessarily informed the other. And so, who were the Franks?

### Treaty of Verdun (843)

- Charles the Bald
- Lothaire
- Louis the German



The Franks were the peoples who inhabited the areas that today encompass Western Europe also known by the imprecise label “Francia”. During the ninth century, while politically unified under Charlemagne, Francia was still fragmented socially. Each region and locality was ruled by a count who administered law and justice in the name of the “Emperor”, but in reality was semi-independent in his own right. Their incessant petty wars were exacerbated by the death of Louis the Pious (right) in 840, and the subsequent splitting of Charlemagne's empire. As central authority splintered, Viking raids penetrated deeper into the heart of Francia, following the waterways. Expansive organized resistance was untenable.



In response, local lords raised levies to defend local communities, organized around charismatic military leaders called “dukes”. The muster consisted of local men armed with household weapons similar to what the Vikings themselves used: axes (right), spears, and the occasional sword. The men knew the terrain,



were highly motivated to defend their homes and families, and could be mobilized relatively quickly given the standards of the day. However, they could not remain in the field for long as the harvests required attention. Since they were not professional soldiers, their discipline was unreliable, and their ability to engage in complex military strategies and formations was severely curtailed.

If the duke was killed, the levy might disintegrate. If the levy was raised for an offensive campaign, it might ravage the countryside looking for supplies and spoils. If the levy was defeated, it might disintegrate into brigandage, with roving bands of armed men terrorizing the local populace.

In some ways, the Franks mirrored their Viking opponents; neither were professional soldiers. Both fought with similar weapons that were generally easily and economically manufactured. Both fought in parties organized around charismatic and successful leaders, who were recognized by their men as skilled in battle and likely to bring them honor and the spoils of war.

As we study Viking fighting moves, we must also keep in mind the likely moves used by the opponents of the Vikings. Across a century and more of conflict, the Vikings and the Franks could not help but influence one another.

## Egill Skallagrímsson: Poet and Warrior

By Kevin Scott, Hurstwic student

Egill Skallagrímsson was one of the most enigmatic and complex heroes of the Saga Age—a skilled fighter with berserker-like tendencies, yet capable of some of the most beautiful and complex skaldic poetry to survive from the Viking age. Egill approached both with a skillful craftiness and high regard for honor. His story is told in *Egils saga*.



He grew up and lived at the farm at Borg (left) in west Iceland. He was descended from a family whose members included half-trolls and shape-shifters. His adventures carried him from Iceland to the Baltic, with stops in the royal courts of England and Norway.

It was Egill's inventiveness and his improvisational skills that enabled him to surmount overwhelming odds time and again. His ability to improvise and find an unexpected move allowed him to succeed, whether he fought with words or with weapons.

While in Norway, Egill was able to save himself from the king's fury by composing a poem of praise to the king overnight. Egill was rewarded with his head, and he later composed another verse praising his craftiness:



Now as before I rule  
the noble seat that my helmet,  
the sea-lords hat, is heir to,  
in spite of the wound-dispenser.

Similarly, Egill improvised when he defeated Berg-Önundur, a rival in a lawsuit over an inheritance. When Egill learned that Berg-Önundur was at a farm on an island off Norway with few others to support him, Egill landed on the island with some of his men.

It was evening, and Egill came across some boys from the farm watching over the livestock, protecting the animals from a marauding bear. Egill told them that he had seen the bear in the woods nearby and suggested they run back to farm and tell the men where the bear was hiding.



Egill hid in the shrubs, and when Berg-Önundur approached, he sent his two companions ahead to keep the bear from escaping. Egill drew his sword, and hung it from his wrist by a strap on the hilt.

But Berg-Önundur discovered it was Egill, and not a bear, hiding in the bushes. They rushed each other, throwing their spears at one another. In the saga, the weapon each man uses is called a *kesja* in some instances and *höggspjót* in others. How these differed from normal spears is not known.

Egill deflected Berg-Önundur's spear with his shield, but Egill's spear stuck in Berg-Önundur's shield, making it too heavy to hold up. With a flick of his arm, Egill's sword was in his hand, while Berg-Önundur was still drawing his sword. Egill's first blow ran him through and his second blow nearly took off Berg-Önundur's head.

It was in these situations that Egill's true skills prevailed. He was clever and inventive, taking advantage of what was available to improvise a solution to win the fight and to save his head: his "cliff my helmet rests upon", as he called it in his verse.

Viking combat was direct, aggressive, and resourceful. In Hurstwic's Viking combat training, we train using moves described in the sagas, such as Egill's sword on a loop. And we also train with drills that encourage the kind of quick-thinking improvisation that helped make Egill so successful.

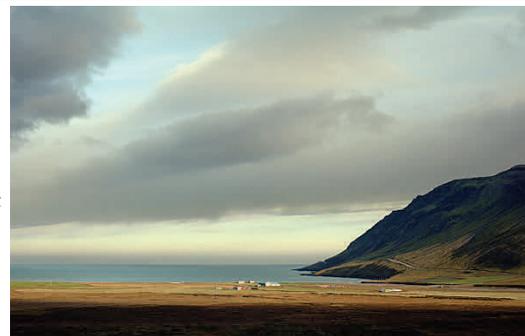
## Cold-Water Swimming in the Viking Age

By William R. Short, Hurstwic instructor

Grim was a very fast runner. He ran forward from the group towards Gunnar, planning to land a blow on him. Gunnar saw this, dived into the sea and started swimming. Grim saw that he could not attack him with a weapon, but he threw a spear at him and it stuck in Gunnar's left hand. Gunnar grabbed it and pulled it out and swam out into the bay. Gunnar crossed the bay and came to land south of the scree at a spot now called Gunnarsdaeld.

*Flyjótsdæla saga*, chapter 18

The sagas tell stories of men and women who swam long distances in frigid water in life and death situations. Gunnar Þiðrandabani swam across the bay at Njarðvík (right) to escape his pursuers. Grettir swam from his island hide-away at Drangey, 4 miles (6 km) across Skagafjörður to the farm at Reykir after his fire had gone out (*Grettis saga*, ch. 75). Helga jarlsdóttir swam twice in one night from the island Geirshólmr across Hvalsfjörður, a total distance of 3 miles (5 km) carrying her children on her back one at a time to protect them from an attack (*Harðar saga*, ch. 38). What's it like to swim in frigid water with no modern protection?



Some Icelanders (and guests) regularly swim in icy water at the beach at Nauthólsvík in Reykjavík. Although the distances swum are measured in meters, rather than kilometers covered by the saga heroes, there surely are some parallels: some similarity to the shock and pain felt when the body enters water that's near the freezing mark. Swimming causes even faster heat loss, because the blood being pumped to the limbs to support the physical exercise quickly gets cooled. The body core temperature drops, resulting in mental confusion, hypothermia, and death. Modern wet suits and help reduce heat loss, but Gunnar had none of this protection. He was wearing nothing but his linen underclothing because his pursuers caught up to him on a snowy night when he left his tent to relieve himself.

Grettir wore woolen clothing, including a covering for his head, and he had his fingers wrapped together. When he arrived on shore, he warmed himself in the hot-spring bath at Reykir, which is the recommended way to warm the body's core after immersion in cold water. Swimmers at Nauthólsvík do the same today.

The sensation of entering near freezing water is hard to put into words. Fear. Pain. And with the shore behind me as I swim for open water, panic that I'll lack the energy to turn around and swim back to shore. It's hard to conceive how the saga heroes managed to enter water under these conditions and then to come to shore again on the other side.

