Illustrations drawn on replica buildings on the site, models of the site, re-enactors, shots from filming the Imax film ‘Vikings!’ and other types of illustrations. Unless otherwise noted, photos are by the author or Rob Ferguson.

More than other nations, North Americans are enthralled with the Vikings and Vinland, more so than even in the Nordic countries. In the Nordic countries we tend to use the lure of the Vikings more to attract tourists than worshipping the past.

Why this fascination with Vikings? It has to do with the romantic notion developed during the national romanticism of the 19th century and its view of Vikings. Vikings were seen as bold and enterprising freedom-seekers, setting up a society of equals. They have been pictured as self-reliant defenders of personal rights, members of a republic ruled by law and order, where women were strong and independent. Their society was believed to be permeated with an intrepid sense of exploration and adventure. The Vinland voyages to North America were seen as embodying the essence of this perceived Viking spirit.

While today we have a much more facetted view of Viking society, recognizing that it was highly stratified, its accomplishments, and Vinland continue to fascinate. Even more than the family sagas, the Vinland sagas are exciting narratives of discovery, voyages to far-flung shores and meetings with people of another ilk. The descriptions are so vivid, and the progression so logical, that we are easily seduced into seeing the Vinland sagas as unadulterated truths.
In scholarly circles, mindless acceptance of the Vinland sagas as historical documents has long ceased. Literary historians have argued that the family sagas, including the Vinland sagas, are more creative art than history, based on inspiration from the European continent. To the extent that they represent any historical reality, that reality would lie in the 13th and 14th centuries, not in the Viking Age. Vésteinn Ólason has pointed out that we see the sagas through a double filter: the 10th century from the point of view of the 13th century, and the 13th century through a modern lens. These views have been modified by others, but most
believe that Vinland's geographical location can never be established with certainty. Some believe that it did not exist at all but was a myth based on St. Brendan and other legends. Today, with the L'Anse aux Meadows site in Newfoundland we will try to clarify the reality of the Vinland world.

Gísli Sigurosson's *The Medieval Icelandic Saga and Oral Tradition* makes it clear that the Vinland sagas have to be seen in light oral traditions. They were not frozen into a set text but were in a constant state of flux and changed according to the audience and occasion. Old material was mixed with new and subject to specific interests. The purpose of the saga affects its content. The American-English literary historian Joe Allard has compared the oral traditions to jazz performances, which, although based on a general theme, contains individual improvisation, as opposed to a text version which is more like a classical symphony adhering to a score.
But as an archaeologist, I would like to argue that by adding the archaeological evidence from L’Anse aux Meadows, and consider new findings in Greenland and Iceland, plus take into account modern native American archaeological knowledge, we can go a step further. Archaeology gives us a direct line to the world of 11th-century Norsemen. Then, if we add modern historical research plus anthropological analyses into the mix, we have the tools to tell us what the Vinland reality was, and L’Anse aux Meadows furnishes the key. I will elaborate later.

A quick recapitulation of the two main versions of the Vinland sagas, the GS and ERS. They are obviously based on the same stories, but they differ in the details.

The GS has one discovery and five expeditions:
- Bjarni, the discoverer
- Leifr, the first explorer and main figure
- Þorvaldr who is killed by a native
- Þorsteinn who gets lost and never makes it
- Karlsefni and Guðrøðr who have baby Snorri
- And finally, the evil Freydís, with husband Þorvarðr & two unlucky Icelandic traders whom she kills

ERS has one discovery and two expeditions:
- Leifr, the accidental discoverer, who finds Vinland when he is blown off course on the way home to Greenland from Norway.
- Þorsteinn who never makes it
- Karlsefni and Guðrøðr who have baby Snorri. With them are Þorvaldr, who gets killed by a native, and Freydís’ husband Þorvarðr and Freydís herself, and two Icelandic traders.

Gísli’s work takes us a long way towards reconciling the discrepancies between the two sagas. Clearly they
describe the same events. Ólafur Halldórsson and others have shown that there was a special purpose to ERS that made it twist the story. At the time the saga was written down there was a movement underfoot to have a descendant of Karlsefni and Guðrún declared a Saint. Having prominent ancestors increased his chances. Thus the roles of Karlsefni and Guðrún were magnified.

Leifr is pushed aside and Karlsefni becomes the big cheese. He simply replaces Leifr and all the other expedition leaders, combining them into one megaexpedition led by himself and Guðrún.

In ERS Straumfjörður, Fjord of Currents, is an exploration base in northern Vinland. From there they made expeditions in all directions during the summer, retreating to Straumfjörður for the winter before returning to Greenland the next or another summer.

Straumfjörður is an attractive place, with tall grass, plenty of game, and off-shore islands so covered with seabirds and eggs that there was hardly room to set foot. Although the winter proved difficult because the hunting failed, it was sufficiently mild for the livestock to go out all winter.

Hóp was a summer camp a long way south of Straumfjörður where grapes were collected and lumber harvested. It derived its name from the many tidal estuary lagoons protected by off-shore sandbars. The lagoons were so shallow that ships could be brought in only during high tide. It was a more hospitable area than Straumfjörður. Here were fields of self-sown wheat, forests with mausir wood, wood burls, and grapevines climbing trees. However, the area was inhabited by large groups of native people, and the Norse feared them.

GS has a third site, Leifsbúðir, Leif's Camp, but in my opinion, there was no one such place as Leifsbúðir. I see it as simply a literary consolidation of Hóp and Straumfjörður. The name may originally have been used either for Straumfjörður or Hóp, but it was erased in ERS together with Leifr himself. The combination of the
two places into one is evident. It is an exploration base like Straumfjörður but its physical characteristics remind of Hóp. Consequently, if we try to capture the reality behind the sagas, Leifr Eiríksson, if he was a historical person, was involved in both Straumfjörður and Hóp.

People have taken for granted that the Vinland voyages were a colonizing venture. They were not. If one reads the sagas carefully one can see that they were primarily first explorations to see what lay beyond Greenland, and then exploitation of what was useful to the Greenland colony. Settlement never went beyond that of a base for the collection and transhipment of goods to be brought back to Greenland.

All expeditions planned to return to Greenland. It was not families who came here but work crews hired for a particular voyage.

Leifr Eiríksson was first in charge, as his father’s deputy. After Eirík’s death, when Leifr succeeded him as chieftain, the expeditions were led by other members of the family, but the control still remained with Leifr as is evident from him offering to lend but not give his houses to the other expedition leaders.
The composition of the crew reflects the social organization of Icelandic-Greenland society at this time. At the top was the chieftain who authorized the venture for a share in the profits but who stayed at home to run the estate. The chief was first Eiríkr, then after his death Leifr, which is why Leifr stays home after he becomes chief.

The leaders could have merchant partners with whom they shared the profits. The crews were mostly men who could put in days of hard labour. A few women were along for female chores such as cooking, cleaning, and maintenance of clothes. There were also members of the leader's personal staff, and slaves such as Tyrkir, Leif's fóstri, a household slave who helped to raise the kids.

The profit motivation is clearly stated in both sagas. Lumber formed the major part of the goods brought back to Greenland.
The size of the expeditions varied between 30 and 60, possibly more, depending on the size of the ships. Living quarters were at first temporary buðir. When the Norse later decided to stay the winter, they built big houses. Even though livestock was brought, no structures are mentioned for the animals.

How do these tales relate to L'Anse aux Meadows? Many writers have dismissed L'Anse aux Meadows as peripheral in the Vinland story. Originally I did so myself. It was only after the L'Anse aux Meadows analysis was completed that I had a closer look at the sagas, and this changed my mind. Another factor was that new archaeological work in Greenland and Iceland has put L'Anse aux Meadows into a new perspective. L'Anse
L’Anse aux Meadows is in fact the key to unlocking the Vinland sagas. It is fairly clear that L’Anse aux Meadows is Straumfjörðr and Vinland the entire region around the Gulf of St. Lawrence. I will elaborate.

The site is located on the N tip of Newfoundland’s Northern Peninsula. Newfoundland is slightly bigger than Iceland. It lies about 2400 km from Leif’s home in Greenland. This is farther than one thinks. The distance between Greenland and Norway is only 200 km longer.

The site has been extensively excavated. C.Lindsay and B.Schönäsck for Parks Canada
The first excavation took place 1961 to 1968 after the Norwegian writer and explorer Helge Ingstad discovered the site in 1960. His wife Anne Stine Ingstad directed the excavations with the help of archaeologists from Sweden, Canada, and the US, and from Iceland, Kristján Eldjárn och Gísli Gestsson. I participated in a couple of these digs.

Further excavations were required after the site became a National Historic Site of Canada. They were first directed by Bengt Schönbäck, a Swedish archaeologist, and later by me. Bengt was the husband of Else
Nordahl who excavated an early structure in Reykjavik,

This work took place 1973 to 1976 and added a great deal of information and another 2000 artifacts. Among others they covered portions of a bog where wood was preserved.

In 1978 it became the first site to be declared a UNESCO World Heritage Site. It is open to visitors from June to mid-October and is visited yearly by c. 30,000 people. It contains a visitor centre with a giftshop, guides,
and archaeological displays,—occasionally it is used for lunch for visiting dignitaries, here for Vigdis Finnboðadóttir when she was President of Iceland.

Like the Vinland settlement, L’Anse aux Meadows never became a colonizing site. It is unique among Norse sites. So far there is no physical parallel. The only parallel is literary, Straumfjörður of the Vinland sagas. The fit is perfect with regard to location, type of buildings, activities, type of people who were there, the time they were there, and the length of stay.
The site is located on a shallow bay about 1 km south of the small village of L'Anse aux Meadows. It faces west and the Labrador coast. The name does not mean Jellyfish Bay as once was stated. The original form of the name is Anse à la Medée, French for Medea's Bay. The village began as a French fishing station and was probably named after a ship called Medea.

The Norse were not the only occupants of the site. There were four native occupations before the Norse and two after them. There was a special concentration on the southern shore of the bay, a bit away from the
Norse buildings. Ecological data indicate that the shifts in cultures go hand in hand with climate and resource changes. It appears that there were no native people on the site during the short time the Norse lived there.

The Norse site consists of the remains of 8 buildings. The buildings are on an old beach terrace about 100 m inland. The terrace encircles a bog where a brook winds itself to the sea.

The buildings are arranged into three complexes. All are dwellings except one small building away from the rest, on the other side of the brook. This is a hut where iron was manufactured for the first time in the New
World. The complexes are evenly spaced on the terrace, showing all were in use at the same time. What is really striking is that there are no barns or any structures for livestock, which are prominent on farms in Iceland and Greenland. The people here were not farming like the folks back home.

The buildings were of sod over a timber frame. Here you see the southernmost complex which has been reconstructed based on the archaeological footprints. They were substantial houses meant to be used year-round. Some of the walls are over 2 m thick.
The architecture is distinctly Icelandic of the style that developed after 930. Here are the reconstructions of Stöng and Eiríksstaðir as comparison. At L'Anse aux Meadows, the largest hall is the same size as Stöng. The others are double the size of Eiríksstaðir.

After 1000 years only the footprints remain, in this case the lower courses of sod.

There are no large trees now on the site, but in the 11th century the vast Newfoundland forests were nearby. They have since been gradually cut down for fuel and lumber.
The forests are softwoods of a rather scraggly nature, mixed with some birch.

Traditionally, the winters have been severe with much snow. Over the last decade, however, winter temperatures have sometimes been about 2°C higher, and then there was no snow at all. Ice core research indicates that the climate in the 11th century was equally warmer. This means that at that time the winters are likely to have been free of snow. This means that livestock could have grazed outside all winter as said in both sagas, perhaps on the same small islands a few m offshore where the people in the current village used to keep their cows.
The location of the site is unusual. It is in an exposed spot on the outer coast in an area where more protected coves and harbours are nearby. Access to the Strait of Belle Isle and sailing routes appears to have been of greater importance than shelter and comfort.

It is also easy to find when approaching from the north along the coast as it is the first time one meets with a substantial land mass on both starboard and port. And between the two coasts is Belle Isle surrounded with a peculiar set of currents. One local said that this is the only place where one can see the same iceberg go by twice!
There were 4 groups of artifacts. The largest consists of objects of wood found in the bog. Most of it was waste from wood working. Thanks to the preservation qualities of the bog, the wood was in almost pristine condition.

There were also broken and discarded objects, among them the floorboard of a small boat. Another piece—we don’t know what it was for, was of Scots pine. Scots pine is a European species which did not grow in North America before the arrival of Europeans in the 16th century.
There was an unusually high number of iron nails. Most were so rusted that it took X-rays to see their outlines.

and iron slag, the waste product of iron manufacture and smithing.
The distribution of the artifacts shows that these buildings were not the normal nuclear family farmstead. The artifacts show highly specialized activities, such as iron making, carpentry, and boat repair. This is a map of all the artifacts. Each colour represents one category of finds. The yellow is iron slag and other mementoes of iron manufacture. The red is slag from smithing, the green represents worked wood, and blue, discarded iron nails. As you can see, they form a pattern, each group associated with a particular complex. This also tells us that this is not a normal settlement site. On a normal site, we find a much wider range of objects spread more equally all over.
The iron slag was associated with the small hut away from the other buildings. Pieces of slag may seem dull, but the information one can get from them is amazing. We were able to tell the production method, the temperature at which the iron had been smelted, how much was made, its quality, and so on. This hut was excavated by former President Kristján Eldjárn in 1962.

The nails are of a particular interest. Nearly a hundred were found. Icelanders and Greenlanders used iron nails almost exclusively in boats, and when many nails are found on a site, they signal boat repair. The old rusty nails had to be removed and replaced. We think that this is why iron was produced on the site. It was needed for new nails. The concentration of the nails shows where the repair took place.
A few small personal items lost by their owners were found in no particular pattern. One such piece is this bronze pin. It was probably worn by a man, as women wore other types of fasteners.

A small whorl of soapstone showed that spinning had taken place.

The spindle whorl, the needle, and a couple of other items show that women were present, but the bulk of the artifacts testify to male activities.
From the bone found in the fireplaces we have some idea of what people ate. Most of it was either seal or whale, but a vertebra testifies that they also feasted on a very large cod! Two shoulder bones, originally believed to be pigs, turned out to be seal. However, the Norse dependence on milk products makes it almost certain that some animals were brought.
We have 155 radiocarbon dates, about 50 of which pertain to the Norse. The dates have a wide spread, all depending on what material has been dated, and in the case of wood, how old the tree was when it was cut down. This became really obvious when a spruce plank and a pole made from a branch of Balsam fir were found together. The date on the plank was AD 640±90, the pole 980±65. The plank was from a spruce and was cut from the very centre of the tree. Spruces can become well over 600 years old, and that explains why it gave such an old reading. The only dates that can be taken at face value are those on young wood such as branches and twigs. The mean of 7 such dates is 1014, so the date is probably somewhere around that time. From the floor deposits and the middens we could tell that it was short-lived, no more than a decade or so. Black dates are on charcoal, turquoise are on wood, red on peat, and blue on whalebone.
The buildings also tell us what kind of people lived there. The inhabitants came from the same social levels as described in the sagas. Two of the buildings are large halls, chieftains' halls, not the homes of ordinary people. The one at the top has a floor space of over 100 m$^2$. As stated before, this is double the size of Eiríkr the Red's home in Iceland. The hall on the bottom had more rooms and totalled over 160 m$^2$. This is the same size as Stóng and on par with the biggest chieftains' halls in Iceland and Greenland. The halls at L'Anse aux Meadows are big. The great Sandnes hall in Greenland has for instance only 72 m$^2$.

The size and complexity of this hall indicates that it was built for the leader of the expedition and the founder...
of the settlement. Although Icelanders were part of the crews, the sagas indicate that all the expeditions were under Greenlandic control, so this should be the Greenland house, the hall perhaps built by Leifr Eiríksson, if he really existed.

A few years ago we had the opportunity to have some fire strikers of jasper analyzed. Fires were started by striking a firesteel against a piece of flint, obsidian, or jasper to produce a spark, which was kindled into a flame. Anse aux Meadowse. Jasper is a rather common stone which exists a little everywhere, including in Newfoundland, and it was used for native tools as well.
However, its composition varies from place to place, so it is possible to trace its origin. In this case we had 11 Norse fire strikers of jasper. Two were Newfoundland jasper showing that the Norse had explored the coasts around them. Another 4 out of 5 from southwestern and western Iceland were associated with the southern and middle halls, and 4 of the 5 strikers in and around the huge hall in the northern part of the site were in fact from southwestern Greenland!

This supports the idea that the leader came from Greenland. Yes, perhaps Leifr Eiriksson slept here!
The middle hall was more modest and perhaps the residence of one of the crews.

The model on the right shows the other chieftain's hall, probably used by one or more Icelandic merchant partners and their crew. The small house is the kind of dwelling used by day workers on an estate. The small rounded hut is the kind of home slaves had to contend with. The social hierarchy of L'Anse aux Meadows mirrors that of the sagas' Vinland expeditions.

The settlement was large, between 70 and 90 people. New research is pretty firm that in Leif's time the Greenland colony had no more than 500 people, so this is a huge proportion of the entire Greenland settlement, even if some of the crew were Icelanders.
When you figure out the work that had gone into L’Anse aux Meadows, you realize that L’Anse aux Meadows is far too substantial and complex to be a site not mentioned in the sagas. The construction itself represented a significant investment. The walls were thick, in places over 2m. Sod had to be cut, about 1500 m³. At least 86 tall trees had to be felled for the posts of the three large halls plus large amounts of wood for the roofs and all the smaller buildings. It would have taken a labour crew of sixty at least two months to build the whole settlement, and a crew of ninety at least a month and a half. This is the better part of summer.

L’Anse aux Meadows was the base in Vinland, Straumfjörður of Eiríkr the Red’s Saga, and, yes, I do think that it was founded by Leifr Eiríksson or if not, a person of his status. There was no way the small, newly established Greenland colony had enough workers for the construction and maintenance of another site of this size.
But if L’Anse aux Meadows is Straumfjörður, where then is Hóp? ES says that “according to some men’s report, only some of them went to Hóp and they spent only two months there.” Hóp was a good distance south of Straumfjörður.

Also here L’Anse aux Meadows matches the Vinland story. We have proof that the Norse at L’Anse aux Meadows also travelled farther south. The proof of the pudding is butternuts, white walnuts, and a burl of butternut wood. Butternuts have never grown in Newfoundland, even during the medieval warming period,
so they must have been brought in by the Norse. Their origin indicates where Hóp may have been.

The northern limit for butternuts closest to L'Anse aux Meadows is eastern New Brunswick, 1000 km to the south. They are not native either to Prince Edward Island or Nova Scotia. We also found scraps of wood from the same area: linden, beech, red ash, elm and other tree species which have never grown north of the Maritimes. What you see on the map are the northern limits of the butternut; they also grow farther south and inland for they require good soils and long growing season.
What made the butternuts really exciting is that they grow in the same areas as wild grapes, in this case riverbank grapes. These river-bank grapes are quite sour and would not have made very good wine. Never mind. After the Romans, Europeans did not have very good wine until the 11th century when proper seals were re-invented.

Both butternuts and grapes ripen at the same time, in late September-early October. Like butternuts, grapes did not grow in Prince Edward Island or Nova Scotia before the arrival of the French. It was at Hôp that the Norse found grapes, and the butternuts and grapes lead us to New Brunswick. This is where we should begin to look for Hôp.

Many things speak for this. In eastern New Brunswick we have the tidal estuaries and warm lagoons behind the long sandbars for which the area is famous, and here we also have the grapes and the butternuts along the inner reaches of Miramichi River and nearby Chaleur Bay.
The sagas speak of felling “grape trees,” *vinvid*. In their natural, wild state, the grapevines are usually found growing among hardwood trees. The vines wind themselves around the trees, making the trees look as if they are bearing grapes. These are the “grape trees,” the *vinvid* of the sagas. The trees were cut and trimmed and brought back to Greenland. The hardwood was better lumber than the softwoods and birch of Newfoundland, and the grapes were such an amazing find that the whole area was named Vinland after
The significance of the grapes cannot be overstated. Wine was not simply for pleasure. Norse Icelandic and Greenlandic societies were chiefdoms with prestige economies. Wine was associated with wealth, power and religious leadership. Ostentatious drinking and feasting ceremonies were means for exerting power. Wine was the type of luxury required for a chieftain to sustain his status. Both Eiríkr and Leifr were upstarts from mere baendir to chieftains. A potential unlimited wine supply would have been a welcome prospect in support of the family’s new position as supreme leaders of the Greenland settlement.

The Miramichi also harboured the densest populations of native people in Atlantic Canada. They were the...
ancestors of the Mi'kmaq, and this area has been occupied by them for at least three thousand years, continuing into our days.

A parameter for how far south the Norse could have gone is the descriptions of skin canoes mentioned in all the encounters with the natives. The Mi'kmaq used skin canoes made from moose or deer skin. However, canoes of any kind are a northern phenomenon. They were rarely used south of central Maine and never south of Boston where hollowed out logs were means of transportation. This rules out Cape Cod and New York, often believed to be Vinland.
The first encounter between the Mi'kmaq and Norse was friendly. The Mi'kmaq had fur for which the Norse paid with red woolen cloth and milk.

Soon, however, fights ensued, with people killed on both sides. The Norse felt threatened and returned to Straumfjörðr.

In conclusion: we can for one thing say with some certainty that the Norse did visit areas where grapes grew in trees. There is a physical reality behind the Vinland sagas, perhaps more accurate than expected.
We can also deduce with some confidence that Vinland is the coastal areas around the Gulf of St. Lawrence, and the islands inside it. Helluland is blue, Markland green, and Vinland red. The map on the right gives you an idea of how the Strait of Belle Isle funnels you into the Gulf when you come from the north along the coast. The Gulf forms an inland sea which one can circumnavigate beginning and ending at L’Anse aux Meadows. In the north is L’Anse aux Meadows/Straumfjörður. Hóp is south of there, in the Miramichi or Baie de Chaleur area.
By now it is rather well known which native groups lived where a thousand years ago. So if we know where the Norse went, we can also say who the people were whom they called Skraelings. In the southern Gulf of St. Lawrence it would have been the people we now call Mi'kmaq. Further into the St. Lawrence Valley, it would have been the ancestors of the Iroquois. In Labrador it would have been the ancestors of the Innu (formerly called Naskapi and Montagnais). They were closely related to the ancestors of the Beothuk, who had spread to Newfoundland. Finally, in northern Labrador and further north it would have been the Dorset Eskimos, who dressed in polar bear clothes and who were probably the people "dressed in white who carried poles with tatters" described by the Indian boys whom Karlsefni captured on the way home from Straumfjörður to Greenland.

Both the Stefánsson map and the 1605 Resen map pinpoint Vinland to a large north-south peninsula, on the Resen map clearly north of the Gulf of St. Lawrence. The latitude for the northern tip of Newfoundland in the Stefánsson map is four degrees too high, 55°N as opposed to 51°N, but in comparison to the latitudes of Ireland and England it is more or less correct. It has been suggested that the maps portray guesses based on contemporary maps and the Vinland sagas. Without modern archaeological information, neither saga would lead you to precisely that point. When the maps were made, L'Anse aux Meadows had not been discovered. It is remarkable that the map makers picked that particular area. I think the only explanation is that both Stefánsson and Resen perhaps knew more than we have given them credit for.
L’Anse aux Meadows was abandoned after about a decade. This, too, is in accordance with the sagas, which say that the Vinland voyages stopped after just a few years. The reasons were many:

- The distance from Greenland. It is more than 3000 km to New Brunswick where the wine and good lumber was. That is, if one sails in a straight line, which of course a sailing ship cannot do over such a distance. It was actually farther to New Brunswick than to Norway.
- The Norse could determine latitude but not longitude, so the trip to L’Anse aux Meadows and New Brunswick was difficult. Between Norway and Greenland one could simply stick to the 60th latitude
and end up in the right place.

- Vinland had grapes and timber, but the Norse could get that in Europe, too, and Vinland lacked the other essentials: iron and luxury metals, spices, fine textiles, weapons, and armour - and family and personal connections.
- Unlike Iceland and Greenland, Vinland also had large native populations, and the Norse were not ready to stand up to them.

• The most important reason was the small size of the Greenland settlement, in Leif's time, no more than 500 inhabitants and never growing beyond 3000, according to the latest research. Compare that to Iceland, which at that time had at least 10,000 and possibly 24,000 inhabitants or more, later increasing to 50,000, perhaps even to 90,000. Besides, the Greenlanders already had plenty of pastures, more than they could work, and they did not have the man power to make new colonies.

Norse Greenland survived for another 450 years, maintaining contact with Europe and keeping up with fashions. During this time they periodically visited Markland for timber, but there is no evidence that they ever again made a settlement as large as L'Anse aux Meadows.

By 1492 the Greenland colony had disappeared, and the voyages of Columbus opened up a new era.