

Discovery Could Rewrite History of Vikings in New World

Archaeologists have unearthed a stone hearth that was used for iron-working, hundreds of miles away from the only other known Viking site in North America.



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POINT ROSEE, CanadaIt’s a two-mile trudge through forested, swampy ground to reach Point Rosee, a narrow, windswept peninsula stretching from southern Newfoundland into the Gulf of St. Lawrence. Last June, a team of archaeologists was drawn to this remote part of Canada by a modern-day treasure map: satellite imagery revealing ground features that could be evidence of past human activity.

The treasure they discovered here—a stone hearth used for working iron—could rewrite the early history of North America and aid the search for lost Viking settlements described in Norse sagas centuries ago.

To date, the only confirmed Viking site in the New World is [L’Anse aux Meadows](#), a thousand-year-old way station discovered in 1960 on the northern tip of Newfoundland. It was a temporary settlement, abandoned after just a few years, and archaeologists have spent the past half-century searching for elusive signs of other Norse expeditions.

“The sagas suggest a short period of activity and a very brief and failed colonization attempt,” says [Douglas Bolender](#), an archaeologist specializing in Norse settlements. “L’Anse aux Meadows fits well with that story but is only one site. Point Rosee could reinforce that story or completely change it if the dating is different from L’Anse aux Meadows. We could end up with a much longer period of Norse activity in the New World.”



The site of the discovery, hundreds of miles south of L’Anse aux Meadows, was located by archaeologist [Sarah Parcak](#), a National Geographic Fellow and “space archaeologist” who has used satellite imagery to locate lost Egyptian cities, temples, and tombs.

Last November, [TED awarded](#) Parcak a \$1 million prize to develop a project to discover and monitor ancient sites. This latest discovery in Newfoundland—supported, in part, by a grant from the National Geographic Society—demonstrates that her space-based surveillance can not only spy out artifacts in barren desert landscapes, but also in regions covered by tall grasses and other plant life.

Parcak led a team of archaeologists to Point Rosee last summer to conduct a “test excavation,” a small-scale dig to search for initial evidence that the site merits further study. The scientists unearthed an iron-working hearth partially surrounded by the remains of what appears to have been a turf wall.

The archaeologists don’t yet have enough evidence to confirm that Vikings built the hearth. Other peoples lived in Newfoundland centuries ago, including Native Americans and Basque fisherman. But experts are cautiously optimistic.

“A site like Point Rosee has the potential to reveal what that initial wave of Norse colonization looked like not only for Newfoundland but for the rest of the North Atlantic,” says Bolender.

Sarah Parcak, a "space archaeologist," has used satellite imagery to locate lost Egyptian cities, temples, and tombs. And now, her eyes in the sky are searching for Viking settlements in Canada.

Location, Location, Location

“*Who’s your daddy?!?*” Parcak shouts at the ground as her muddy boot pushes down on a shovel, cutting its way through thick turf to the soil beneath. It’s a joyous sound, the primal yell of an archaeologist in her natural habitat, doing fieldwork. “Digging makes us better people,” she tells me.

Parcak is far afield of her usual stomping grounds in Egypt. But this project has clearly captivated her imagination, drawing her into Viking history and lore.

One afternoon, we cautiously make our way down a steep path—created by a small landslide and gully—to a narrow beach. As we stroll along the shoreline, Parcak speculates on why this tiny peninsula would have made an ideal Norse outpost.

“They were quite nervous about their safety, threats by locals,” she says. “They needed to be in a place where they could have good access to the beaches but also a good vantage point. This spot is ideally situated—you can see to the north, west, and south.”

After studying the area and researching prior land surveys, the archaeologists have identified other characteristics that would have made Point Rosee an optimum site for Norse settlers: The southern coastline of the peninsula has relatively few submerged rocks, allowing for anchoring or even beaching ships; the climate and soil in the region is especially well-suited for growing crops; there’s ample fishing on the coast and game animals inland; and there are lots of useful natural resources, such as chert for making stone tools and turf for building housing.

Iron Men

And then, of course, there was the most valuable resource of all: bog iron. It’s a type of ore that forms when rivers carry dissolved particles of iron down from mountains and into wetlands, where bacteria leach the iron from the water, leaving behind metal deposits.

The Norse didn’t do much mining. Most of their iron was harvested from peat bogs, and their very way of life depended upon it. Metal nails held their ships together as they sailed west—expanding their realm across the North Atlantic—and south, establishing trade routes throughout Europe and the Far East. A modern-day reconstruction of a Norse longship, built by the Viking Ship Museum in Denmark, required 7,000 nails made from 880 pounds (400 kg) of iron—which means that a blacksmith would have had to heat and process 30 tons of raw bog iron ore.

Bog iron prospectors knew what telltale signs to look for, such as an oily looking microbial slick on the surface of stagnant water. In fact, three historians authored [a study](#) making the case that iron was a prerequisite for Viking settlements. L’Anse aux Meadows, they observe, was a site used for iron production and ship maintenance, providing evidence “that the explorers, knowing their ships needed repair, actively sought out a location where they could acquire bog iron and produce new nails.”

Searching For Signs

Up until now, Parcak has predominantly used her eyes in the sky to gaze upon Egypt, where she has been able to spot geological anomalies that indicate the presence of ruins beneath the barren, mostly undisturbed sands.

A satellite image of Point Rosee used by archaeologist Sarah Parcak in her search for Viking settlements. Dark straight lines indicate the remains of possible structures.

Satellite image by Digitalglobe

But, whereas the ancient Egyptians left behind stone edifices that have endured for thousands of years, Viking structures were hewn mostly from wood and earth. So when Parcak uses satellite imagery to search for signs of Norse settlers, she’s not looking for actual ruins. Instead, she’s scrutinizing the plant life.

The remnants of structures buried at Point Rosee alter the surrounding soil, changing the amount of moisture it retains. This, in turn, affects the vegetation growing directly over it. Using remote sensing, variations in plant growth form a spectral outline of what was there centuries earlier. The Point Rosee

images were taken during the fall, when the grasses in the area were particularly high, making it easier to see which plants were healthier, drinking more water from the soil.

In one area, a magnetometer survey reveals a hot spot that, according to the satellite imagery, is partially surrounded by straight lines indicating the possible ruins of a small structure. Excavation reveals the remains of what appear to be turf walls and an iron-working hearth.

To an untrained eye, the hearth doesn't look like much: a boulder in front of a shallow pit, surrounded by smaller stones. But traces of charcoal and 28 pounds of slag found in the pit suggest to the archaeologists that this hearth was used for roasting ore.



The archaeologists found 28 pounds of slag in a hearth that they believe was used to roast iron ore prior to smelting it in a furnace.

This was the first step in the iron-working process. Before the metal could be smelted and forged by a blacksmith, the ore needed to be dried out—otherwise, it would explode when placed inside a furnace. The roasting process also removed some of the impurities, in the form of discarded metal slag.

The discovery of this hearth makes Point Rosee the southernmost and westernmost known iron-working site in pre-Columbian North America.

The Stuff of Legends

Was Point Rosee a Viking outpost a thousand or so years ago? The evidence thus far is promising. The turf structure that partially surrounds the hearth is nothing like the shelters built by indigenous peoples who lived in Newfoundland at the time, nor by Basque fishermen and whalers who arrived in the 16th century. And, while iron slag may be fairly generic, “there aren't any known cultures—prehistoric or modern—that would have been mining and roasting bog iron ore in Newfoundland other than the Norse,” says Bolender.

Very few artifacts have been found at Point Rosee, but that's actually a good sign. Most Norse possessions haven't preserved well; they were typically made from wood, which decayed, or iron, which either decayed or was melted down to make something else. Archaeologists conducted seven excavations at L'Anse aux Meadows, from 1961 to 1968, before they had sufficient evidence to confirm it was a Norse outpost. And even then they found only a handful of personal items, such as a bronze pin, a needle hone, and a stone lamp. If the archaeologists had found many artifacts at Point Rosee, then it probably wouldn't be a Viking site.



Archaeologists conducted a "test excavation" in Newfoundland—a small-scale dig to search for initial evidence that the site merits further study. They were successful.

One theory is that Point Rosee was primarily an iron-working camp, a temporary facility supporting exploration and exploitation of resources within the Gulf of St. Lawrence. Bolender, however, believes it might have been part of a more substantial settlement somewhere in the vicinity.

If so, then how does this discovery fit into history's bigger picture?

Much of what we know about the Norse exploration of North America is gleaned from the Viking sagas, oral stories passed down across generations that were eventually transcribed.

"We're looking here because of the sagas," says Bolender. "Nobody would have ever found L'Anse aux Meadows if it weren't for the sagas. But, the flipside is that we have no idea how reliable they are."

Archaeologists have found sporadic evidence suggestive of Viking explorers who traveled beyond their settlements in Greenland. Artifacts from the 11th century, including a copper coin, were discovered in Maine, possibly obtained by Native Americans who traded with the Norse. Canadian archaeologist Patricia Sutherland has found ruins on Baffin Island, far above the Arctic Circle, which she claims were a trading outpost—though the evidence remains inconclusive. ([Read about Sutherland's discovery.](#))

The confirmed discovery of a Norse camp at L'Anse aux Meadows proved that the Viking sagas weren't entirely fiction. A second settlement at Point Rosee would suggest that the Norse exploration of the region wasn't a limited undertaking, and that archaeologists should expand their search for evidence of other settlements, built 500 years before the arrival of Christopher Columbus.

"For a long time, serious North Atlantic archaeologists have largely ignored the idea of looking for Norse sites in coastal Canada because there was no real method for doing so," says Bolender. "If Sarah Parcak can find one Norse site using satellites, then there's a reasonable chance that you can use the same method to find more, if they exist. If Point Rosee is Norse, it may open up coastal Canada to a whole new era of research.