Leif

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Approximately Summer, c. y. 1001 AD

Δ **09/HD03/LE:** Leif and his crew prepared their ship for the voyage and sailed out to sea. The 1st land they sighted was land number III that Bjarni had sighted last, before arriving at Greenland. They sailed directly to the 1st land and shortly explored it. They did not see grass but saw great glaciers covering the inland. From the shore to the glaciers, the land was similar to one great slab of rock. This land seemed worthless to them. Leif named the 1st land Helluland. They returned to their ship, turned to the sea, and sighted the 2nd land (G p. 55).

► **19RH/HD03/LE:** The earliest Leif could set off on his voyage to discover new lands was in summer 1001. If Leif wanted to find the lands that Bjarni sighted, he had to follow Bjarni's instructions so that he would not get lost in the unknown seas. The name Helluland means Slab-land. The description of Helluland corresponds best with Baffin Island.

Δ **10/MD03/LE:** Leif's expedition sailed directly to the 2nd land and shortly explored it. This country was flat and wooded. The land sloped gently down to the sea. They saw white sandy beaches everywhere they went. Leif named the 2nd land Markland. They returned hastily to their ship and sailed away to sea in a north-east wind for 2 days until they sighted the 3rd land (G p. 55).

► **20RH/MD03/LE:** The name Markland means Forest-land. With north-east wind propelling his ship Leif could sail from Markland south-west to Nova Scotia. He was obviously copying Bjarni's course, but in opposite direction. Theoretically, Leif could sail south-west through Strait of Belle Isle alongside the west coast of Newfoundland Island. However, this route can be reasonably excluded for a couple of reasons. First of all, there is no indication in the Sagas that Leif sailed through a strait separating two large lands (i.e. south-east coast of Labrador Peninsula and Newfoundland Island), but reference is only to one land – Markland (see 11RH/MD02/BH). Secondly, Leif's description of flat land fits better to topography of north-east, east and south east coast of Newfoundland Island. Therefore it is more reasonable to conclude that Leif sailed around south-east coast of Newfoundland Island and from there he sailed in a north-east wind to the land that Bjarni sighted as first.

http://en.wikipedia.org/wiki/Belle_Isle_Strait

http://www.env.gov.nl.ca/env/waterres/cycle/hydrologic/nl.html

http://www.geonl.net/mapguide/Topo/

► **21RH/MD03/LE:** The expression "white sandy beaches wherever they went" shows that although Leif's expedition spent a short time ashore Newfoundland Island, they sailed for some time in close proximity to the coast of Newfoundland Island.

► **22RH/MD03/LE:** For both, Bjarni and Leif, it took 2 days to overcome the distance between Markland and Vinland. Markland (Newfoundland Island plus possibly south-east coast of Labrador Peninsula) is north-east from Vinland (which begins with Nova Scotia) and a north-east wind would be ideal for Leif to sail south-west. If Leif sailed from south-east coast of Newfoundland Island to the south-west, he would arrive to Nova Scotia, but he would not make it to the geographical setting of Vinland later described in the Sagas that is very unique in Nova Scotia. Therefore it seems that Leif used north-east wind to sail away from southern shore of Newfoundland Island to sea. Then he turned to the west and sailed alongside with Newfoundland Island's southern shores in such a distance that he could still see it. He kept this westerly course until he beheld the south-west end of Newfoundland Island north-west of his ship or until he saw a land south-west of his ship. Only then he changed his course and sailed in north-east wind toward the land in south-west. It is possible that it was Bjarni who gave Leif the idea about this route to Vinland. Namely, when Bjarni sailed from Nova Scotia in the south-west toward Newfoundland Island in the north-east direction, at some point he had to notice the southern coast of Newfoundland Island, which was stretching back to the west. He could consider it to be either part of the previous land (Nova Scotia), or a separate land just north, north-east of the previous land (Nova Scotia). Naturally, it was safer to sail within sighting distance of Newfoundland Island's southern coast, than in the middle of an unknown sea.

Δ **11/VD04/LE:** Leif's expedition sailed toward the 3rd land. They came upon an island north of the 3rd land. They sailed to the island. There they found grass with dew on it (G p. 55).

► **23RH/VD04/LE:** In the north of Nova Scotia is **Saint Paul Island**, which is an uninhabited island without trees, with rocks and grass. The distance between the south-west promontory (Cape Ray) of Newfoundland Island and Saint Paul Island is c. 79 km, or 43 NM, or 49 miles. Leif's eye sight was exceptionally good, much better than that of his crew (G p. 58). If Leif sailed in sighting distance of Table Mountain, Newfoundland Island with a height of 600 m, or 1968 ft. toward the west, he could have been able to see Crogan Mountain, Saint Paul Island with a height of 120 m, or 394 ft. in the south-west and change his course toward this land.

$$3.57\sqrt{600} \text{ m} + 3.57\sqrt{3} \text{ m} \approx \textbf{93.5 km} \text{ (or 50.5 NM, or 58 miles)}$$
$$3.57\sqrt{120} \text{ m} + 3.57\sqrt{3} \text{ m} \approx \textbf{45 km} \text{ (or 24 NM, or 28 miles)}$$

When Leif came to this land he found out that it was a small island just north-east of the 3rd land (Vinland). The distance between Saint Paul Island and Cape Breton Island, Nova Scotia is c. 24 km, or 13 NM, or 15 miles. The distance between the south-west promontory (Cape Ray) of Newfoundland Island and Vinland (Cape North, Nova Scotia) is so short (c. 108 km, or 58 NM, or 67 miles) that Leif would not need 2 days to overcome it. Therefore the 2-day period of voyage would have to be counted possibly from the time when Leif returned back to his ship after landing on Newfoundland Island, until he sighted Vinland.
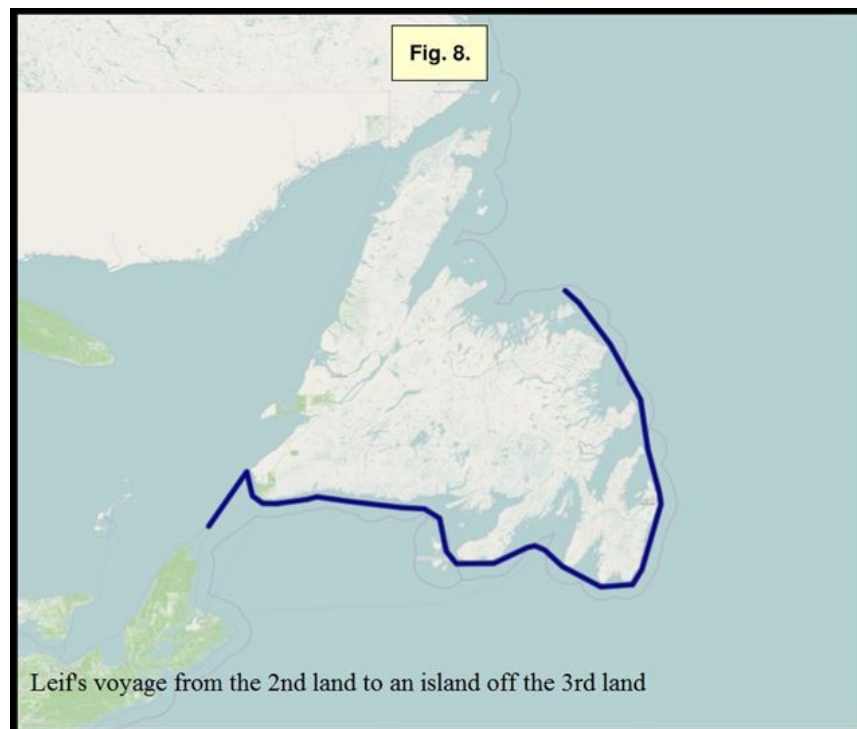
http://en.wikipedia.org/wiki/Horizon#Objects_above_the_horizon

http://en.wikipedia.org/wiki/St._Paul_Island_%28Nova_Scotia%29

http://en.wikipedia.org/wiki/Cape_Ray

http://en.wikipedia.org/wiki/Cape_North_%28Nova_Scotia%29

Leif's voyage from the 2nd land to an island off the 3rd land

Δ **12/VD05/LE:** Afterward they returned to their ship. They sailed into the sound, situated between the island and the promontory of the 3rd land projecting out to the north (G p. 55, 56).

► **24RH/VD05/LE:** At first Leif was sailing through Atlantic Ocean to the west alongside the southern shores of Newfoundland Island. Then he turned south-west and arrived to Saint Paul Island which was situated between two large lands (Newfoundland Island and the headland of the 3rd land – Vinland – jutting out to the north). Between these two large lands was a sound (Cabot Strait). Sound is relatively narrow passage of water between two large bodies of water or between an island and the mainland. Cabot Strait is such passage between Atlantic Ocean in the east and Gulf of St. Lawrence in the west. Leif sailed into the sound in the part of it that was situated between Saint Paul Island and the headland of the 3rd land jutting out to the north.

Geographical setting of a sound connecting two large bodies of water, which is located between two nearby large lands situated in north-east – south-west direction, with an island near a headland of the south-west land jutting out to the north, is very unique. The only such setting in the south-west direction from Newfoundland Island within the maximum distance that a 10th century ship could sail in 2 days (c. 889 km, or 480 NM, or 552 miles) is the setting of **Newfoundland Island** – Cabot Strait – **Saint Paul Island** – Cabot Strait – **Cape North on Cape Breton Island, Nova Scotia**.

http://www.thefreedictionary.com/sound

http://en.wikipedia.org/wiki/Sound_%28geography%29

http://en.wikipedia.org/wiki/Cabot_Strait
http://en.wikipedia.org/wiki/Cape_Breton_Island