Appendix C

Vinland and the Place of the Long Tides

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1.0 Introduction

In two previous studies [1,2] the Norse Sagas [3] were examined from the meteorological and oceanographic standpoints in an effort to locate the harbour where Leif spent a winter in 1001-1002 A.D., and which he called Vinland the Good.

The conclusion of the first report [1] was that Leif, after landing on the Labrador coast at “Markland” (forest land), had been forced to put to sea again in a hurry from the exposed sandy beach there (Wunderstrands) (Fig. 1), that he then sailed down along the Labrador coast before the strengthening on-shore wind into the Strait of Belle Isle, where the
northeaster then drove him through the Strait into the Gulf of St. Lawrence and “out of sight of land for two sailing days”. He then sighted Prince Edward Island (Fig.1), and landed briefly on its sheltered eastern shore somewhere between East Point and Murray Harbour. He reboarded his ship and sailed over to “the cape that projected northward from the mainland” (Cape George, N.S.) then turned westward past the cape along the mainland shore, and sailed into Northumberland Strait (Fig. 1).

The second report [2] analysed the characteristics of the harbours along Northumberland Strait from Cape George westward along the New Brunswick coast and on north to Baie des Chaleurs and the Gaspe Peninsula in Quebec. The harbour characteristics along this route were matched to those which the Saga says Leif encountered and where he settled briefly nearly a millennium ago. The report concluded that:

(1) On climatic grounds, all mainland harbours, from Pictou, N.S. to Baie Ste.Anne and Baie du Vin, N.B. in the outer Miramichi Bay, are possible candidates to have been Leif’s Vinland harbour site.

(2) On navigational grounds, only five harbours north of Buctouche, N. B. namely Richibucto, St. Louis de Kent, Kouchibouguac, Baie Ste. Anne and Baie du Vin are possible or likely sites for Vinland.

(3) On the occurrence of wild grapes, butternut trees (white walnut) and eastern white cedar, which are required to be found in Vinland [4] again, only Richibucto, St. Louis de Kent, Kouchibouguac, Baie Ste. Anne and Baie du Vin apparently can qualify.

The present study now analyses one additional aspect – the peculiar long tides in Kouchibouguac Bay - which might further narrow the choice to one of the three harbours of Richibucto, St. Louis de Kent or Kouchibouguac.

2.0 The Saga’s Account of Leif’s Landing in Vinland

“... they came to an island which lay to the north of the mainland. They then went ashore and looked around in fine weather.

Then they returned to their ship and sailed into the sound (strait) which lay between the island and the cape that projected northward from the mainland. They sailed westward into the strait.

It was very shallow there at low tide and their ship went aground. It was a long way to look to the sea.

They were so impatient to get to land that they did not want to wait for the tide to rise under the ship, but ran ashore (i.e. they rowed one of the ship’s boats ashore) at a place where a river flowed out of a lake.

As soon as the tide had refloated the ship they took their boat and rowed out to it and brought the ship farther up the river and into the lake. There they cast anchor and carried their leather bags ashore and put up their booths. They later decided to winter there and put up large houses.”
If we now position Leif at the point in his exploration of Northumberland Strait where he first would have been able to see that the waterway he had entered at Cape George was indeed a strait, that is, open to the sea at both ends, it would have been at Richibucto Cape. From there, looking across the Strait towards West Point, Prince Edward Island, a distance of about 13 miles, he could have seen that the shore of the Island turns abruptly to the northeast there and then vanishes out into the distance; and so he would also have been able to conclude that the open Gulf also lay ahead, out to the northeast, “although it was (still) a long way to look to the sea”[6].

Having thus gotten his bearings as to the lay of the land, and now able to see a clear way back across the Gulf towards home when needed, Leif could turn his attention to exploring the new land. He could then have turned back to some harbour he had noticed on his way up the Strait, or he could have decided to continue on up the N.B. coast, or he could have landed right there in Kouchibouguac Bay, where there are three fine, barachois harbours – that is to say, harbours having a sheltered, inner tidal lagoon or “lake”, protected from the sea by sand dunes or beaches and with a narrow entrance gulley or “river” leading through the barrier sand dunes to the sea.

2.1 The Norse ‘Impatience’ and the “Long Tides”

There are also very many shoals along the 16-mile shore of Kouchibouguac Bay which extends from Richibucto Cape to Pointe Sapin. Now, if Leif had gone aground on any one of these shoals at low tide, he would soon have had very good reason to become “impatient”, just as the Saga recounts he and his crew did.

This is because, in Kouchibouguac Bay, the tides are quite unusual, in that, for most of the days in the lunar month, there is only one high tide and one low tide in 24 hours instead of the universal two, and the single low tide state there can last from 8 to 12 hours instead of the usual 3 hours or so. Thus, if Leif had gone aground in the Bay on the ebb tide, he would have been stranded on the shoal for 8 to 10 hours or so. This strange tidal behaviour in Kouchibouguac Bay is, moreover, unique in the entire Gulf [7].

The Gulf of St. Lawrence Pilot states [5]:

“ In the region at the western end of Northumberland Strait, when the declination of the moon is at all high, the tide shows a pronounced range only once a day. At Richibucto these is an approximate stand of 8 to 12 hours near the low water level each day, except when there are two tides a day as the moon crosses the equator, and for three or four days after.”:

Most interestingly also, the name Kouchibouguac is a Mi’Kmaq place name meaning “River of the Long Tides” (in this case, ‘long ebb tides’).
While this peculiar tidal behaviour affects all three harbours in the Bay, namely, Richibucto, St. Louis de Kent (also called Kouchibouguac) and Kouchibouguac River, there are reasons for concluding that the place where Leif may have gone aground was on a shoal off North Richibucto Beach, and that therefore his “river” was the Richibucto gulley and that the “lake” he then entered through this ‘river’ was today’s Richibucto Harbour.

We therefore tentatively conclude that a preponderance of the evidence points to Richibucto Harbour [8] as the prime candidate for being the site of Leif Ericsson’s Vinland Settlement.

It should perhaps also be noted that much of the northern side of Richibucto Lagoon lies within the boundaries of Kouchibouguac National Park, which has been extensively explored for archeological artifacts by professionals. There are apparently many Amerindian prehistoric sites in the Park, but no Norse artifacts have been found. Professional archaeologists are also of the opinion that no traces of a single winter’s settlement and occupation, such as Lief’s Vinland camp, would likely be visible today after an elapse of over a thousand years.

REFERENCES AND NOTES

1. Power, Bernard A., Evidence for the Location of Vinland the Good Being in the Western Gulf of St. Lawrence: Conclusions from the Meteorological and Oceanographic Facts. August 20, 1997

2. Leif Ericsson’s Vinland Site in the Western Gulf of St. Lawrence: Conclusions. April, 1999.


6. Prince Edward Island is only 0 to 200 feet high (15 to 60m) and would be visible for 10 to 20 miles (16 to 30 km) across the water. Cumulus clouds over the Island with bases, say, at 300 feet and tops 6-9000 feet, on a fine summer day, would have been visible for 90 to 110 miles (150-180 km) away. The pattern of such clouds, since they form preferentially over the warmer land in summer, can allow mariners to make deductions as to the nature and shape of the underlying land even when the land itself is below the horizon. Hence Leif could have deduced that Prince Edward Island came to an end out towards the northeast and that therefore the open sea lay just beyond.

7. In the part of Northumberland Strait from about Buctouche to Shediac the tides are also unusual, but there it is the high ides that are from 8 to 12 hours long – just the opposite to those in Kouchibouguacay (5). This incidentally, would rule out Shediac, Cocagne and Buctouche as possible Vinland sites, if the Norse
“impatience” is interpreted as we have done. Also, it is worth noting that the Mi’Kmaq place name ‘Shediac’ in fact means (tides) ‘long running in’ or ‘running a long way in’.

8. The name Richibucto is also of Mi’Kmaq origin. It means “River of Fire” from the brilliant sunrises and sunsets seen across the extensive inner harbour.

Figure 1. Leif’s Voyage From Wonderstrands, through the Strait of Belle Isle and then Southwestward across the Gulf of St. Lawrence in the ‘Northeaster’
Fig 3. Richibucto Harbour Showing Shoals/Entrance Gulley/ and Indian Island Mi’Kmaq Reservation
ATTENTION
Pour les renseignements complets sur les aides à la navigation, on doit consulter les cartes à plus grande échelle et le "Livre des feux, des bouées et des signaux de brume".

ATTENTION No. 2
En raison des conditions changeantes, les feux d'alignement et les bouées peuvent être déplacés pour préciser le meilleur chenal. Les navigateurs ne doivent pas s'aventurer sans avoir des connaissances locales. Pour tous changements subséquents aux aides à la navigation, on doit consulter les "Avis aux navigateurs" et le "Livre des feux, des bouées et des signaux de brume".

CAUTION
For complete details of aids to navigation, the larger scale charts and "List of Lights, Buoys and Fog Signals" must be consulted.

CAUTION No. 2
Owing to changing conditions, the range lights and buoys may be moved to mark the best channel. Mariners should not attempt to enter without local knowledge. For subsequent changes of aids to navigation, the "Notices to Mariners" and the "List of Lights, Buoys and Fog Signals" must be consulted.