

island and find clear water from cape Chibukak to Indian point before the ice is open from cape Navarin to cape Bering. It is useless to attempt to pass to the northward of St. Lawrence island from the east side, as the heavy impassable ice, before mentioned as coming out of the gulf of Anadir, exists there much later than it does on the southern shore.

This eastern route is frequently undertaken by the whalers; indeed, some of them always take it in preference to attempting the western route, in order to reach open water off Indian point and meet the whales coming "head on" through the heavy ice to the southward. It is a mooted question by which route a vessel can get north at the earliest date; but I should recommend giving the preference to the west shore, and if that is found heavily blocked, then to lose no time in trying to force the ice, but follow the southern edge of the pack and attempt the eastern route, which will probably be found in that case comparatively open.

North of St. Lawrence island, the west side of Bering sea clears of ice much earlier than the east side, and vessels reaching Indian point find the ice broken into large floes around which they can work, outside of the shore ice, as far as East cape. The bay and shore ice break up at a much later date.

As seasons vary to a great extent, due to the prevailing winds, it is difficult to fix dates for the probable arrival of vessels at different places; but, as a general rule, steamers reach Indian point about May 25 to June 5, and St. Lawrence bay about June 10-25.

In 1882, the *Corwin*, after protracted westerly gales, reached St. Lawrence bay May 11, remained there a few hours and then returned south. Shortly after leaving, an easterly wind set the pack on again and closed the bay for six weeks. This shows that vessels which succeed in getting so far north at such an early date, only accomplish it under peculiarly favorable circumstances; and even then, at great risks, as the pack is not sufficiently broken up until the middle of June, in that vicinity, to enable vessels to proceed fearlessly.

The prevailing winds north of St. Lawrence island are southerly after April 15, and the pack breaks off at that time about 6 or 8 miles off shore. It comes in and moves off with the varying winds until June 15, when it breaks up and goes off to the northward.

The natives put their canoes in the water about May 15, showing that young ice has ceased to form. The shore ice and that in the bays breaks up and moves off from fifteen to twenty days after the pack disappears.