

In 1889, the *Thetis* passed between East cape and the Diomede islands without sighting any ice July 3, but on July 6 she met numerous patches of drift ice setting to the northward between cape Prince of Wales and the Diomedes. Although in 1880 the first vessels passed through the straits May 22, and in 1881 vessels had reached latitude 68° N. by May 31, these were exceptionally early seasons, the usual time at which vessels find the straits navigable being June 15-25. Unless it is an unusually late spring, vessels are sure to be through the straits by July 1, and, once through, the latitude of the Arctic circle is easily reached.

Spring movements of the ice in the Arctic ocean.—After passing through the straits the current on the east side takes a northeasterly direction, following the coast line and setting into Kotzebue sound; thence northwest, along the coast to point Hope, and around it, following the shore line up to point Barrow, where it goes off to the northeast. On the west side of the straits the current branches off to the northwest and follows the Siberian shore up past cape Serdze and and Koliutschin island, and thence off toward Herald island. The action of these currents is similar to that in the Bering sea, the pack breaking off first from the shore ice, at distances off shore varying from 2 to 10 miles, working off and on until it breaks up and goes north, followed later by the shore ice. Mention is sometimes made of an oval basin of open water, of varying extent, being found in the early spring, extending in a northwest and southeast direction on the Siberian side in the latitude of the Arctic circle. This probably exists every year, due to the retiring of the Arctic pack, the drift ice setting north from Bering sea being set off to the northeast and being insufficient in quantity to fill up both sides alike.

After passing through Bering straits the ice met is heavy, rough, hummocky ice, and vessels proceed cautiously, following the pack, and not getting between it and the shore ice if it can possibly be avoided. The pack moves north from both shores at about the same time, and cape Serdze is attainable, probably, a week before point Hope, which, as a rule, is reached by the first vessels bound north July 4.

Kotzebue sound, like all other enclosed bays, is blocked with ice later than the shore line to the northward of it, and its time of clearing depends upon the prevailing winds. A vessel, by following the shore line closely from cape Prince of Wales to cape Espenberg, working through the drift ice, which sets off shore, and through Bering straits, may reach the sound by July 5, and it is generally navigable July 10.

In 1880, which was a westerly season, the sound was blocked by ice July 12, while in 1881 at the same date, there was no ice to be seen