

The shore ice and flaw ice is that which remains fast to the shore after the pack moves off, and which gradually breaks off and follows the pack in floes and floebergs. It becomes scattered and is quickly affected by varying winds and currents, and vessels, fitted for ice work, can work through it quite readily, so long as young ice is not forming.

When a vessel has worked into floe ice until it becomes too heavy for her to proceed, she ties up to the ice and awaits a shift of wind. It is surprising how quickly a shift of wind will change the appearance of ice in a few hours, making wide leads where shortly before the ice was heavily massed. When young ice is making, it forms very rapidly between the cakes of floe ice, joining all in a solid mass, and locking a vessel, so caught, very quickly.

Large, hummocky floes, which drift or are forced up into shoal water, and become grounded, are known as "ground ice," and it is to these that vessels secure to seek shelter in gales from fast drifting floe ice or during temporary settings in of the pack. These pieces of ground ice are recognizable, when there is a current running, by the wake they leave, or by the height of the "overhang" of their former water-line above the surface of the water.

Vessels, forcing their way through floe ice, always avoid striking ground ice, on account of the great risk of being "stove" on it, and also the impossibility to move it. One whaling captain describes making fast inshore of a floe of ground ice, showing only a few feet above the water, which was forced inshore by the pack until it was as high as his fore-yard.

"Young ice" is the name given to new ice just forming. During cold weather, when the wind is light or calm, young ice forms very rapidly. In the vicinity of the pack, with northerly winds in early October, it can be seen shooting off in forks from the edge of the pack so rapidly that vessels, keeping along its outer edge, are out of sight of the pack in a few hours. When not in the vicinity of the pack, young ice forms in spots, which spread out like oil upon the water and soon join in a solid sheet. It forms first from the pack and floe ice, and then from the shore, and spreads out until the whole ocean is covered in a few days. During a cold, calm night it forms to a thickness of from 1 to 6 inches. The best of the whaling steamers that go into the Arctic can probably steam at the rate of 9 knots in open water, but can barely force their way through young ice of 5 inches in thickness at 3 knots an hour.

The ice in Bering sea, although it is made up entirely of young ice every year, may be divided into two kinds, viz, that which forms in the

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