and scratches, and these in cases are carried to such an extent that the cliff may be undercut. The "balacada," in a position of this sort, is formed by the spray, and projects out a foot or two from the face of the cliff; the drain, with its floating-ice, being beneath.

In addition to the work done in scratching and grooving by the coast-ice, it also does much in the transportation of material. When in deep water, chafing along the face of a cliff, by its own horizontal and vertical movements, together with its continued force of impact on a heaving swell, it must detach a considerable amount of material. This, together with that which may fall upon its edge from the rocks above (which appear to be universally greater at the breaking up of a frost than at any other season of the year), is carried by the coast-ice to a new home. The chief agent, however, in the transportation of material is the "balacada," barrier-ice or ice-foot, attached to the shore. At low water this freezes to the ground on a shelving shore, and is at once firmly attached to both boulders and stones. When the tide rises, this ice, with its cargo, floats, and may be carried away. The difference in level between neap- and spring-tides is another cause which greatly accelerates the transporting power of the "balacada." A land breeze assists in the dragging off of portions that are only partially aground. These, with other causes, are always, during the winter season, more or less in operation in removing materials from one point to another.[1]

This immense transportive power of the coast-ice often occasions severe losses to the fishing population of Newfoundland and Labrador. Various articles, to remove which would involve considerable difficulty, such as anchors and cables, having been left upon the beach, have been carried off by the ice;—it has come along, and after, so to say, glueing itself to everything upon the the shore, has floated off with all to which it was attached. At three harbours, Tilt Cave, Englee, and Goose Cove, I heard lamentations over losses of this description; and no doubt, upon inquiry, similar cases might be recorded of every fishing settlement both in Labrador and Newfoundland. The fishermen seem to have transferred the name "Anchor Ice," from its original idea of ice which anchors itself to the bottom, to ice of this description which endangers the equipment of their vessels. Without actually freezing beneath the surface of the water, as in some of the shallower parts of the Baltic where ground-ice is formed, a species of anchor-ice is formed by the freezing of the "balacada" so firmly to the ground at low water, that at the rising of the tide it remains beneath the surface of the water. The consequence of these transportive movements is that much material, both boulders and pebbles are carried out to sea, and then deposited in a manner similar to that which

[1] Speaking of the Greenland Ice-Foot, Geikie, in his "Great Ice Age," p. 68, says that "during summer vast piles of rock and rubbish crowd the surface of the ice-foot." "To such an extent does this rock-rubbish accumulate that the whole surface of the shelf is sometimes buried beneath it, and entirely hidden from view." "Along the part of the coast of Greenland where the ice-foot is shed at the end of every summer, the quantities of rock débris thus borne seawards must be something prodigious."