that if the river surface here at low water were lowered ten feet it would lay dry the greater portion of the southern half of the river bed, while there would still be deep water in all the north channel above the rim of "the Kettle." As at Montreal, in a moderate and high water winter ice difficulties are not experienced, but in very severe and low water winters the thickened ice settles down on top of the shoals, reduces the depth and increases the current in the channels between them until one after another is invaded by frasil, coaxed in by the increasing draft towards the water power, and gradually shut off.

In these winters the output of anchor ice is a maximum, while the storage room beneath the field ice is reduced to the minimum. Moreover, as channel after channel is closed, the velocity in the remaining ones is so increased that the anchor ice is carried under miles (it may be) of an ice covered surface, until it reaches the mill-races.

That anchor ice is carried long distances under the surface of an ice-covered river (or shallow lake with sufficient current) is proved by watching air holes near Montreal, where this ice is seen hurrying past, having come over the Lachine Rapids, below which none is formed after the river becomes ice covered.

On the other hand, in mild and high water winters there is the minimum of ice of all kinds and the maximum depth of channel, and therefore the slower currents in them, so that anchor ice is arrested by friction under the field ice and frozen thereto, leaving some water-way underneath it.

The best way to fight anchor ice (which is the sole cause of the winter floods in the St. Lawrence) is to abolish it wherever this is practicable. It cannot be got rid of in the St. Lawrence, but could be at Ottawa by a dam at the Little Chaudiere. This could also be done in the Back River behind Montreal by a succession of dams creating slack water (and water power) if this can be accomplished at a profitable outlay. On most of our tributary rivers this hoary enemy of water power can often be got rid of, and a valuable water power created at the same time by means of one or more dams.