—the granular ones by agitation and consequent æration. If we refer to the effect of friction upon the sides and bottom of the channel—giving the least velocity to the current at those points, we have the retarding cause *where* the ice formation takes place, and yet a disturbing cause which independent of its submerged position may be sufficient to produce the granular formation. If the cold superstratum of the flowing water (which from its specific gravity at the temperature under which anchor ice is formed, confines the substratum *in sitû*) may be supposed to act upon the bottom in the same manner as the colder atmosphere upon the surface water,—the principal point of difference would be whether the air disengaged in the process of freezing would pass off, or enter into any new combination and form anchor ice as snow is formed in the atmosphere. There is much similarity between saturated snow and anchor ice. Heavy snow-storms, when the water is very cold, produce the same effect upon the river as anchor ice: the snow does not melt but, descending the current, passes under the solid ice and clogs up the channel. The specific gravity of saturated snow and anchor ice appear to be equal and almost identical with that of the water.

One consequence of this peculiar form of congelation may be briefly referred to. The great rivers of Canada, the St. Lawrence and the Ottawa, with the large majority of their tributaries, are terrace-like in their profile, as contrasted with the easy and almost uniform slopes of the Mississippi and its branches. At the outlets of all our lakes, large and small, there are rapids with open water in winter to a greater or less extent. During the most intense cold—20° to 30° below zero —this open surface is covered with white fog or mist, like frost rime, completely hiding the dark water which is beyond the snow-covered bordage and appears to extend across the river—a deception which has lured many an unwary traveller to a frightful death.

While the surface of these lakes and rivers is covered with ice, and the earth with snow, with the sun almost powerless, the amount of latent heat disengaged in the formation of anchor ice and sent up from these numberless breathing holes may give a powerful check to the duration of that severe temperature under which this peculiar description of ice is so abundantly formed.

The unexpected rise of the St. Lawrence above the Lachine Rapids in January, 1857, suggests some questions of moment. Suppose the cold term had continued another day, would the growth of anchor ice