From these brief observations and somewhat crude experiment may we not summarize as follows:—

That ice, like all other bodies, is subject to expand and contract by change of temperature.

That ice forming at a temperature of 32° is at its greatest or maximum dimensions.

Its first movement must, therefore, be contraction. That the underlying water prevents movement in ice under three inches in thickness from change of temperature.

That up to five inches in thickness the ice is affected from the same cause, and, although its movement is uniform, its capacity to contract is reduced from what it afterwards attains.

The rapidity of ice movement is inversely as its thickness.

The capacity of ice to expand and shove on to the shores and to repeat the operation is due to the peculiar manner in which it contracts.

A slight covering of snow (as non-conductor) prevents all ice movement.

That the ice field expands from a centre or centres and fractures on the line of least resistance.

That Railway Bridges or other structures crossing extensive waters, if not constructed in a *massive manner*, will need protection from the ice field, which is most effectually done by isolation and cut side channels, otherwise an inclined surface must be presented to the ice, on which it may run up, fracture, and spend its force and shield the piers.

NOTE.—Blue Section on Diagram is Ice. Black, Thermometer.