

unnecessary, and deep water would be retained over a large area, where wharves at comparatively moderate expense could be constructed. This is a magnificent scheme, and would make a fine harbour if it could be properly carried out without too great cost or too many drawbacks. Its cost would be very great; the dike would average fifty feet high above the present bottom, the depth to which might increase very largely by scour while the work progressed, as the foundations are uncertain; it would have to contend with ice formation in the winter, as in large sections of it there would be little or no current; it would have a tendency to back up the water of the river, perhaps flooding valuable lands, and would gradually silt up and eventually necessitate very extensive dredging, and, further, it would necessitate extensive protection works at the lock entrance, with an adequate artificial harbour of refuge outside for coasting vessels.

SCHEME NO. 8.

*Further effects of the canal.*

The canal, from the head of the present harbour to the St. John River proper, besides opening up the new harbour above the falls, will open up a large part of the centre of the Province to ocean traffic. When opened it will allow the largest ocean steamships to pass up the St. John River in wide, deep waters — waters which average a quarter of a mile wide and over 40 feet deep for 20 miles, or about to Oak Point. Should the traffic warrant keeping this stretch open in winter the ice would not be an insuperable barrier, as there is often open water through parts of it during the winter months. It would give an opportunity for new manufacturing cities to spring up.

In a more restricted channel, with but little improvement, vessels drawing twenty-five feet could go miles further up to the Spoon Island granite quarries and into the Belleisle, which is a long, deep, lake-like river expansion. Again, vessels drawing 20 feet could go to Gagetown, miles up and into the Washade-moak and Grand Lake, tapping the coal fields of New Brunswick.

Above Gagetown large regulating works, raising the summer water level eight or ten feet, would be required to carry vessels drawing twenty feet as far as Fredericton, the capital of the Province, 79 miles by river from St. John.

Then, again, access would be given to the Kennebecasis with wide, deep waters running close in shore, making Rothesay, Clifton, and other villages into possible sea ports, and carrying ocean navigation 30 or more miles in this direction.

The St. John Valley, below Fredericton, is capable of raising and exporting thirty thousand head of cattle annually.