

REPORT ON THE PRESERVATION AND IMPROVEMENT OF TORONTO HARBOUR,

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TO THE COMMISSIONERS OF TORONTO HARBOUR:—

GENTLEMEN,—Not with any pretention to engineering, not with the presumption of competing with scientific men, in plans, and estimates of plans, for the improvement of the Harbour: but, if I have understood the advertisement right, it admits the opinions of observers and of practical men, as well nautical as scientific, to compete in a sort of essay on the subjects embraced therein, which may lead to some beneficial decision, or induce more scientific aid.

If projects are in agitation, which, if carried into effect, I think would be destructive to the Harbour, nautically of little value, and commercially onerous, I, as a nautical man, a practical man, and an attentive observer of the Harbour of long standing, am entitled to intrude an opinion, and compete in the race of competitors, the labours of whom tend to the public benefit.

In my Report to the Commissioners of Toronto Harbour last year, I stated as my opinion that the breach then open was injurious to the Harbour, and urged the necessity of closing it, and so simple and trifling was the injury then, that the beach that was made on the 13th and 14th January last, closed by the operation of Nature on the 17th February following, and had the Harbour belonged to myself (with the opinion I held of its injurious tendency), I should then have raised the beach with the material around me to a height above the reach of the wave. If the aspect of the breach now is in any way formidable, the delay in closing it must be attributed to the public divided opinion, as to its beneficial or prejudicial effect upon the Harbour. But the mass of material that has been removed from the beach, essentially altering its nature, and the drift that has been brought into the Harbour, to say nothing of the undetermined effect it has had upon the Bar must convince the most sceptical of its injurious effect; and an examination of the shallow shelving coast is sufficient to preclude the idea of a natural channel ever forming there, if such an idea was ever entertained.

Further neglect may bring this Harbour into the perilous and costly condition of Erie Harbour at this time, to which it has a close resemblance, where, from having allowed it to become a presqu'isle by a breach at the West, it is continually inundated with sand, and threatened with destruction.

The means of closing the breach when no more formidable than when I observed it last fall appear to me very simple. It can hardly have escaped the notice of the observer that whenever the height of the Peninsula was above the reach of the wave, the wave was rolled back from whence it came harmless to the beach; and that it was only where the wave surmounted the apex of it that it became injurious in its descent on the opposite side.

To repair the breach in its then form with a current through it, it required first to stop the current, which might be done with

as many rough plank of 2 inches, made into cases 6 feet long by 2 feet 6 inches \times 2 feet 6 inches, filled with the material of the beach, as would stretch across the narrow neck of the breach in double row, ten or twelve feet apart, and filled in between, this would effectually stop the current, (the narrow part being only sixty feet wide and far removed from the beat of the wave), the current once stopped the process of raising the beach is the mere affair of carts and wheelbarrows, with labour and a plentiful supply of the material of the Peninsula. The object of these cascons being only to stop the current, which done all would be buried up. With moderate winds at S.W. and N.E., the lip of the wave would repair the beach in a fair line to a certain height almost as soon as the most active labour would raise the other part to the required height. More scientific and a more expensive process might be adopted, but none more efficient.

On examining the beach I observed the wave had never reached a height above five feet, where that height was twenty feet from the line of calm water, and treating the Lake for all immediate practical purpose as at a constant level, I had only to consider the casualty of an easterly storm; then looking round me for even the lowest part of the Peninsula that withstood that storm, I placed in imagination in the interval of the storm a section of it in the breach, and I felt myself secure, convinced that nothing could be so effectual in repairing the breach as the material of which it was composed.

The Lake was, when I observed it last fall for the purpose of estimating the height of beach required to resist the sudden encroachment of the Lake, two feet lower than the highest level, and two feet higher than the lowest; I therefore concluded that a beach six or seven feet above the highest water at 20 feet from the line of calm water, and a hundred feet wide in all, would be amply sufficient to secure the Harbour against further inroad from the Lake. I do not think that for many years the beach in that part has been five feet high. Be it remarked that the water being shoal without, the wave in any storm is greatly reduced in height and force in passing over the shoal water before it reaches the beach.

If cribs are made use of to stop the breach, the retrocession of the Peninsula (as I shall show) will in the course of time lay them bare, and even if they extended all the way to the head of Ash bridge's Bay, yet in time the whole line would be taken in reverse. Keeping the beach at all times and in all parts above the reach of the solid water of the wave, the retrocession will proceed safely, uniformly, and almost imperceptibly, but proceed it will, as it has done, and still does; breaches accelerate this, as witness the present effect, and examine the marks all the way from the fishing houses below the cross beach to some hundred yards West of Privat's Hotel.

But until the important question of a canal at the East end of the Bay is settled, I fear even the preservation of the Harbour will be a secondary consideration, I shall therefore publicly treat this question fully in all its bearings upon public interests, that is physically, nautically, and commercially.

PHYSICALLY.—The superstructure of the Peninsula, the southern boundary of the Port is composed of drift—that is, clean washed sand and stones; the base of it I believe of all the material of the cliffs of Senbore, the substratum most probably of indurated clay. The bar or western boundary of sand and clay.