

There is reason to believe that between the 8th and 15th of June the water can be gradually raised, and that about the 22nd June, the embankment will be carried to its original height.

The lowness of the water caused by this occurrence rendered the feeder from Dunnville to the Junction unnavigable, and prevented the usual supply of water being furnished to the mills and factories situated along the line, but it did not in any way interrupt the navigation of the main canal.

As already stated, the present occurrence, so far as could be learned, may in great measure be attributed to the sudden destruction of dams on the higher part of the river; still it is a well-known fact that the freshets in the Grand River have of late years been greater than formerly, although generally they have been of shorter duration. This, doubtless, arises from the larger extent of clearances along its banks and tributaries, a state of matters which there is reason to believe will be more likely to increase than diminish.

It therefore seems as if the safety of the works required that additional means should be provided for the more rapid discharge of these sudden floods. This is the more desirable as the retention of the water at a high stage is found very detrimental to the interests of the large, thriving town of Dunnville, which has, within a comparatively short period, grown up in the vicinity of the dam.

I am not in possession of sufficiently detailed information to enable an opinion to be formed as to whether this object could be best effected by increasing the width of the overflow of the dam, or by the construction of an additional regulating weir on the south side the river, and the enlargement of the waterway at the bridge over Sulphur Creek.

It is, however, quite probable that if the plan first mentioned could be adopted it would be the least expensive.

To guard against the recurrence of casualties of the nature above described, the embankment should in my opinion be raised from 12 to 18 inches higher. It might also be well to consider whether a regular slope, covered with stone, would not form fully as good a protection to the embankment as could be obtained by the timber docking.

This plan if carried out would certainly have the advantage of being more durable, less expensive, and free from the objections to which a vertical timber docking is liable in cases of high winds acting on the extensive sheet of water above the dam.

Since the breach at Dunnville the water in the feeder and main canal has been from  $3\frac{1}{2}$  to 4 feet below what is called the Grand River level, or at the height of from  $4\frac{1}{2}$  to 4 feet over the assumed line of Lake Erie level.

When constructing the lock at Port Colborne, the mitre sills were placed 20 feet below the Grand River level, or 12 feet below the assumed level of Lake Erie, and since that time all water levels, as well as the bottom line of the canal have invariably been referred to the depth of these sills.

On the 19th May last the lake level at Port Colborne was 12.7 feet, and that of the canal 16.2 feet over the lock sills, so that on the day mentioned the canal was 4.2 feet over the assumed low water line of Lake Erie, or 3.8 feet below the Grand River level.

This reach, it may be proper to state, extends from Port Colborne to Allanburgh.

On examining the banks of the "Deep Cut" there were found to be recent indications of settlement at *three* different places on the east side, and *one* on the west side. These were observed to run obliquely from points near the top of the slope down towards the water line where they, in each case, embraced a space of several hundred feet parallel with the canal.

The indications are however so slight, that on any other part of the line they would have created no apprehension whatever, but on the "Deep Cut" the least appearance of sliding or settlement is a reasonable cause of alarm.

No reliable opinion can, however, be given by any one as to whether they will turn out to be of a light, or of an extensive nature. Moreover the bottom being a sort of quicksand, and the banks loaded with masses of spoil from the cutting, there is no known way of preventing the occurrence of slides after the pressure of the water is removed from the inside.

Still the failure of the Grand River at certain seasons to furnish the necessary supply