

There is considerable "erosion" during flood-time of the banks of the river between Ngarnuahia and Hamilton.

Again, presuming the proposed River Board dredged a channel in the river to its original sole—say, as far as Huntly—if some action is not taken above that point the work of keeping the channel clear will be a continuous operation.

In my opinion, at one time the tidal influence affected Mercer as much as it does Tuakau now, and it is only a question of reinstating the original position.

The residents long in the district acknowledge the change in the river-bed.

The lowering of the river by dredging would permit the waters of the Whangamarino and Maramarua Rivers being lowered 6 ft. (at summer level), and thus enable (at a small expenditure per acre) the drainage of the Government lands and a very large area of land acquired from the Government by resident settlers. There is not the slightest doubt that this is a national question; every acre that obtains increased value is increasing the revenue of the Dominion.

Canals.—The action of the Auckland Harbour Board in determining to make canals to connect the Waitemata with Waikato is of importance and considerable advantage to your association, or, rather, I should say, to the proposed River Board, financially and otherwise. They will hold the premier position, consequently the cost of works and their maintenance will not be a perpetual charge on the settler, as the Board, if formed, will have power to collect dues and possibly obtain endowments. Further, if the canals are made they can only be of profit so long as the Waikato River is open and fit for traffic. Therefore the Harbour Board, by dues or otherwise, will have to supply the necessary funds to keep the channel open, or enter into some arrangement with the River Board. Therefore the settlers must thereby be relieved financially.

I apprehend the proposed canals will not be completed for four or five years. Therefore if a loan is required by the proposed River Board to carry out the proposed scheme it will only be necessary to obtain an amount equal to four years' expenditure.

I have been asked by your association for an estimate of the cost. It is impossible to give one, but I consider that an expenditure on works of £5,000 a year would be ample.

Say, four years, at £5,000	£20,000
Hire or interest on cost of dredge and gear, and depreciation	5,000
	<hr/> 25,000
Salaries and office-expenses and incidental expenses for four years	3,000
	<hr/> £28,000

In conclusion, I am satisfied the Whangamarino and Maramarua Swamps can be drained, but only by the method hereinbefore described. If, as suggested by the Premier, a consulting engineer is appointed to further report I shall be pleased to meet him and afford him any further information at my disposal; but I think the sections herewith attached will (as far as their limits extend) afford him information sufficient to meet his requirements.

I have verbally informed your association that if a large harrow, something similar to the one I used in the Piako River, was dragged over the worst sand-banks, the sand, if liberated at the turn of the tide, would to a great extent float or be carried away, and the timbers or *débris* that held it would be exposed, and could then be easily removed. This would create a scour, and therefore would materially benefit the channel. I am satisfied that under proper direction the result of the operation would be far beyond your expectation.

APPENDIX VI.—A SHORT ACCOUNT OF A VISIT TO NGAURUHOE AND TONGARIRO VOLCANOES.

[By E. PHILLIPS TURNER, Inspector of Scenic Reserves.]

On the 29th January, in company with Messrs. W. and C. Vickers and R. Burrow, I left our flying-camp, near the Taranaki Stream (a branch of the Whakapapanui), for the ascent of Ngauruhoe. After about an hour's walk over fairly easy-travelling country we reached the base of the cone on the south-west side. Here really hard work began, for we had to elevate ourselves a height of about 3,700 ft. at an average gradient of 1 in $1\frac{1}{2}$, and over a surface composed of alternations of loose scoria and angular blocks of lava. However, until within about 1,000 ft. of the summit the foothold was good, but after that to the lip of the crater it was really a stiff job climbing up through loose volcanic ash and lapilli. However, good muscles and hearts got us to the top at 7.15 a.m.—two hours and a quarter from our camp.

As I had heard from Europeans and various Maoris in the Waimarino district that a red glow was sometimes seen over the mountain at night, I was most anxious to look down the crater to see the molten lava that could alone be the cause of the glow.

When several hundred feet from the top there could be heard an ominous sound like the working of some gigantic engine; but on top this noise was almost deafening, and as one looked down the terrible abyss, emitting dense clouds of steam and sulphurous gas, the impression given was most awe-inspiring.