

tion of the owners thereof. In other cases the districts include lands upon which no rates are now levied, because the owners pump the water from such lands or otherwise get rid of it as best they can.

The whole of the district suffers very much more from internal waters than from floods coming from the Taieri River. The river has been successfully blocked off the district by a large bank from Outram southwards, made several years ago by the two River Boards at a great cost; but the Otokia Drainage Board narrowed the outlets to the block drains into the river, and this, it is asserted, largely impaired their usefulness.

There is plenty of evidence to show that the condition of the lower plain is getting worse and worse, for lands that would grow good crops a few years ago are now swamps and lands which are capable of giving very large returns if relieved of water can now be used only for grazing purposes.

The present value of the whole plain is upwards of half a million pounds sterling, and one has only to go over it, to see the thousands of acres of otherwise valuable land that is either swamp or next to it, to realise that the present system of drainage is inadequate and that the consequent loss to the settlers must be very great.

Under these circumstances, therefore, it is quite clear a radical change is necessary, and that the case calls for the interference of Your Excellency.

Dealing with the engineering propositions placed before the Commission, we find that, generally speaking, two main projects for effectively draining the whole of the Taieri Plain were submitted for consideration.

The first of these propositions was advanced by Mr. D. Reid, jun., M.H.R., who advocated the construction of a tidal wall with sluice-gates across the Taieri River near its mouth, with the object of preventing the inflow of the tide, while letting out the river-water. The idea is not altogether a new one, and in point of fact the same suggestion was made so far back as the year 1880 by the late Mr. E. B. Cargill. In that year a Royal Commission was set up by the Hall Government to report on the floods which occurred in the Taieri River in 1879. The members of the Commission were Messrs. C. Napier Bell, C.E., H. P. Higginson, C.E., and W. N. Blair, C.E., and in the report forwarded to the Government by these gentlemen (*vide* Appendix to the Journals of the House of Representatives, 1880, paper E.-6) it is stated, *inter alia*, that the proposal did not appear to consider fully the interests of settlers in the higher portions of the plain, who, while receiving no benefit from the lowering of the permanent tides, would be seriously damaged by floods. Without entering into further details, it may be said at once that the scheme was condemned by Messrs. Bell, Higginson, and Blair; and Mr. D. Reid, jun., alive to this fact, addressed a letter to the Commission on the subject, stating that in his opinion the reasons given by the engineers were not such as to justify the condemnation of the proposal *in toto*. Mr. Reid further suggested that a special report going fully into particulars should be procured by the Commission, but the limited time at our disposal did not permit of the carrying-out of this suggestion. Mr. Robert Hay, C.E., who gave evidence before the Commission at Dunedin, declined to express an opinion on the practicability of the scheme. Mr. E. Roberts, C.E., another witness, was strongly adverse to any obstruction being placed on the river at all; while Mr. G. M. Barr, C.E., stated that a tidal wall would be a serious block to navigation, and would have the effect of making the bar rise higher. It is evident that the construction of a wall of this kind will be a very costly item, and as the feasibility of the scheme can only be decided after the most careful measurements and surveys of the proposed site have been taken, we have been unable, in the absence of a special engineering report on the subject, to arrive at a definite conclusion as to whether the idea is or is not a tenable one.

The second proposal which claimed the attention of the Commission was the construction of storage-reservoirs in the upper reaches of the Taieri River, with the dual object of arresting the flood-water on its way down and giving time for the escape of water from the lower areas.

The construction of storage-reservoirs is warmly advocated in the report of Messrs. Bell, Higginson, and Blair, already alluded to, and in fact these gentlemen strongly recommended the Government to proceed with the construction of two storage-reservoirs—one at a gorge below the junction of the Kyeburn, a little below the outlet of the Taieri Lake, and the other at the Hogburn, a few miles higher up the river. Their estimated cost of these works was £66,000, and it may here be remarked that these engineers were of opinion that the reservoirs should be built of masonry or concrete, as being the safest and most reliable kind of material, and were altogether opposed to earthen embankments.

The principle of storage-reservoirs in the interior was supported before the Commission by Mr. G. M. Barr, C.E., who in his evidence recommended that the reservoirs, if ultimately constructed, should be of random rubble, with sluices and culverts of concrete, the material being quite as effective and at the same time less costly. It was pointed out to this witness that conditions had greatly altered since the scheme of storage-reservoirs was recommended in 1880 by Messrs. Higginson, Bell, and Blair, inasmuch as Taieri Lake, where it was proposed to place one of the reservoirs, was now practically filled up with silt. Mr. Barr, however, reiterated his opinion that the idea of storing the water at a suitable locality in the upper reaches of the river should still be entertained, and referred the Commission to a special report made by Mr. W. N. Blair, C.E., to the Board of Conservators of the Taieri River in 1877, in which Mr. Blair advocated and recommended the construction of a reservoir at Taieri Lake (*vide Otago Daily Times*, 14th September, 1877).

After perusing Mr. Blair's report, and also a former one by the late Mr. J. T. Thomson to the Otago Provincial Government (*vide* Appendix to Otago Votes and Proceedings, Session XXVII, 1870) on similar lines, we are of opinion that the idea of storing water at suitable localities in the upper reaches of the Taieri River should not be dismissed without a thorough examination and engineering survey of various suggested sites, notably at Tannahills, Hogburn, Deep Stream, and Lee Stream.