

- “(4.) To ascertain the nature and extent of any drainage-works that may be required, and the best method of carrying out such works ;
- “(5.) (a.) To furnish estimates of the cost of such remedial measures as you may recommend should be taken for the effective control and improvement of the said river and its banks ;
- “(b.) To report, in the case of each river; what area or areas of land should be constituted a district in respect of which a rate may be levied to secure and pay the interest on and provide a fund for the repayment of any loan that may be raised to carry out any river-improvement works which you may recommend should be undertaken ;
- “(c.) To report your opinion as to what matters, if any, should be adjusted by legislation ; and
- “(d.) Generally, to report your opinion on all matters arising out of or touching the premises, including the question as to whether or not one or more competent authorities shall be appointed to control the whole or any portion or portions of the said river, and what statutory powers should be possessed by such authority.”

Your Excellency's Commission also required us to report separately in respect of each river.

INVESTIGATIONS MADE.

Sittings, Evidence, and Inspections.—A sitting of the Commission was held in the Courthouse at Mosgiel on the 5th March, 1920, when the evidence of seventeen witnesses was taken. On the 9th March your Commissioners made an examination of the river from the West Taieri Bridge above Outram at the outlet of the upper gorge across the plain and down to the lower gorge, and also inspected the levees, drains, and contour channel which have been constructed by previous Boards and the present Board, and the bridges, the condition of the channel generally, and particularly the low ground at the place where the river is joined by the Silverstream and the Waipori River. On the following day an inspection was made of the river from Outram to the Maniototo Plain.

PREVIOUS REPORTS.

Your Commissioners carefully perused the reports which have been made in the past on the subject of the Taieri River floods by engineers at various periods, extending over fifty years, and from these were enabled to form a very clear conception of the problems to be met.

Their investigations were also facilitated and shortened to a very considerable extent by the fact that they were furnished with copies of all the plans and proposals embodied in the report made by Messrs. Thompson, Vickerman, and Hunter in 1917, together with much valuable data collected by them.

Your Commissioners are also much indebted to the Western Taieri Land Drainage Board for the loan of a valuable contour plan of the flooded area, made by their late Engineer, Mr. Elliot.

All these plans and data enabled your Commissioners to see clearly the reasons for the various phenomena which have been observed in connection with the floods, and the effects of the failure of any part of the protective works, either existing or proposed.

In this report your Commissioners propose dealing mainly with that portion of the Taieri River between Outram and the sea.

RIVER NOMENCLATURE.

For the purposes of this report the two rivers, the Taieri and the Waipori, will be referred to separately ; and, following on the lines of the 1917 Commission's report, the same river nomenclature will be adopted, as follows : The Taieri River from its source down to Kokonga will be referred to as the “ Upper Taieri,” from Kokonga down to Outram as the “ Middle Taieri,” from Outram down to Henley