

## TOWN OF BALCLUTHA.

Both before the appointment of the Commission and during its investigations a widespread feeling has been given expression to that the town of Balclutha should never have been built where it now stands, and that therefore the people, having gone into such an unsuitable township-site of their own volition, are entitled to no sympathy for the troubles in which they now find themselves. While your Commissioners agree that it is regrettable that such a site should have been chosen and developed to its present stage, nevertheless they feel that as the General Government was to a certain extent to blame in the first place in cutting up a limited number of sections on the peninsula, and as the town has now an established prosperity and has become recognized as the trading and official centre of a large and valuable district, its present existence must be recognized, and its value is such that it must be protected.

Your Commissioners have considered the possibility of removing the whole of the improvements now on the peninsula to higher ground, but are of opinion that the expense which would be thereby incurred, both in the actual work and in the dislocation of business, is too great to be warranted.

While the flooding of agricultural land is detrimental and should be avoided, nevertheless if it should happen it can be borne, and merely represents the loss of so-much money; but in the case of a closely built town such as Balclutha an inundation such as would occur in the event of the protective works failing would undoubtedly result in loss of life in addition to a great loss of property, and for the former reason alone very considerable expenditure on protection would be justified. Had no protective works been erected at Balclutha the risks and the actual damage to Barnego would be considerably lessened. It is not likely that the area of land at Barnego is sufficient to justify protective works adequate to withstand the greatest flood to be anticipated, but protection against all floods is required at Balclutha, and consequently Barnego must be prejudicially affected, and should receive from the town of Balclutha some assistance towards an insurance fund of a character to be outlined later on. If the inhabitants of Balclutha are not prepared to pay annually towards such an insurance fund, then they must be charged with a very considerable portion of the cost of raising the Barnego levee as high as the Balclutha levees.

## CHANGES IN REGIMEN.

That the lower reaches of the river do not now possess their original characteristics was affirmed by practically every witness old enough to recollect early conditions. Before the mining became an important factor the river was a deep clear-running stream, with the water the deep blue characteristic of its upper reaches at present. It is now, especially in the Koau Branch, full of shingle-bars, always muddy, and generally very much shallower than it was, say, in 1860. At that time, also, the tidal influence was felt considerably farther up-stream, and drains which were then constructed to discharge into the river through automatic tide-gates at low water cannot now so discharge.

## EXISTING WORKS.

A great deal of useful work has been carried out for flood protection in the past. A general description of these works is as follows: The Barnego Flat, on the left bank, is protected by a levee approximately paralleling the river and connected with a hill at each end, the height of the levee being generally up to within an inch or two of the height to which the 1919 flood rose. This levee is not continuous, as portion of the river-bank is sufficiently high to be above the grade of the flood referred to. On the right bank there is a very strong levee extending from the hills about a mile and a half above the Balclutha traffic-bridge down to some comparatively high ground in the vicinity of the Agricultural Show Grounds. The greater portion of this levee was erected shortly after the great flood of 1878, and its top was made up to the observed flood-marks of that flood. No allowance was made for the inevitable rising of the flood due to the cutting-off of the flood-overflow across the peninsula. In later years this danger was partly realized, and the levee was raised 3 ft. and otherwise strengthened. Had this not been done a catastrophe must have occurred in 1919.