

the opportunity for lateral erosion to take place. An approximate longitudinal section of the river is attached hereto (plan No. 2).

The intensity of the flood-discharge in this river is, if anything, less than the average for rivers with an equal catchment area, on account of the favourable nature of the watershed and the comparatively low rainfall. The denudation of the hills, which is so marked in the Clutha watershed, has no counterpart in any portion of the watershed of the Aparima. Most of the shingle-beds forming in the river are caused by the erosion of the banks, and do not consist of detritus brought down the river by floods. This fact has largely contributed to the popular belief that the bed of the river is rising. There was a diversity of opinion, however, on this point, some witnesses stating that the water now runs at a higher level, while others said that it is lower than in the past. While it is admitted that measurements taken at bridge crossings are not the most satisfactory, nevertheless all the measurements taken by your Commissioners went to show that there has been no perceptible alteration in the level of the river-bed.

There are no lakes within the watershed of this river, and few large tributaries, but there are some very considerable areas of swamp lands, which would, of course, have a regulating effect upon the streams running through them.

The watershed down to Wrey's Bush Bridge is 326 square miles. Down to the point where the main tributary, the Otautau, joins the Aparima the drainage area is 445 square miles, including the Otautau drainage area of 111 square miles, and the whole watershed of the Aparima River to its estuary is 500 square miles.

There is no gold-mining within the watershed of the Aparima River, and the coal-mines have had no effect in increasing the amount of detritus carried by the river.

LOCAL BODIES INTERESTED.

At present the only Board actively engaged in river-protective works is the Otautau River Board, which controls the right banks of the river for about seven miles, including the reach above and through the town, and the Otautau Stream and its tributaries. This Board's district contains approximately 9,000 acres of country land and the town of Otautau, comprising 900 acres. The total valuation of the district is approximately £203,000, that of the town subdivision being £84,000 and of the country subdivision £119,000.

The only other local body interested is the Wallace County Council, which has not been constituted a River Board in respect of this river, but which, as mentioned later, has carried out certain works for the protection of its roads and bridges, and has also assisted the Bayswater settlers in the construction of protective levees.

FLOODS AND FLOOD-DISCHARGES.

The heaviest flood in the Aparima River is recorded as having occurred in 1913, but, apart from that flood, the floods of the past appear to have left very little impression on the minds of witnesses, and it may be assumed from this that they were of minor importance. As far as your Commissioners have been able to ascertain from the very meagre data available, the flood of 1913 did not exceed 35,000 cubic feet per second at Wrey's Bush Bridge.

EXISTING WORKS.

The existing works on the river consist of—(1) A certain amount of levee-work carried out by private enterprise in the vicinity of Thornbury; (2) a considerable amount of levee-work on the main river above the town of Otautau, constructed in order to prevent the waters of the Aparima, when in flood, finding their way into the Opio Creek and thence into the Otautau Stream. The Otautau Stream has also been cleared and straightened and stop-banked on both sides for a considerable distance through the town of Otautau.

The cost of the original works done in the early days cannot now be ascertained, but since the resuscitation of the Otautau River Board in 1910 approximately £3,500 has been expended up to the 31st March, 1919. Since then no large works have been carried out, but rates to the extent of £400 have been expended.