

Your Commissioners examined all available records both on plans and in documents, and found that the flood of 1908, which was that so very carefully examined by the 1917 Commission, had been exceeded in 1868; and from a perusal of all the data available your Commissioners are inclined to the belief from the figures taken by the Commission of 1880 (Messrs. Bell, Higginson, and Blair) that 62,500 cubic feet per second can be assumed as the highest discharge with which it would be reasonable to attempt to cope.

MINING.

The evidence is conclusive that the channel of the river at and below Outram, and more especially between Allanton and Henley, is very much smaller, both in width and depth, than it was when the plain was first settled. This is popularly ascribed principally to detritus from the mining carried on in the higher reaches of the river, and an examination of the character of the silt leads your Commissioners to believe that this popular belief is well founded. The silting-up has been greatly accelerated by the luxuriant growth of willows along the banks and on islands in the channel, which encourage the deposit of silt and also heavier material, but even without these willows it is probable that very considerable silting-up would have occurred. The other agencies of man in connection with agricultural and pastoral pursuits, referred to in several of our reports, cannot, in the case of this river either, be held blameless. Suffice it to say that the artificial conditions created by industries and settlement farther up the river have caused or are mainly responsible for the silting-up referred to.

With reference to the Waipori, it may be taken that mining is almost entirely responsible for the debris which has choked its channel and caused the regrettable condition that now exists in the region of Berwick. The transportation to the plain and the deposition thereon of this detritus has been greatly aggravated in later years by the establishment of the hydro-electric works at the Waipori Falls. The weir by which the water is lifted from the river acts as a settling-pond for the heavier particles throughout the week. Periodically, generally weekly, the dam is emptied by sluice-gates near the bottom. The outrushing waters carry with them an enormous charge of silt, and being large in volume, comparable to a small flood, they carry the detritus down the steeper portions of the river; but on arrival at the plain the force of the waters is spent, and, the sluices being again closed in order to fill the dam for the resumption of power-production, there is no force of water to carry the material seaward, and it deposits in the lower reaches of the river and in the Waipori Lake.

This detrimental effect to the plains caused by the works of the Dunedin City Corporation is what justifies your Commissioners in recommending the contribution by the Dunedin City Corporation set out under reference No. 5 (*d*).

The channel connecting the small Waipori Lake (variously known as the "Little Waipori Lake," "Maori Lake," and "Lake Tatawai") with the main Waipori Lake has become so shoaled up and constricted that Maori Lake is now practically tideless. Waipori Lake itself has shoaled up so that portions which forty years ago were deep are now above the water-surface, and growing grass. The outlets from Waipori Lake into the Waihola channel, and also from Waihola Lake into the same channel, have shoaled up so much that even flat-bottomed boats have a difficulty in navigating them; while the evidence shows that in the early days of the goldfields steamers plied between Dunedin and Waihola, and large barges navigated close up to the town of Berwick. Practically all this shoaling must be ascribed to the mining-debris.

Apart from the question of aggravating floods, this shoaling has had a disastrous effect upon the lower water drainage.

In common with the rest of Otago the mining operations within the watershed of the Taieri River have decreased now to very small dimensions, and are still decreasing. However, the damage is done, and even though the mining ceased absolutely to-day it would be many years before the effects would be no longer felt.

When the Waipori River was proclaimed a sludge-channel some of the owners along its banks were compensated, but from the evidence given to your Commissioners it appears that all were not compensated, and those who did receive compensation only received what in their opinion was totally inadequate. In this