

*Hukerunui Swamp Drainage.*—Contracts for 2 miles of drain were completed at an expenditure of £141.

*Ngarua Road and Canal.*—Some 55 chains of this canal was dredged, which necessitated the removal of 58,649 cubic yards of spoil. This will eventually be the main road between the Piako River and Crown settlers on western portion of Hauraki Plains. The cost of the work was £618.

*Rangitaiki Drainage District: General Road-construction.*—The work done is dealt with under the separate report on Rangitaiki drainage operations. Some 9 miles 27 chains of road-formations was done out of special grants. Expenditure during the year was £2,286.

*Kaitaia Drainage Area.*—The work done during the year comprised the compiling of all necessary data, and the following engineering surveys have been done to date: Traverses, 20 miles 6 chains; levels, 45 miles 78 chains; check levels, 5 miles; cross-sections, 22 miles 20 chains; soundings, 11 miles. The plans of all the above were practically completed, but the weather considerably retarded field-work generally. The expenditure during the year was £140 2s. 9d.

*Poukawa Drainage Area.*—This is one of the drainage areas to be proceeded with under the provisions of the Swamp Drainage Act, 1915, and comprises an area running alongside the Napier-Poukawa Railway-line in the vicinity of Te Aute. The area to be included in the drainage district has been sent forward for gazetting, and early in March the engineering survey was taken in hand. To the end of that month 5 miles of traverse and levels were completed, and soundings taken over 6 miles of lake. Plans were also commenced and a fair amount of plotting done. The construction-work will proceed at an early date.

*Opouriao Protective Works.*—The chief work has been repairs and maintenance of existing works. New work completed during the year was the erection of 920 ft. of boom groynes, 75 ft. of wire-netted stone groyne, 7 chains of wire-fence groyne, and cutting off bend at Section 6, Block XII, Whakatane. Maintenance of works such as these will continue to be heavy until the banks of the river are lined by well-established willows. Two exceptionally heavy floods occurred during the year. Though considerable damage was done to boom groynes, the work as a whole demonstrated its utility, and no land of any appreciable extent was eroded. We can expect to lose groynes, as it is inadvisable to build a groyne to stand up against the heavy drift timber and masses of debris that come down during floods and jam on the groyne. If the groyne did not break then the accumulated mass would hold and probably force the river into a dangerous position. Each year will tend to lessen the danger, as the improvements define the channel and protect same by willows. Establishing willows is a slow process, as a scour is liable to occur until the trees are a fair size and the roots well established. Labour in this locality has been very scarce. The expenditure during the year was £648.

*Waimana River Protective Works.*—During the year 1,298 ft. of timber groyne have been erected, and a channel scooped to straighten the river at Low's Bluff. Maintenance of existing works has also received attention. The work done has benefited settlers considerably, and no land has been washed away excepting a piece at Savage's section. The remedy for this erosion is a cut through Woolfield's, and work has been delayed through non-agreement as to the price of land to be taken. However, the matter is now practically settled, and the work will proceed. Expenditure during the year amounted to £541 19s. 10d.

*Waihi Swamp (Maketu) Drainage.*—The field-work in this connection has been completed, and the Priestman dredger ordered last year was successfully finished in October. The pontoon for carrying the dredge was built by our own men on the ground. Actual dredging operations were commenced on Kaikokopu Stream. At the outset an exceptional amount of log timber was met, the logs being piled on top of each other in an irregular mass. Fortunately this timber ran out quickly, and little trouble in this connection is expected farther on. A distance of 57 chains has been completed, necessitating the dredging of 56,330 cubic yards of spoil. Already the settlers up-stream have received benefit from the work done. The expenditure on works during the year was £2,846 11s. 10d., but this does not include the cost of imported machinery. In future this area will be dealt with under the Swamp Drainage Act, 1915.

*Monavale Swamp, Cambridge.*—The plans for this scheme were completed, and all information furnished in a report to you for use of the interested settlers.

*Otway Settlement.*—The work done on this block consisted of forming 2 miles of road and cleaning 160 chains of drains, for an expenditure of £251 15s. 3d.

*Waipori Lake and River Engineering Survey.*—Details of this work are as follows: Traverse and levelling, 19 miles 23 chains; compass traverse, 6 miles 71 chains; cross-sections numbering 155 taken over 13 miles 2 chains. The plans have been plotted, but are not quite complete.

*Lees Valley Drainage Scheme.*—Engineering surveys were undertaken, and to date the following work has been done: Traverse and levelling, 5 miles 45 chains; traverse and levelling main drains, 12 miles 52 chains. It has been found impossible to procure the necessary labour to proceed with construction-work.

*Taieri River Engineering Survey.*—This field-work has been completed from Ferry Bridge to Outram, some 19 miles 44 chains of traverse and levels and cross-sections having been completed and mapped. Dam-contours have not yet been obtained owing to no substitute being available to fill the place of an officer engaged on the work who joined the Expeditionary Forces.

The following large schemes were carried out by this branch, and of course comprises the major proportion of the works: (1) Hauraki Plains drainage-works, (2) Rangitaiki drainage-works. These works are treated in separate reports, to comply with the respective Acts governing each.