

The rainfall was considerably below the average and no heavy falls occurred in a short period, so that flood-control works were not overtaxed, and there was no overflow of flood-waters from the main channel for the area—the Kaitaia River. The last occasion on which this channel overflowed was on the 6th June, 1930, prior to the opening of the Whangatane Spillway and the completion of the School Cut.

The spillway was opened in July, 1930 and the School Cut in December, 1930. Although no abnormally heavy rainfalls have been experienced since that time so as to test the works, there have been occasions on which flooding must have occurred but for the provision made by the spillway and the cut. It appears, therefore, that the works are sufficient to ensure immunity from flooding under conditions experienced in the last four years. During this time, however, the rainfall has been abnormally low and exceptionally evenly distributed as compared with previous years for which records are available.

*Whangatane Spillway.*—The banks of this channel have now consolidated and curves are protected with growth, so that no trouble from scouring is anticipated except at the intake, where further work may be required. Kikuyu grass planted on stop-banks at the lower end has become well established, and now forms good binding and protection for the embankments constructed of light peaty soil. Heavy raupo and other growth has covered the channel above the point where tidal influence is felt. The channel has not been kept clear of weeds, as their removal every year would be unduly expensive; but the heavy growth acts as a silt-trap and must eventually result in the raising of the bed of the spillway.

*Kaitaia River.*—Large poplars and other trees growing on the banks about Kaitaia Township are falling into the stream owing to scouring of the channel caused by increased velocity of the water during floods. Accumulations of these were removed during the year and stacked on the bank at a safe distance.

*Drains.*—57 m. 23 ch. of drains were cleared during the year, 31 m. were cleared in April, 1933, and contracts were let in February of this year for clearing approximately 60 m., of which 26 m. 23 ch. had been completed by the end of March.

*Stop-banks.*—Thirteen miles of stop-banks with fifty-four floodgates were inspected and minor repairs were carried out when required, 15 ch. of new bank were erected at one point on the foreshore where the old bank had been eroded by wave action, and some kikuyu grass was planted on the stop-banks during the winter.

*General.*—Maintenance of the plant stored on the area was attended to and some surplus plant was sold or transferred to other works. Priestman Dredge No. 7 could not be kept afloat owing to the condition of its pontoon, so the machinery will be removed and housed ashore, and the pontoon will be broken up to avoid obstructing the channel in which floating plant has been moored. A number of buildings have been transferred to "Small Farms" and removed to sites where they could be used on development work under this scheme, while the surplus tools and plant which could be utilized have also been transferred for use on Small Farms work.

*Proposals for Ensuing Year.*—Maintenance of existing drains, &c., is the only work proposed for the ensuing year.

*Works Expenditure.*—The total expenditure for the year was £1,171 1s. 11d., being practically confined to maintenance of existing drains.

*Drainage Rates.*—Rates struck amounted to £3,898 15s. 11d., and £1,529 15s. 6d. was collected.

#### HIKURANGI DRAINAGE AREA (50,000 Acres), WHANGAREI COUNTY.

*Rainfall.*—The rainfall throughout the year has not caused very severe flooding of the main swamp area. The year's total recorded at the Apotu gauge was 54.11 in., for a total number of 104 days with rain.

*Floods.*—The maximum stage recorded at the Jordan Bridge was 30.2 ft., which stage occurred once in the months of May and July respectively. It is expected that the further improvements to the river channel below Lewis's bridge will again lower the maximum stage at Jordan Bridge.

*Data.*—Data of precipitation of water stages, &c., have been collected continuously and plotted in graph form.

*Construction Work.*—Construction work through the year has been wholly in improvement to the river below Lewis's bridge.

#### *Excavator Work.—Wairua River.*

*Main Diversions and Spillways.*—No work has been carried out during period under review.

*River Improvement.*—No. 14 Bucyrus has improved the approach to No. 1B diversion excavated over the rock and rubble bar from 2 m. 45 ch. to 53 ch., widened the channel from 3 m. 4 ch. to 11 ch., and excavated the rock bar at 3 m. 10 ch.

No. 14 Bucyrus has also carried out deepening and widening of No. 3 diversion, improvement to the river channel near the outlet of No. 4 diversion, and removal of rock bar from 5 m. 65 ch. to 77 ch.

No. 13 Bucyrus has carried out widening, removal of isolated rock bars from 4 m. 30 ch. to 5 m. 65 ch., and has improved the river channel near the inlet to the No. 4 diversion, also removing timber from the old river channel around the diversion.

Hand work has been commenced in removal of willows near the inlet to No. 6 diversion.

#### *Hand Work.*

As distinct from the above river improvement, hand work in the main swamp area has been done only by relief labour.

*Otonga Outfall.*—Improvement to the main outfall has been done from 1 m. 30 ch. to 75 ch.