

crossings built. In all, drainage work completed during the year has aggregated 4 miles 36 chains of new drains dug, 37 miles 4 chains of old drains reconditioned, 12 miles of stop-banks, and miscellaneous structural work on flood-gates and crossings.

POVERTY BAY CATCHMENT DISTRICT

The steep mudstone hills in this district make it one of the worst in the Dominion for slipping and gullying. Consequently much work is being done with gully plugs, tree-planting, and other conservation measures. The Board maintains a special works unit to carry out experimental gully control work and to demonstrate the construction of gully plugs and debris dams to farmers. This demonstration work has been very successful and a number of farmers are now competent to undertake the construction of their own conservation works. For the control of various kinds of earth movement the Board has completed nine minor tree-planting schemes and thirty-two minor gully works. Experimental work to determine the most suitable type of dam for multiple installation in a gully and to test methods of stabilizing hillsides and reclaiming wide aggrading stream-beds is being carried out at Waerenga-o-Kuri Reserve and in the Te Weraroa Stream Catchment of the upper Waipaoa.

A major scheme for the control of 28 miles of the Waipaoa River has been designed. The timber groyne at the mouth has been repaired and extended and two Case groynes built to trap sand. These have been very effective. A series of five permeable timber groynes are to be built at Te Wairau Bend, and to date one groyne 150 ft. long has been constructed. A length of 34 chains of bank has been protected from erosion by anchored trees interspersed with plantings of boxthorn. The largest flood so far recorded in the Waipaoa occurred in May.

The May flood caused considerable deposition of silt on the river-flats in the lower reaches of the Waipaoa, completely choking drains. These have been cleaned out, partly by drag-line, but mostly by hand, the total length being 38 miles 4 chains.

Other river-works carried out have been the protection of 40 chains of the Waiapu by means of anchored trees, fascines, and willow planting, and the clearing of 3 miles 15 chains of willows in the Waihora. Second-growth willows have been sprayed with hormone in the Waihora (5 $\frac{3}{4}$ miles) and in the Hikuwai (11 $\frac{1}{2}$ miles). The digging of the main channel for the Taraheru drainage scheme has been completed, a length of 2 miles 40 chains.

HAWKES BAY CATCHMENT DISTRICT

This Board is concerned with shingle rivers, willow infestation, slipping hillsides, and sheet and wind erosion. Tree-planting has been used to advantage in stabilizing slips. A nursery has been established to provide suitable trees and twenty-one minor tree-planting schemes have been completed. Two minor gully works were also carried out.

A scheme has been designed to control the Tuki Tuki River for a distance of 6 miles upstream from its mouth. In the neighbourhood of Waipukurau and Waipawa work has been in progress for the last three years on the improvement of the Manga-o-nuku, Waipawa, Upper Tuki Tuki, and Makaretu Rivers. This has chiefly consisted of willow-clearing in the main channels, willow-planting on the banks, with the associated fencing to protect the young growth from stock, and the construction of anchored tree and willow fascine bank-protection. During the year 6 miles 50 chains of river has been cleared of willows and 34 chains of heavy and 2 miles 30 chains of light bank protection completed.