

On the lower Waihou maintenance has been carried out; all the flood-gates have been overhauled, cleaned, and painted. Five small culverts complete with flood-gates were installed under stopbank between Netherton and Turua. The whole of the construction work on the lower Waihou—i.e., from Ngahina down-stream to Huirau Road and Wharepoa Ferry—is finished.

On the Ohinemuri River general maintenance has been carried out, and deepening and enlargement of major drains has been done by drag-line machine.

The plant has been efficiently maintained.

The average number of men employed on these works was fifty-five.

#### TAIERI RIVER.

My report for the previous year indicated that, with the exception of some improvement work required to the contour channel, the scheme of protection works was completed.

During the year covered by this report the improvement work on the contour channel has been completed. This extended over a length of four miles, the work consisting of deepening and enlarging the channel, the work being done by drag-line excavator. Provision has been made for spillways, so that the peak of flood-discharges will be released from the contour channel without damage to the channel. The water so escaping will reach the pumping-station by other canals or drains and be there pumped to Lake Waipori.

The whole of the work to be carried out by the Department on the Taieri Plain is complete, and the Taieri River Trust is carrying out maintenance.

#### MARINE.

##### LIGHTHOUSES.

*North Cape Lighthouse.*—A new flashing-apparatus has been installed in the original lens to take the place of the original flasher, which had not been wholly satisfactory.

*Matakaoa.*—This light has been equipped with a new automatic acetylene flashing-apparatus.

*Cape Maria Van Diemen.*—Surveys were made and investigations carried out in regard to the transport arrangements between the landing-stage and the tower, keepers' houses, &c. Owing to the financial stringency the new proposals have not yet been put in hand, but it is hoped to proceed with them early. Measures are also in hand to deal with the drifting sand, which causes considerable inconvenience at this station.

*East Head.*—A site has been selected for this light on East Head, Akaroa Peninsula, and the necessary flashing-apparatus, lens, and lantern have been ordered. This light, being located on the main salient point of the Peninsula, should be of great assistance to coastal traffic both from north and south. It is proposed to call this "Le Bon Light," after the bay of the same name, which is adjacent. This will avoid any confusion with the existing East Cape Lighthouse in the North Island.

*Portland Island.*—A radio telephone set has been established at this station, which should considerably relieve the isolation and enable the keepers to be in constant communication with the mainland in case of emergencies.

*Baring Head.*—An area of land has been acquired for the new light in this locality, which will take the place of the existing high-level light at Pencarrow. A contract is being let for the construction of the access road, and it is expected that contracts for the erection of cottages, fog-signal house, tower, &c., will be proceeded with almost immediately. The apparatus will be of a powerful flashing type, and, being erected on this salient point, should be of great assistance to shipmasters. The new light erected by the Harbour Board at the entrance will then take the place of the old Pencarrow Head Lighthouse, which has been in operation for over seventy years.

*Godley Head.*—The necessary apparatus for converting this light from a fixed oil-burner to a flashing type has been ordered, and the conversion should be completed early in the coming summer. Although this light is still thoroughly efficient, the universal use of powerful public and domestic electric lights render the fixed character unsuitable, and it is for this reason that the change is being made.

*Taiaroa Heads.*—A new powerful fog-signal, constructed on the diaphone principle and similar to those already installed at Pencarrow and Godley Head, was installed. It is housed in a reinforced-concrete building, and is a great improvement on the old explosive signal.

*Okuri Point.*—Repairs have been carried out to the landing-gantry.

*French Pass.*—Some dangerous overhanging rocks which were shattered in the earthquake have been removed, as they were threatening the safety of the station.

*Brothers.*—A contract has been let for a new crane for the north landing, and some of the rocks which were dangerously overhanging the south landing and crane have been removed. The buildings generally on this station are getting old, and a general overhaul will have to be undertaken during this coming year.

*Kahurangi.*—A new 800 mm. lens has been installed in this lighthouse to take the place of the old lens, which was irretrievably damaged by the earthquake, and new cast-iron segments have been erected, some of the original segments having been badly cracked. The light itself is operated automatically, the illuminating-apparatus consisting of a Dalen burner using acetylene gas. Provision is being made this year for the erection of a new keeper's house, the old houses being practically destroyed by the earthquake, and the single keeper there is at present occupying only temporary accommodation.