

APPENDIX III.—LAND-DRAINAGE OPERATIONS.

(O. N. CAMPBELL, Chief Drainage Engineer.)

ALTHOUGH no new large works have been undertaken during the past year reports have been prepared on drainage schemes ranging from 65,000 acres in extent down to that of an isolated farm. Owing to the higher standard of farming required, the number of these latter small schemes reported on has shown a considerable increase. In some cases an engineering survey was necessary, especially in flat peaty country, but in others an inspection sufficed for report purposes.

Among the number of special inspections and reports made were the following: Whakaki Swamp; Poukawa Swamp; Crown land, Block V., Opoe S.D.; Uretiti Kauri-gum Reserve; native lands at Te Kao and Te Mapara; Napier Reclamation; Kongahu Swamp; Bartholomew Bros.' property; Demonstration Farm, Dargaville; Section 13, Block VIII, Rangaunu S.D.; part of Puni Settlement, Kopuku Settlement; part O.L.C. 85, Mangamuka S.D.; Sections 25-30, Block VIII, Motatua S.D.

Works done by local bodies out of grants and subsidies have been examined and passed, the total amount approved for payment being £6,138 10s. 6d.

Separate reports as required by statute have been prepared on the Hauraki Plains area, Rangitaiki Plains area, and the areas administered under the Swamp Drainage Act, 1915.

The following is a short report on general works carried out by this branch:—

Reporoa Settlement.—The maintenance of drains only has been attended to this year, as the Public Works Department carried out repairs to the roads during the summer.

As well as cleaning the drains the Waiotapu Stream was attended to, and it is evident that this stream requires to be dragged each year, otherwise the water-level becomes high and a medium fall of rain would cause an overflow.

The expenditure during the year was £366 6s. 7d.

Hamilton Swamps.—The report on the Woodlands or eastern portion of the area was completed. This area comprises approximately 65,000 acres, ranging from solid land to peat, up to 35 ft. in depth.

The report has been discussed by the several Drainage Boards which have jurisdiction in the area, and the scheme generally approved, but the question of the necessary finance in order to carry the scheme through appears to be the stumbling-block.

The report on the Rukuhia portion of the area, situated to the south-east of Hamilton, has been partially prepared. The total expenditure on the areas for the year was £195 1s. 3d.

Orongo Settlement.—During the year the maintenance of the works on this area was carried out by means of a special grant. This included the maintenance of drains, stop-banks, and flood-gates.

The expenditure was £627 10s.

Maramanau Settlement.—At the end of the previous year the erection of the three-barrelled concrete flood-gates at the junction of the big drain with the Tauherenikau Stream was practically completed. The work carried out since that date has consisted of the laying of the balance of the concrete, the rebuilding of the stop-bank over the structure, and the construction of short drains in order to connect the new gates to the previously existing drainage-system.

The gates have been in operation for about ten months, and when inspected were found to be working satisfactorily, but, in common with all similar structures, they will require regular inspections by the settlers benefiting from the construction of the gates.

The expenditure during the year was £384 11s. 7d.

Te Pu Kaharoa Bore.—After the failure to obtain water with the first bore, a contract was arranged with a Hamilton firm to sink a second one, on the basis of no water, no pay.

This second attempt was made on Section 7, Block VIII, Rotorua S.D., at a height of 485 ft. above Lake Rotorua.

The bore was drilled for 453 feet, before water was struck, the water rising up 120 ft. in the pipe from the bottom of the bore. The country bored through is all rock with the exception of the first 10 ft. of pumice.

The rock is all volcanic, ranging from soft to very hard, and is very badly shattered.

At the lower depths a rotary drill, in conjunction with chilled shot, was used, as the rock was too hard for the ordinary pump-drill. By using a pump a supply of about 200 gallons of water can be obtained. This water is cool, clean, and practically clear of all sediment, and should be quite satisfactory for stock.

The total cost of the bore during the year was £251 0s. 10d.

Hereford Park Water-supply.—As mentioned in last year's report, the original ram installed was not a success, but this has now been replaced by a Blake ram, which should give satisfaction, provided it is efficiently maintained and cared for by the settlers.

Waiare Water-supply.—This installation was handed over to the settlers during the year, but from reports received the ram does not appear to be inspected by the settlers at regular intervals. Unless this is done no scheme of this description can be expected to give satisfaction.

The expenditure was £153 6s. 2d.