

APPENDIX III.—LAND DRAINAGE OPERATIONS.

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During the past year the Land Drainage Branch has been actively engaged in attending to matters pertaining to land-drainage and river-protective works generally. The passing of the Swamp Drainage Act, 1915, has further increased the scope of this branch. A separate report on works carried out under this Act is being forwarded.

Special inspections and reports were made in connection with the following: Ashley River—Oxford East water-supply; Steward Settlement protective works; Lees Valley drainage; Waipaoa River; Moutoa Estate drainage; Takapuna water-supply; Waikanae River improvement; Waipa River improvement; Rangitikei River improvement; Omapere Lake drainage; Hook River; Ody's Swamp; Taieri—Waipori Rivers engineering surveys, &c.; Mamaku water-supply; Raupo drainage-works; flood damage between Otorohanga and Te Kuiti; Waikato River Board works; Waikato River and tributaries; Seaward Moss Swamp; and also on other minor works.

Work done by local bodies out of Government grants and subsidies was inspected and certified to, plans and specifications for such works being examined for approval or otherwise. Vouchers in this connection, totalling £2,559 10s. 9d., were prepared and certified to for payment to the local bodies through Treasury.

Hereunder is a short report on works that have been carried out in connection with various grants expended by this branch:—

Hauraki Plains: Orchard East Road Extension.—This work connects the Orchard Road with the Turua—Netherton Road, and is the direct outlet for the Piako River bridge at Ngatea (Orchard), now in course of erection. The sum of £56 was spent in clearing and road-formation.

Hauraki Plains: Waikaka Tramway Road.—The work on this line has all been maintenance, workmen being employed continually throughout the year keeping it in good repair. Expenditure for the year was £268 15s. 6d.

Hauraki Plains, Metalling Roads in.—This work has been enumerated in the Hauraki Plains Report. Some 5 miles 5 chains was metalled during the year, spread over the following roads: Kerepehi—Kopuarahi, Orchard East, Te Hopai, Patetonga access road, Orchard Wharf approach, Pipiroa—Waitakaruru, and access to wharf, Waitakaruru. The cost of work done during the year amounted to £4,893 9s. 2d.

Hauraki Plains: Maintenance existing Drains, &c.—This vote is for maintaining drainage-works on settled portions of the Hauraki Plains. The expenditure during the year was £2,094 11s. The expenditure was greater this year, due to some of the drains requiring two cleanings instead of one, on account of abnormal growth of vegetation consequent upon a very wet season.

Opouriao Protective Works.—As last year, the chief work has been repairs and maintenance of existing works. The proposed cut at Section 6, Block XII, Whakatane, referred to in last year's report, has been completed, and a boom groyne erected across the old channel. At the back of Section 10 the river showed signs of changing its course, and as this would give a better line steps were taken to protect the new channel, and the old one is gradually silting up. Below the Tanetua Bridge, at the junction of the Waimana and Opouriao Rivers, important works are being carried on. A portion only can be done each year, as it takes time for the work to become consolidated and the willows firmly established. An increasing amount of driftwood is noticeable in the more recent floods, and this trouble will probably increase as the bush is felled above the Waimana Settlement. The expenditure during the year amounted to £639 17s. 1d.

Waimana River Protective Works.—The chief work has been the cutting of the diversion channel through Woolfield's Section 19, Block III, Waimana Survey District. Work was commenced with four scoop teams, but on account of the high state of the river, the hard nature of the country, and the scarcity of drivers the channel was not made as deep as was intended. A permanent stream now flows through the channel, and recent floods considerably enlarged it. The project is a great success, and is giving immense relief. At Section 2 four groynes have been erected and the bank protected by establishing willows. Maintenance of existing works, and works generally, have been impeded by excessive rainfall and poor quality of work offering; but notwithstanding, no complaints have been received as during former years before the works were started. The expenditure during the year was £1,004 19s. 5d.

Otway Settlement.—The work done on this block consisted in forming 1 mile 11 chains of road and cleaning 28 chains of drains, at an expenditure of £105 13s. 6d.

Waipori and Taieri Rivers Engineering Surveys.—The work done last year was continued as follows:—

Waipori River: The proposed deviations were pegged and levelled and cross-sections taken. A set of soundings was taken across the Waipori Lake, tide-gauges being erected to harmonize soundings. The deviation from Waipori Outlet to Berwick was altered and poled afresh across Waipori Lake.

Taieri River: Cross-sections from Wardell's to Outram were extended over either bank and continued up the river above Outram for two miles. River sections were also taken below Wardell's and Maori Leap for tidal weir purposes. Tide-gauges were erected in the Lower Gorge between Wardell's and the mouth and connecting levels run. The total levels run were fourteen miles, and three miles of traverse, together with about ten miles of continuation of cross-sections. Three