

APPENDIX III.—LAND DRAINAGE OPERATIONS.

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During the past year the Land Drainage Branch has been busily occupied in drainage and kindred operations. The year has been an exceptionally heavy one and the work has increased greatly. Separate reports have been made on the Hauraki Plains, Rangitaiki Plains, Kaitaia, Waihi, and Poukawa land-reclamation works. Many special inspections and reports have been made, including Waikato River inspection, Raupo drainage-works, St. John's Lake, Taieri and Waipori Rivers, Tokatoka Swamp works, Hikurangi Swamp, Kawakawa Swamp, Kaituna River, Waikare Lake, Makowhai Settlement, New River reclamation, Lees Valley, Waipaoa River, Waimata diversion, Matata water-supply, Akaaka drainage-works, Cricklewood water-supply, Lambrook Swamp, Brinkwood Swamp, Stirling flooding, Otanomomo Settlement flooding, Barnago Settlement flooding, Kaitangata flooding, Tokomairiro River flooding, Hales Swamp inspection, Seawood Moss, Invercargill reclamation-works, Aparima River, Earnscleugh Settlement, water-race and flooding by Fraser River, Weatherston Creek, Lawrence flooding, Stewart Settlement flooding, Waitaki River protection, and many other minor works.

Works done by local bodies out of grants and subsidies were inspected, and plans and specifications of such works were examined and approved. Vouchers totalling £2,085 19s. 10d. were passed for payment to the different local bodies.

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

Hauraki Plains, Metalling Roads in.—Full details are included in the report on Hauraki Plains Settlement. A total distance of 5 miles 2 chains was metalled during the year, the works comprising the following roads: Hopai Road, Ngatea-Pipiroa Road, Patetonga Road. These roads were metalled to a width of 13 ft. Total expenditure, £4,337 3s. 1d.

Hauraki Plains: Maintenance of Completed Works, Drains, &c.—The maintenance of existing drains, &c., involved a large expenditure during the year owing to the heavy growth in drains necessitating much cleaning. Work was done partly by piecework contract and partly by day labour. Total expenditure, £4,523 14s.

Awaiti Block Outfall.—This necessary work was completed in July, 1918, and much benefit was derived from same during the winter. The drainage of the Awaiti district is now more efficient than ever it was before. Total expenditure, £815 8s. 3d.

Waitakaruru Loan Block.—The work consisted of maintaining the drains and roads, and was performed by day labour. Total expenditure, £313 16s.

Waitakaruru Stream Improvement.—This work is still being carried on by dredge No. 2, the object being to straighten and deepen the stream. The work has taken longer than was anticipated, owing to the heavy country encountered and need for erection of dams to bank up water and enable pontoon to float. Total distance dredged during the year was 81 chains. Total expenditure, £858 17s. 4d.

Piako and Waitoa Rivers Improvement.—This work is being carried on by dredge No. 1, and the intention is to straighten and deepen the courses of the streams. Very good progress has been made considering the hard oxidized nature of the country dredged. In some places 4 ft. to 5 ft. of pumice sand was encountered on a bottom of very hard sandstone and clay. A total distance of 55 chains was dredged during the year. Total expenditure, £925 0s. 3d.

Wharepoa-Kerepehi Drainage Outfall.—108 chains of drains were cleaned during year. Total expenditure, £65 2s.

Ngaurua Road and Canal.—A distance of about 130 chains was formed during year. The expenditure was heavy owing to the extra depth of spoil required to be deposited in order to make a good road on the treacherous peat, a thickness of 2 ft. to 3 ft. being put on. Total expenditure, £1,183 13s.

Kopu Ferry Road.—New drains were put in by contract on both sides of road and the spoil levelled for road-formation, a distance of approximately one mile being completed. Total expenditure, £876 18s. 2d.

Waitakaruru-Pokeno Road.—Work done consisted of about 18 chains of very heavy cutting and filling. Total expenditure, £284 11s. 6d.

Otway Settlement.—A light bridge to carry about 3 tons was erected over the Waitoa River. This was designed to give access to the creamery. Total expenditure, £270 10s.

Lees Valley Settlement.—Contracts for the creek diversions and drains were let in March, 1918, and work has proceeded since then with the exception of a break at the time of the influenza epidemic. Some difficulty was experienced in getting sufficient labour, but all contracts are now proceeding satisfactorily. About 300 chains of drains were excavated by the end of the period under review. The work of cutting diversions in Duck Creek is being carried out with expedition, seven spillways being completed. Owing to the exceptional spell of dry weather since the New Year the swamps are very dry, so that it is not possible as yet to say what amount of good the drains are doing. Given a good winter the majority of the drains should be completed early in the spring of this year. Total expenditure, £802 4s. 8d.

Tarawera River Bank-protection.—A considerable amount of bank-protection and willow work has been done during the year near the Otarakuti Bridge. A large amount of banking was also done in constructing the approaches to the Otarakuti Bridge, and there should now be no fear of floods affecting the embankment. Near the old Tarawera flax-mill construction of a bank was commenced, but not a great amount was completed during the year. This work will be proceeded