

APPENDIX III.—LAND-DRAINAGE OPERATIONS.

(R. G. MACMORRAN, Chief Drainage Engineer.)

Separate reports have been prepared covering the main land-drainage works—viz., Hauraki Plains, Rangitaiki, Kaitaia, Hikurangi, Waihi, and Poukawa—which comprise the major work of this Branch.

Inspections and reports on general drainage matters have been made in several cases—viz., Koromatua Block, Onepu Block, Wairakau Settlement, Reporoa Settlement, Williams Settlement, Paritu Block, Pukemapou, Lake Rerewhakaitu, Puketotara Block, Wharekohe Block, Onewhero Block, Tikinui Block, and Te Kuri Block. Grants and subsidies to local bodies have been supervised and inspected, and vouchers in this connection totalling £23,665 have been passed for payment.

Hereunder is a short summary of some of the general work, exclusive of the main works mentioned above.

Koromatua and Onepu Blocks, and Reporoa Settlement Sections.—Drainage and general development works have been carried out on these areas. In the Koromatua Block 2 miles 25 chains of drains were constructed, and 2,998 yards of clay ballast carted for road-formation. In the Onepu Block 2 miles 64 chains of new drains were constructed, and 1 mile 78 chains of old drains reconditioned. Living-quarters were erected for employees, and 525 acres of manuka cut and burned. At the end of the year 200 acres had been manured and sown in grass, and material ordered for fencing this land. A scheme was drawn up for draining unlet sections in Reporoa Settlement. The work done comprised 26 chains of new drain, 77 chains of drain widened and deepened, and 95 chains of drain formed by straightening and improving old stream-beds.

Kerepehi Block Roads Metalling, Hauraki Plains.—This Block, on Hauraki Plains, was opened for selection in May, 1930, and the twenty-three sections offered were all taken up. The work of metalling 3 miles 57 chains of road was completed in February, and during the period under review base-course metal was laid for a distance of 63 chains and surface course completed on 3 miles 57 chains of road with 4,856 cubic yards metal, delivered by scow to various points on the river-bank and carted when required on to the road.

Patetonga Riding Roads Metalling, Hauraki Plains.—This work is now in its last season, and comprised the widening, improving, and metalling of 7 miles of Patetonga Main Road and 1 mile 20 chains of Patetonga Landing Road. The work on the Main Road comprised 51 chains of hill road reconstruction, spreading 4,710 cubic yards metal, and cartage of 1,285 cubic yards clay for haunching metal. On Patetonga Landing Road base-course metal was laid for 1 mile 20 chains with 1,095 cubic yards metal and 580 cubic yards clay carted. The metal for these roads is obtained from a quarry in the vicinity opened up by this Branch.

School Cut (Kaitaia).—This work was commenced in August and a new cut 30 ft. wide at bottom with an average depth of 18 ft. constructed by drag-lines for a distance of 20 chains with 5 chains old river-bed widened and deepened, entailing the dredging of 48,850 cubic yards of spoil. The new channel was bridged at Church Road and flood-gates and culverts installed for the drainage of adjacent lands. Other works entailed erection of fences and provision of new playing-area for Kaitaia Public School. The new playing-area has been drained, cleared, and ploughed, and will be finally worked up and levelled for grass-sowing as soon as the ground is in a favourable condition.

Pukemapou Settlement.—Work comprised the drain formation through Crown, Native, and private land to provide an outlet for low-lying sections (11 and 12) in this settlement. Some 3 miles 44 chains of drains were constructed or improved, entailing 8,826 cubic yards excavation. The work done will enable these hitherto wet sections to be offered for selection at an early date.

Te Aute Swamp, Hawke's Bay.—An engineering survey was undertaken of the area of swamp under offer to the Crown by Mr. C. A. Williams and adjoining swamp lands. This swamp has been in the process of draining for some forty years, but a considerable portion has sunk so low that gravity drainage fails during the wet season and considerable flooding occurs. The survey was carried out to determine whether the gravity drainage system could be improved so as to completely drain the area without resource to pumping. Some 3,250 acres were dealt with, entailing some 20 miles 50 chains of traverses, 27 miles 30 chains of levels, 122 cross-sections, 71 peat soundings up to 33 ft. deep, and 11 borings.

Summary of Work done:—

	Miles	ch.		Miles	ch.
Cleaning drains	305	22	Levels taken	140	79
Widening and deepening drains ..	52	1	Traverses run	111	63
Constructing new drains	51	31			Number.
Dredge-cuts and canals (new) ..	4	43	Flood-gates built	18	
River and canal improvements ..	30	64	Pile bridges erected	4	
Roads formed	3	13	Silt bridges erected	5	
Roads metalled	2	28	Road culverts constructed ..	25	
Roads partially metalled	8	41			Cubic Yards.
Stop-banks formed	1	74	Metal used for roads	12,568	
Stop-banks raised and strengthened ..	16	23	Clay carted for roads	9,598	
Stopbanks repaired	13	0	Spoil excavated by floating and dry-		
Fences erected	3	11	land excavators	1,123,045	
			Rock excavated	21,080	

Office.—The expenditure passed through the books totalled £148,304 6s. 9d., of which amount £43,272 19s. 3d. was paid from Thames and Whakatane Imprest Accounts and £44,464 4s. 8d. through the Auckland Branch of the Treasury.

Some 269 piecework and co-operative contracts were let and 3,294 vouchers prepared and passed for payment. The revenue collected totalled £17,750 5s. 2d.

Rates.—Rates levied on Hauraki Plains, Rangitaiki, Waihi, and Kaitaia areas totalled £18,657 6s. 7d., entailing 1,851 rate notices. Rates collected amounted to £11,787 2s. 10d.

Photostat.—This machine was in operation on sixty-one occasions, with a total of 4,671 prints taken for use as follows: Our own operations, 1,233; Departments (no charge made), 1,444; other Departments (charged), 960; Hawke's Bay plans, 870; spoils, 64.