1928. NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.

RANGITAIKI LAND DRAINAGE.

REPORT FOR THE YEAR ENDED 31st MARCH, 1928, TOGETHER WITH STATEMENT OF ACCOUNTS.

Presented to both Houses of the General Assembly in pursuance of Section 10 of the Rangitaiki Land Drainage Act, 1910.

SIR,-

Department of Lands and Survey, Wellington, 30th June, 1928.

I have the honour to submit herewith the report upon drainage operations in the Rangitaiki Plains for the year ended 31st March, 1928, pursuant to the provisions of the Rangitaiki Land Drainage Act, 1910.

The accompanying statement of accounts and balance-sheet shows the financial transactions for the year, and the position of the account as at the 31st March last. A plan of the drainage district is attached.

I have, &c.,

J. B. THOMPSON,

The Hon. A. D. McLeod, Minister of Lands.

Under-Secretary for Lands.

REPORT OF CHIEF DRAINAGE ENGINEER.

Sir,—

In accordance with the provisions of the Rangitaiki Land Drainage Act, 1910, I have the honour to submit my report for the financial year ending 31st March, 1928.

At the beginning of the period the major works still requiring completion were the Tarawera River dredging, Omeheu Canal improvement, and the Kopeopeo Canal diversion. Of these, the first was carried on to a point where completion will be assured during the coming year, whilst the Omeheu Canal widening, which was commenced late last year, was completed towards the end of the period under review. The construction of the Kopeopeo diversion, as recommended by the Rangitaiki Royal Commission of 1925, was commenced with one Monighan dredge. Late in the period, a second Monighan was made available to assist in pushing this work on to completion as expeditiously as possible.

No severe flooding was experienced on the area during the winter, and the exceptionally dry summer was of immense benefit in assisting the drying-out of the low-lying and newly drained portions of the area. This benefit has more than offset the set back to the higher and lighter country on the Plains.

Another record for production was established by the Rangitaiki Plains Dairy Company, the manufacture of butter for the year totalling 1,558 tons, an increase of 258 tons over last year's figures. The Tarawera Cheese Factory manufactured 300 tons, last year's total being also 300 tons.

The prospects for the coming season are encouraging, as the existing herds are being improved, whilst in addition arrangements are being made for the milking of new herds. The improvement in the price of beef, if sustained, should assist in an increase in prosperity for this district. The

completion of the East Coast Railway, which crosses the Plains, should be a big factor in reducing the cost of manures, which must play a very large part in the development of this area of flat land. This is, however, not the only advantage, for the rapid transport of fat stock—the local freezing-works being closed—will eliminate the losses associated with driving this class of stock over long distances.

During the past session of Parliament further relief was given to the settlers on this area by the passing of section 12 of the Finance Act (No. 2), whereby the rates for capital expenditure are made payable on a graduated scale commencing at a low figure and extending over a period of ten years, the deficiency in each year being capitalized. At the end of the tenth year period rates will be levied on the then capitalized cost extending over a period of fifty years. The easing of the rates has resulted in these remissions being made available for development-work on the lands within the area, with the result that there has been a decided improvement in the pasturage.

Rainfall.—The average rainfall, as recorded at Thornton, for the past ten years has been 54·02 in., last year's figures being 63·07 in., which fell on sixty-nine days. The wettest month was July, when 15·42 in. was recorded, whilst the driest was January, with a fall of 0·39 in.

Eastern District.—The land necessary for the construction of the Kopeopeo diversion having been taken under the provisions of the Public Works Act, it was possible to proceed with the excavation in June. Later in the year the construction of the flood-gates near the junction of the diversion with a back-water of the Whakatane River was commenced. This is a concrete structure, and four Calco flood-gates, each of 5ft. diameter, are being installed. Considerable difficulty was experienced with the foundations, both from water and sand, but this work is now well on to completion, and will be available before the necessary dredging is completed, connecting the diversion on to the existing system of drainage. The maintenance of the existing drains, &c., was the only other work carried out in this area.

Western District.—The stop-bank and improvement of the Tarawera River was carried on to a point nearing completion. In addition to the raising of the eastern stop-bank, a considerable length of widening and deepening of old diversion channels was carried out with a view to giving the river a reasonably even cross-section throughout. It is found that wandering stock do considerable damage to the completed pumice stop-bank by starting small slips, which lead to considerable erosion, and it is necessary to have the banks permanently patrolled. As the bank is absolutely necessary to the security of a large portion of the Plains, it is essential that all stock should be prevented from wandering there, and the only remedy is the erection of substantial fences.

The works on the Tarawera River have been carried out with a view to the stabilizing of the water-level, and, although it is too soon to give a definite statement, there has been practically no other variation in the upper reaches, except due to the seasonal discharge of the river. When dredging is completed above the railway, the records should show whether the desired object has been attained.

The widening and improvement of the Awaiti-Omeheu outfall was completed during the period, pronounced tidal action being carried as far south as the railway. A substantial stop-bank was erected on the east bank to protect the low-lying country in and about the Omeheu Settlement, and this bank was continued south to the railway along the Omeheu adjunct drain. Three Calco flood-gates were erected under this stop-bank.

A short length of drain through Section 140, towards the cost of which the settlers concerned contributed, was constructed by the Bay City dredge.

The usual maintenance of hand drains and minor improvement work were put in hand throughout the area.

Dredges.—Four dredges comprising two Monighan drag-lines, one Priestman, and one Bay City dipper dredge have been operating part time during the period. A total of 359,080 cubic yards of spoil was dredged, covering a distance of 9 miles 68½ chains. The cost per cubic yard of the material excavated was 5·28d.

The following table shows the total amounts excavated, and the cost per cubic yard for the past nine years:—

	Cubic	Cost per		\mathbf{Cubic}	Cost per
	$\mathbf{Yards}.$	Cubic Yard.		Yards.	Cubic Yard.
1919-20	 176,672	6.62d.	1924-25	 626,762	5.56d.
1920-21	 215,768	8.82d.	1925-26	 431,277	5.88d.
1921-22	 473,994	6.68d.	1926-27	 227,006	6·05d.
1922 – 23	 540,802	8.13d.	1927-28	 359,080	5.28d.
1923-24	 788,059	5·59d.			

No. 8, Priestman Dredge: This plant continued working northwards in the Tarawera River, raising the east bank stop-bank and improving the channel, and at the end of the period was within 30 chains of the railway bridge. The distance covered during the year was 270 chains, a total of 127,800 cubic yards of spoil being removed.

No. 9, Priestman Dredge: This plant has been laid up throughout the period. The machinery has been kept in first-class order in readiness for future maintenace work.

No. 17, Monighan Dredge: This plant was engaged for the major part of the year on the Omeheu Canal, where excellent work was accomplished in excavating material which was too difficult for the Priestman dredge when the canal was originally constructed. On completion of this work the machine was transferred by sea to the Whakatane River to assist in the completion of the Kopeopeo diversion. To begin with, the dredge was worked from a pontoon, improving the tidal creek into which the Kopeopeo will discharge, and although not designed for this class of work, good progress has been maintained. During the year a total of 123,180 cubic yards of spoil were dredged, the distance covered being 268 chains.

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No. 18, Monighan Dredge: This plant, after being idle for some time, was placed in commission on the Kopeopeo Canal, and to date has done a creditable amount of work under fairly difficult conditions. The spoil excavated is being placed on either side, and one bank will eventually be used as a roadway and the other as a stop-bank, both serving to prevent the escape of flood-waters on to the adjoining low-lying country. The distance covered during the period was 111½ chains, a total of 90,600 cubic yards of spoil being excavated.

No. 21, Bay City: This dredge was put into commission early in the period to excavate a drain to serve low-lying country in Sections 137A and 140, which cannot economically be drained into the Omeheu Drain. This was completed after two months' working, and the plant was again laid up. This plant will shortly commence maintenance work in the Tarawera Western Drain. The length of canal completed during the period was 70 chains, 17,500 cubic yards of spoil being excavated.

Bridges, Flood-gates, &c.—In addition to the large Kopeopeo flood-gate, three small flood-gates

and seven sill bridges were erected during the year.

Drains and Stop-banks.—The only new stop-banking carried out in the period was that done by the dredges and already enumerated. A length of 87 chains of existing drain was taken over and improved.

Drains in Operation.—The total length of drains in operation is as follows: Dredge cuts, 67 miles

35 chains; main outlet drains, 106 miles 24 chains; road-drains, 30 miles 46 chains.

Roads opened.—The total length of roads opened is 113\frac{1}{2} miles, of which 85 miles have been constructed by the Department.

Buildings.—These consist of Engineer's cottage, and twelve cottages and huts for workmen, office buildings, machine-shop, smithy, store, sheds, &c. All men occupying quarters pay rent for same.

Workshops.—The workshop and smithy have been kept fully employed on repair work for dredges and general machinery, and the ironwork for general construction-work.

Rolling-stock.—The Thornycroft lorry, now in its seventh year, has done practically all the general

cartage of supplies throughout the works.

Plant and Machinery.—This consists of two Priestman grab dredges, two Monighan walking dragline excavators, one Bay City walking dipper, one Priestman pontoon, two coal-punts, three oillaunches, and six small boats and punts.

Summary of Work Done	e :			Μ.	Ch.	Cub. Yds.
Cleaning drains		 	 	107	0	
Deepening and wid	lening	 	 	3	17	5,140
Spoil dredged		 	 	9	$68\frac{1}{2}$	359,080
Levels taken		 	 	66	50	
Survey traverses		 	 	7	0	

Proposed Works.—Completion of the Tarawera stop-banking and river improvement; Kopeopeo diversion excavation, flood-gates, bridges, and road formation, and general maintenance included in which is the redredging of the Tarawera Western Drain.

Rates.—Some 725 demands for rates were issued during the year covering a total sum of £4,716

14s. 8d. During the year rates collected amounted to £7,133 0s. 6d.

Works Expenditure (General).—The total amount of expenditure recorded for the year was £16,550 6s. 10d., day labour accounting for £8,651 3s. 1d., and forty-six piecework contracts totalling £1,394 16s. 9d. The sum of £9,486 1s. 7d. was paid from Whakatane Imprest Account.

I have, &c.,

R. G. MACMORRAN,

The Under-Secretary for Lands, Wellington.

Chief Drainage Engineer.

RANGITAIKI LAND DRAINAGE ACCOUNT.

RECEIPTS AND PAYMENTS ACCOUNT FOR YEAR ENDED 31st MARCH, 1928.

		Recei	pts.							Payments.			
To Cash in Pub	lic Accou	nt, 1st Apr			s.	d.	£	s.	d.	By Drainage-works, stop-banks, cleaning channels,	£	s.	d.
1927				4,839	4	4				and other expenditure incidental to drainage			
Cash in Inv	estment	Account, 1	$_{ m lst}$								10,921	8	11
April, 192	27			10,000	0	0				Engineering and administration expenses	540		1
							14,839	4	4	Fuel	1,380	12	9
Proceeds fro	om sales a	and transfe	ers							Legal expenses	6	0	0
of plant.	&c to ot	her works					602	5	9	Material and stores	1,808	4	7
Subsidy fro										Plant and machinery	166	7	4
		of complet								Refund of rates		13	3
works		*					3,200	0	0	Travelling-expenses	41	12	3
Rents							132	7	10	Interest on debentures recouped to the Consoli-			
"Thirds"					-		10	4	8	dated Fund	5,010	0	0
Rates							7,213	2	11				
Interest on	investme	nts					574	2	8	Balanco— £ s. d.			
Sundries							316	7	0	Cash in Public Account 3,807 13 0			
										Investment Account 2,000 0 0			
											5,807	13	0
						_	200 00#	1.5		· .	26,887	15	9
						Ĭ.	26,887	19	2	I.	20,001	.10	
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REVENUE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1928.

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	Penalty levied on arrears of capital rate
	(No. 2)
204 407 0 4	£24,467 9 4
£24,467 9 4	124,407 9 4
Liabilities.	### Assets. ### S. d. Drainage works—Expenditure in connection therewith, including wages, supplies, administration, and engineering expenses, depreciation of plant and capitalized interest charges-reduction under section 22, Finance Act, 1925
Rates paid in advance	Sundry debtors for rates 7,145 4 2 Sundry debtors for law-costs 78 10 1 Sundry debtors for rent 62 14 10 Sundry debtors for interest on investments 62 14 10 Sundry debtors for interest on investments 47 16 8 Cash in hands of Post Office 47 16 8 Cash in Public Account, 31st March, £ s. d.

J. B. THOMPSON, Under-Secretary for Lands.

£567,359 7 9

J. H. O'DONNELL, Controller of Accounts.

I hereby certify that the Statement of Receipts and Payments, Revenue Account, and Balance-sheet have been duly examined and compared with the relative books and documents submitted for audit, and correctly state the position as disclosed thereby. The following comment is appended:—

£567,359 7 9

Interest on the amount held by the Public Trustee on behalf of the Public Debt Redemption Fund has been compounded, whereas there is no statutory provision therefor.

G. F. C. CAMPBELL, Controller and Auditor-General.

Approximate Cost of Paper.—Preparation, not given; printing (700 copies, including map), £27 10s.



