

*No. 32 Ruston Bucyrus Drag-line Excavator.*—Between April and September this machine deepened the Orini Stream for a distance of 42 chains down-stream from the Eastern Drain Junction, and for a period of over two months was employed opening the Rangitaiki River mouth. Between October and February the excavator widened and deepened 95 chains of the lower end of the Eastern Drain and 109 chains of Platts Drain. After overhaul the machine was railed to the Waihi Drainage District in March. While working at Rangitaiki the machine excavated 33,000 cubic yards.

#### TARAWERA RIVER.

The reconstruction of the stop-banks on the eastern bank of the river will be completed in the near future. A break in the western river-bank, which might have resulted in a permanent change of the river-course occurred this year. The river-banks of pumice sand are above the level of the surrounding land and erosion caused by prolonged or concentrated overflow will, if unchecked, cut a new channel for the river through the elevated river-bank into the basin-shaped area between the Matata Hills and the river. This would cause the flooding of a considerable area of grazing-land and interrupt road and railway communications. The work involved in restoring the river to its original course would be difficult and costly. The increasing frequency with which these breaks occur emphasizes the need for efficient stop-banks on the left bank of the river.

#### RANGITAIKI RIVER.

The removal of the willows from the banks of the lower reaches of the river has greatly increased the efficiency of the channel. This work, commenced in 1936, has now been completed to a point 3 miles 30 chains above the railway bridge at Edgecumbe, and 1 mile 38 chains of river-bank has been cleared this year.

During July and August unsuccessful attempts were made to open a direct outlet from the river to the sea through a sand-spit which has forced the river-mouth eastwards for a distance of approximately 60 chains. Since the direct outlet was restored in June, 1938, low-water mark has moved seawards about 3 chains, and this accretion has not only increased the width of the sand-spit through which the new channel must be excavated from 4 to 7 chains, but has also greatly increased its height. Though the direct outlet of the river to the sea was established several times and continued in operation on one occasion for a period of three days, wave-carried sand repeatedly blocked the new channel, and work was discontinued until conditions are more favourable.

#### SUMMARY.

The principal works carried out during the year are summarized below:—

	Miles.	Ch.	Excavation. Cubic Yards.
Drains cleaned by manual labour .. .. .	130	25	..
Drains and canals cleaned by weed cutting launch .. .. .	14	34	..
Drains widened and deepened by manual labour .. .. .	1	13	1,500
Drains, canals, and streams improved with excavators .. .. .	5	18	76,300
Stop-banks reconstructed or repaired with excavators .. .. .	1	67	59,000
River and stream banks cleared of willows .. .. .	2	40	..
		£	s. d.
Net maintenance expenditure .. .. .		8,034	0 0
Rates struck—	£	s.	d.
Special .. .. .	10,782	0	0
General .. .. .	6,192	0	0
Rates collected—			
Special .. .. .	16,383	0	0
General .. .. .	10,254	0	0

I have, &c.,

R. L. INNIS,

The Under-Secretary for Lands, Wellington.

Chief Drainage Engineer.

#### STATEMENT OF ACCOUNTS.

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