

The low-lying country is receiving attention for flax-cultivation, and already areas totalling approximately 5,500 acres have been purchased for this purpose, and there is a prospect of further areas being made available. Small areas of fertile low-lying country seem to lend themselves to pumping in winter to relieve the accumulation of water, which, owing to the high level of the outfalls, cannot escape sufficiently fast. Several electrically driven pumps have been installed in readiness for the coming winter, and it will be interesting to note the success attending these ventures.

Rainfall.—The average rainfall as recorded at Thornton for the past eleven years has been 54.16 in. Last year's total was 55.57 in., rain falling on sixty days. The wettest month was May, with a fall of 13.92 in., and the driest January, when 0.24 in. was recorded.

Eastern District.—The excavation of the Kopeopeo Canal diversion was completed late in the period, and the northern spoil-bank for the major portion of its length was levelled and formed in order to make a combined roadway and stop-bank. The large concrete flood-gate and four small Calco gates, which take the drainage from the country south of the diversion, were completed during the year. Three hardwood pile bridges were erected on the roads crossed by the diversion. Several small flood-gates were placed in this area, also minor improvements, and the general maintenance of existing works carried out as required.

Western District.—The programme of stop-banking and channel-improvement of the Tarawera River was carried out to completion during the year, and the pumice banks protected at likely points of erosion over a considerable length. The record of water-levels in this river since the cessation of dredging operations so far shows no general tendency of a rise above previous levels, and it is fairly safe to assume that the river-bed is on a permanent grade. It is essential, however, to keep these records over a prolonged period before this assumption can be finally accepted. Owing to the unstable nature of the stop-banks, periodical inspections will be necessary in order to counter any tendency of the banks to erode.

In addition to the usual maintenance of hand drains, maintenance dredging was carried out in the lower reaches of the Awakaponga Canal, Tarawera Western Drain, and Section 109 Drain. The two last-named works were still in hand at the end of the period.

Dredges.—Five dredges, comprising two Monighan drag-lines, two Priestmans, and one Bay City dipper dredge have been operating part time during the period. A total of 339,450 cubic yards of spoil was dredged, covering a distance of 11 miles 50½ chains. The cost per cubic yard of the material excavated was 5.73d.

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

	Cubic Yards.	Cost per Cubic Yard.		Cubic Yards.	Cost per 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.	1928-29	.. 339,450	5.73d.

No. 8 Priestman Dredge : This plant completed the eastern bank stop-banking of the Tarawera River early in the year, and after minor widening and channel-improvements were effected, plant was laid up near the railway-bridge. The distance dredged during the period was 87½ chains, and a total of 45,000 cubic yards of spoil was excavated.

No. 9 Priestman Dredge : This plant was put into commission towards the middle of the period to carry out maintenance work on the Awakaponga and Section 109 Canals. The first of these was completed, and Section 109 Canal was well under way at the end of the year. A total of 93,450 cubic yards of spoil was excavated, covering a distance of 3 miles 75 chains.

No. 17 Monighan Dredge : This plant assisted with the completion of the Kopeopeo Canal diversion, and towards the end of the year was transferred by rail to the Waihi Swamp. During the portion of the year worked 63,270 cubic yards of material was excavated, covering a distance of 48 chains.

No. 18 Monighan Dredge : After completing its programme of work on the Kopeopeo Canal this plant was dismantled and transferred by scow to the Kaitaia Swamp. The amount of spoil excavated before transfer was 40,740 cubic yards, and the distance dredged 52½ chains. This plant, together with Monighan No. 17, have left a very creditable record of canal-construction work on the Rangitaiki Plains, extending over a period of eight years. This work has been carried out with a very low repair bill and with the efficiency of the plants little impaired.

No. 21 Bay City Dredge : Maintenance work in the Tarawera Western Drain was commenced by this plant early in the year, and a total distance of 5 miles 27.5 chains completed, 96,990 cubic yards of spoil being removed. A short length at the north end of the Central Drain will be dredged by this plant while it is in the locality. Work on the Tarawera Western Drain will be carried on to completion during the coming year.

Bridges, Flood-gates, &c.—The large four-door flood-gate on the Kopeopeo Canal diversion was completed during the year, and in addition nine small flood-gates, three pile bridges, and four sill bridges were erected.

Drains, Stop-banks, &c.—No new hand drains were constructed in the area during the period. The only new stop-banking was that carried out by the dredges on the Tarawera River and the Kopeopeo diversion.

Drains in Operation.—The total length of drains constructed is as follows : Dredge canals, 68 miles 28 chains ; main-outlet drains, 106 miles 24 chains ; road-drains, 30 miles 46 chains. Of the hand drains a total of 96 miles 40 chains is annually maintained by the Department.