

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 Awaitei-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 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.			

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 maintenance 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.