

The mouth of the diversion on the sea-coast has as yet shown no tendency to wander, and, though we are not directly interested in the navigability of the port, it is pleasing to note that it is workable by auxiliary scows drawing up to at least 5 ft. and carrying up to 100 tons of cargo.

A free ferry has been erected, and is maintained by the Department across the diversion.

Priestman dredge No. 4, which was engaged on this work, was safely towed round the coast to Matata, where it has since been engaged on the Awaitei and Omeheu Streams dredging.

#### TARAWERA RIVER DREDGING.

A great deal of the country in the vicinity of this river is particularly low lying, and allows a very narrow margin for successful drainage. The work has been carefully planned so as to give the maximum of fall available, and results have been quite satisfactory. The work is being carried out by the Hammond bucket dredge, and a distance of 3 miles 15 chains has now been completed. During this year some 93,970 cubic yards has been excavated, and already the river has been lowered by 3 ft. 3 in. No attempt, however, is being made to actually deepen and so lower the river by dredging; only sufficient dredging is being done to give the river a more direct and regular flow by the cutting-off of bends and the general straightening of its course. This, it is considered, will give the river the necessary power to scour itself out, and so lower its bed sufficiently for all drainage purposes without further dredging.

#### UPPER TARAWERA RIVER.

Owing to the large quantities of pumice and volcanic ash carried by this river from its upper end it must always have a big surface grade, the grade being regulated by the amount of material to be carried.

In the Upper Tarawera River the diversion through the lakes has been most successful. The old river-bed is now high and dry, and the new course has already scoured itself out sufficiently to carry the water (except perhaps during abnormal flood periods) without overflowing its banks. This has also a very beneficial effect on the river below the diversion.

The year's expenditure on this work was out of special vote, and amounted to £160 14s. 6d.

#### TE RAHU—MANGAROA OUTFALL.

This work, commenced in April, 1913, was completed in January last. This work now cuts off all the hill water from the south-east, which, in conjunction with the flood overflow from the Rangitaiki River, was formerly responsible for the water-logged nature of the eastern half of the swamp, and gives it a direct outlet into the Whakatane River. The latter portion of this outlet, completed during this year (123 chains in length), is located in hard sandy country containing a large amount of timber, and was difficult and consequently slow dredging. However, it is now complete and in good order, and will improve when flushed out by a flood. Two permanent bridges have been erected across this outfall at the main road crossings.

Priestman dredge No. 3, which executed this work, has been transferred to work on the Kopeopeo outfall.

#### AWAITEI AND OMEHEU STREAMS DREDGING.

This work is now well on to completion, and I am hoping to see it finished in about two months' time, when Priestman dredge No. 4 will be transferred to work on the Awakaponga Stream outlet. A distance of 257 chains, comprising the removal of 81,340 cubic yards of spoil, has been dealt with, the greater portion of this being the clearing-out of the Awaitei Stream, which has been made use of where economically possible.

The work is now located in rising ground in the vicinity of the Omeheu Stream, where a good deal of submerged timber is being met with, and thus causing delay; but for this, the work would now have been complete.

#### KOPEOPEO OUTFALL.

The dredging of this outfall is now well in hand, and a distance of 22 chains has been completed. The first half-mile or so is located in an old watercourse running through high country—too high to permit of the free working of the "chutes." To overcome this a dam and spillway has had to be erected at the mouth of the cut, so that with the raised water-level they can now be made full use of. It will take the best part of two years to complete this outfall.

#### MAIN OUTLET DRAINS.

At the present time there are, excluding all dredged outfalls and road drains, 60 miles 13 chains of main outlet drains in operation, and of this, 9 miles 50 chains have been completed during the present year. Dredged cuts and river-diversions make up another 15 miles 65 chains, making a total of 75 miles 78 chains of artificial waterways in operation to date.

Our scheme provides for all necessary drainage with the exception of the subdivisational work required on each individual section, which is being carried out by the various owners themselves. A distance of 11 miles 44 chains has been cleaned and deepened during the year, and all drains will be put in good order before the winter sets in. From now on there will be a considerable expenditure under the head of "Maintenance," and especially so for the next two or three years until the drains form their "skin" and new works cease.