

Kuhunui drain has been deepened fully another 18 in., and the lagoon in Section 61 is now quite dry, and country which two or three years ago was covered by raupo and water is now feeding bullocks and is improved beyond expectations.

The drains in Native Section 28 have been deepened and two others constructed, but unless steps are taken to fence these drains work will be ineffective owing to so many wild horses and other stock using drains for watering purposes. This work will be taken in hand immediately, rough posts being used until more suitable material comes to hand.

The Te Rahu—Mangaroa outfall and Whakaire drain have been cleaned, and fall is now being taken up in the latter. This stream would be a good one to test the capability of the drag-line excavators purchased recently in America, and it is proposed to place a machine in the Te Rahu—Mangaroa dredge-cut and the Whakaire drain shortly, which would avoid the necessity of diverting the Whakaire as desired by several of the settlers, but which would be a costly work. Deep silt-traps will be excavated throughout.

Several small drains in the eastern portion of district have also been deepened with material advantage to the settlers, and a new drain was cut in portion of the Native country near Poroporo, but, as there is a considerable distance between this drain and the White-pine Bush Road, another outfall drain will be commenced shortly.

#### WESTERN DISTRICT.

The hand drain cut from the Omehu adjunct to the cross-road last year has been extended as far as the Tengaroa drain, and No. 4 dredge is now occupied in dredging a 30 ft. cut along this drain, and is within about 20 chains of the Tarawera cross-road. The Tengaroa drain, which was widened last year, has now been deepened to a short distance past the main Rotorua Road, and the country is very dry indeed.

The Awakaponga outfall drain has again been cleaned out, and fall taken up in the Amiona and Collins drains. The former drain was deepened, but very heavy timber was met with, which made the construction very costly. It may be of interest to note that in nearly all drains now being deepened large quantities of timber, 6 ft. or 8 ft. underground, have been met with, showing conclusively that at one period forests must have been in existence over the Rangitaiki Plains.

The Awaiti drain as far as its junction with the Tarawera Western drain has been widened and deepened from the Omehu dredge cut, and the Tarawera Western as far as the Railway Road. This has been of great advantage to the surrounding country, which, owing to the extra fall, is now quite dry and can be brought into cultivation. This drain can be deepened by hand for another 40 chains, but, owing to there being no possibility of diverting water after this distance, one of the new machines, which straddles the drain, will be used.

Murray's drain, which branches off from the Tengaroa drain, has been widened and deepened. This drain will be continued through Crown lands, shortly to be opened for occupation, to about a mile south of the main Te Teko—Rotorua Road.

#### PRIESTMAN DREDGES.

Similar conditions have happened during this year as in the previous one—viz., shortage of coal, and hard dredging-country—but notwithstanding this very fair progress has been made.

No. 3 dredge has been occupied in redredging the Kopeopeo outfall and deviation, and on the return journey has picked up considerable fall. It has reached the northern end of Putiki drain, but as coal-supplies were short progress was not so good as anticipated. The total spoil accounted for was 133,250 cubic yards.

No. 4 dredge has been occupied dredging up the Omehu outfall, but owing to various causes, chief of which was the building of new pontoon and dismantling of dredge, re-erection of machinery, and change of dredgemasters twice, progress was not nearly so good as anticipated, but a decided improvement is now manifest. The country immediately adjoining this cut, which previously was almost under water, has now plenty of freeboard, and has increased considerably in value. Total amount of spoil shifted was 43,418 cubic yards.

No. 8 dredge was put into commission in October, 1920, and is now engaged in dredging channel in the Tarawera River in its upper reaches, and also stop-banking. The dredge has done good work from the start, although it has been hampered to a considerable degree by striking large quantities of timber. The total amount of spoil shifted was 39,100 cubic yards.

No. 9 dredge: It is expected that this dredge, which is now practically ready, will commence work in April.

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

|         |    |    |    |    |    | Cubic<br>Yards. | Cost per<br>Cubic Yard. |
|---------|----|----|----|----|----|-----------------|-------------------------|
| 1912-13 | .. | .. | .. | .. | .. | 31,486          | 4.12d.                  |
| 1913-14 | .. | .. | .. | .. | .. | 272,370         | 3.07d.                  |
| 1914-15 | .. | .. | .. | .. | .. | 268,760         | 3.48d.                  |
| 1915-16 | .. | .. | .. | .. | .. | 224,740         | 4.54d.                  |
| 1916-17 | .. | .. | .. | .. | .. | 261,751         | 4.36d.                  |
| 1917-18 | .. | .. | .. | .. | .. | 320,614         | 3.72d.                  |
| 1918-19 | .. | .. | .. | .. | .. | 229,659         | 5.70d.                  |
| 1919-20 | .. | .. | .. | .. | .. | 176,672         | 6.62d.                  |
| 1920-21 | .. | .. | .. | .. | .. | 215,768         | 8.82d.                  |

The increase in wages, coal, and other supplies has materially increased dredging-costs.