

overhauled before commencing on the up-river work, and is now in first-class order. As is only to be expected, the repairs on the machines are costly after working in heavy rock country for some years. The drilling and compressor plants have been overhauled in rotation, and have stood up to the work remarkably well. Now that the plant is becoming more scattered, repairs will not be able to be effected so rapidly, but the country to be excavated is very much easier, which should lessen the need for repairs.

Proposed Operations for Year 1927-28.—The following is a schedule of the works proposed to be carried out during the coming year: (1) Prosecution of main diversion and spillways at rapids; (2) diversions of river above rapids; (3) completion of Ngararatunua Canal; (4) commencement of Mangahuhuru Stream diversions. This latter is contingent on an American steel dredge being transferred from the Waihi works.

Works Expenditure.—The total expenditure during the period under review was £24,018, and of this amount £11,550 was paid in wages.

The local Engineer in charge is Mr. V. C. Bosselmann, B.E.

WAIHI DRAINAGE AREA (20,237 ACRES), TAURANGA COUNTY.

This area was also investigated by a departmental committee, the order of reference being similar to that of the Kaitaia area. Following on the report, an amendment to the Swamp Drainage Act was passed by Parliament, whereby the area was divided into three wards or subdivisions, and the capital cost allocated as follows: (a) National Endowment or Central Ward, £50,000; (b) Pukehina Ward, £10,000; (c) Kaikokopu Ward, £15,000. Provision was also made that the rate for maintenance should be struck over the whole area, whilst the rate for capital cost should be struck over the wards, excluding the Central Ward, on the capital cost allocated against that particular ward. The reason for rates on capital cost not being struck on the Central Ward is that this area comprises solely Crown land, the rents from which are credited to the Swamp Drainage Account. The area has been classified into classes as required under the Act, and a revaluation completed, but the striking of rates cannot be proceeded with until objections are finally dealt with by the Assessment Court.

An area of approximately 2,400 acres in the Upper Pongakawa district has been excluded from the district, as it has not received benefits from the works carried out.

The scheme of works has now been practically completed, the main exception being the enlarging of the Upper Kaikokopu, which can only be carried out by a drag-line, which has not been made available up to the present time.

The greater part of the Crown area has now been disposed of for flax cultivation and milling, at rentals which are not quite sufficient to recoup interest on the expenditure on the drainage development. The balance of the area—about 1,100 acres—has been valued for flax-lease purposes, and recommendations made as to its disposal. The limited area opened for settlement, as well as the privately held swamp land, are rapidly being brought into permanent pasture.

The rain-gauge at Pongakawa recorded a total fall of 65.01 in. of rain during the year, the wettest month being October, with a fall of 13.96 in., and the driest January, with a fall of 2.59 in.

Kaikokopu Stream.—The redredging of this stream as far south as the Main Road was completed early in the year, after which the machine, No. 5 Priestman, was removed to the lower reaches of this stream so as to raise the stop-banks on both sides of the channel.

Wharere Canal.—The only work-construction carried out on this channel was the raising of the stop-banks, with the Priestman dredge, near the entrance to the Waihi Estuary.

Dredges.—The only dredge operating during the year was the Priestman, which removed 42,150 cubic yards. Both the American steel dredges were idle at the end of last year, and in July No. 25 was towed round to the Kaituna River, where it has been operating under hire to the River Board. It is proposed to transfer No. 26 to the Hikurangi works, where there is scope for a machine of this type.

The following table shows the amount of spoil dredged and the cost per cubic yard for the last ten years:—

| | | | | | Cub. yds. | Cost per cub. yd. |
|---------|----|----|----|----|-----------|-------------------|
| 1917-18 | .. | .. | .. | .. | 55,538 | 4.57d. |
| 1918-19 | .. | .. | .. | .. | 20,780 | 7.67d. |
| 1919-20 | .. | .. | .. | .. | 44,250 | 9.29d. |
| 1920-21 | .. | .. | .. | .. | 63,495 | 7.77d. |
| 1921-22 | .. | .. | .. | .. | 77,535 | 6.17d. |
| 1922-23 | .. | .. | .. | .. | 164,527 | 6.97d. |
| 1923-24 | .. | .. | .. | .. | 241,504 | 7.54d. |
| 1924-25 | .. | .. | .. | .. | 252,618 | 6.90d. |
| 1925-26 | .. | .. | .. | .. | 184,344 | 6.14d. |
| 1926-27 | .. | .. | .. | .. | 42,150 | 7.50d. |

Drains.—The only drain-construction carried out was the completion of Tapsell's drain in the Central district. The purpose of this drain was to release a large area of stagnant water, and this has resulted in a surprising growth of flax over the area affected.

Buildings.—These consist of an office, store-shed and workshop, two cottages, and one hut. Of these, both cottages and the hut are being rented.

Fencing.—The fencing of the fire-break along the Main Road was completed during the period.

Stop-banks.—The several lengths of stop-bank in the area have been repaired and maintained, and the bank between the Waewaetutuki Hills and Kaikokopu Stream was widened and raised throughout.

Flood-gates.—During the year four concrete barrel flood-gates were put in hand. Of these, three were completed, and one was nearing completion at the end of the period. The beneficial effect of these gates in keeping out the tide-waters is already noticeable.