

Awanui River.—Bullock teams were employed to scoop back spoil previously dredged from the river-bed in order to provide space on the banks for further dredge spoil. Dredger No. 10 (Priestman) was engaged for six months in dredging sand from the bed of the channel between the Northern Steamship Co.'s wharf at Awanui and the Dairy Company's wharf. Approximately 27,662 cubic yards of spoil was dredged and placed on the river-banks.

Some 20 chains of this channel was snagged by bullock team where a quantity of timber had lodged below the Whangatane spillway intake. Fallen poplar-trees and other timber were removed from the stream for 80 chains above Kaitaia Township, and young poplars and willows removed or ring-barked and poisoned wherever they appeared throughout the portion of the channel which had been cleared.

Some 96 chains of the channel, from Sunray Park cut to spillway intake, was dredged by drag-lines, which removed overhanging trees from the banks and timber from the bed of the stream. 12,600 cubic yards of spoil was removed from the bed of the stream and in easing bends, and 4,350 yards was removed by drag-lines in widening and deepening 5·30 chains of this channel through Sunray Park cut.

Whangatane Spillway.—Excavation of this spillway was completed in July, and flood-water passed down the channel in August and subsequently whenever freshes occurred in the river. Two drag-lines were employed on excavation, and enlarged 49·04 chains from 20 ft. to 50 ft. bottom, and 23·20 chains from 30 ft. to 50 ft. bottom, excavating 57,120 cubic yards of spoil. Bridging and flood-gates were completed throughout, and 190 ft. of concrete floor and stonework on batter was placed below the weir at intake to prevent scour. Two swing-gates have been erected on boundary-fences crossing the channel, and further gates will shortly be placed on all boundaries intersected.

School Cut.—Excavation of this cut was commenced by drag-lines in August and completed in December. 20·05 chains of new cut was excavated through heavy clay, and 5 chains of old river-bed cleared and deepened. The new channel has 30 ft. bottom at average depth of 18 ft., and the total excavation was 48,850 cubic yards. The new channel was bridged at Church Road, and flood-gates and culverts placed for drainage of adjacent lands into the cut. Other works entailed in connection with the cut were the erection of fences and the provision of a new playing-area for the Kaitaia School. This has been drained, cleared, and ploughed, and will be finally worked up and levelled for sowing of grass as soon as the ground is in favourable condition.

Drains.—48 miles 50 chains of drains were cleared, of which 14 miles 47 chains were cleared twice during the year. 3 miles 18·7 chains of new drain was constructed by hand, and 66·5 chains of the Kareponia Creek widened and deepened by drag-line which excavated 15,700 cubic yards of spoil. 5 miles 45 chains of drain was widened and deepened by hand labour. In the Motutangi area 50 chains of the main outlet was cleared of weeds and silt deposits removed from bottom. 27 chains of tile drain was placed on the school playing-field, which is being prepared at Church Road.

Flood-gates.—Thirteen flood-gates were installed as outlets to take local run-off into main channels and prevent backflow of flood-waters. The total number of flood-gates now installed in the area is fifty-three, ranging from 36 in. to 15 in. in diameter, and these were inspected at frequent intervals for clearing of blockages and to ensure efficient operation.

Stop-banks.—Two miles of stop-bank was planted with Kikuyu grass, which appears to grow well in various classes of soil, and will eventually provide good binding for the banks to ensure stability. 66·5 chains of bank was thrown up on the Kareponia Creek by drag-line, and of this 10 chains was shaped by hand. 4 miles 69 chains of bank was raised and strengthened.

Bridges.—One timber bridge, 107 ft. in length, was erected over the Whangatane spillway at Donald's Road crossing. One steel-girder bridge, 105 ft. in length, with traffic and footway in hardwood decking, was erected over the school cut at Church Road, and two sill bridges, of 14 ft. and 20 ft. length, were erected over outlet drains.

Dredges.—The amount of spoil excavated by dredges totalled 166,282 cubic yards, and, in addition, a large amount of timber was handled in clearing the Awanui River.

Surveys.—Levels, peat soundings, &c., were taken over a large area of Crown land—west of the Awanui River. The land generally consists of deep peat or low-lying country liable to flood under conditions which had existed up to this year. A considerable reduction in flood-levels is anticipated as a result of works recently completed, but it appears desirable to check results by observation in this area during a period of high water produced by heavy rainfall, and this will be done at the first opportunity.

Proposals for ensuing Year.—Maintenance of existing drains and other works, completion of stop-banks at lower end of Whangatane spillway, and some fencing are the only works proposed for the ensuing year.

Works Expenditure.—The total expenditure for the year was £18,397 8s. 5d., of which day labour absorbed £10,498 16s. Some nineteen piecework contracts were let, totalling £1,074 10s. 9d.

HIKURANGI DRAINAGE AREA (50,000 ACRES), WHANGAREI COUNTY.

Rainfall.—The rainfall was comparatively light during the year, save for a very heavy storm in June. The yearly total recorded at the Apotu gauge was 41·12 in. During the last four months of the period under review the river in the main swamp area has been consistently low, at an average of 16·8 ft.