

The various works carried out by the dredges are as follows:—

- (1.) Completion of deepening of Puhanga Canal.
- (2.) Completion of Mangawhero Canal.
- (3.) Widening and improving Piako River.
- (4.) Commencement of Patetonga Canal.
- (5.) Commencement of Waitoa Canal.

These works are treated separately under their respective headings.

PUHANGA CANAL.

The deepening of this canal was completed, and has had a very marked effect on the flood-levels in the country up-river, lowering this level about 3 ft. The canal will have to be run over again by the dredge, as some slips have occurred, and probably a certain amount of widening will be required. The distance deepened during the year was 46 chains, while the total length is 140 chains.

MANGAWHERO CANAL.

This canal was completed and the drainage system for the Mangawhero district linked up. The distance dredged during the year was 57 chains, and the total length is 60 chains.

PIAKO RIVER.

No. 2 dredge was placed in this river, and carried out widening and improvement work from Puhanga Canal for about one mile up-stream.

PATETONGA CANAL.

The object of this canal is to give direct and immediate benefit to some twenty sections which were balloted for some time previously. Owing to the flat and difficult nature of this country, an efficient outlet drainage could not be provided without a dredge cut being put in to tap the heart of it. This work has progressed very well and is quickly nearing completion, and much relief will be thereafter experienced. The distance dredged is 95 chains.

WAITOA CANAL.

This canal has been commenced during the year, and starts at the junction of the Piako and Waitoa Rivers. From this point it heads in a southerly direction, cutting off a long winding stretch of the Waitoa River, and also striking at a point half a mile distant from the junction, within 1 chain of the Piako River, and considerably shortening line of flow at this point.

The dredge requires to go on for about another 30 chains before its objective in the Waitoa River is reached. This work will give a certain amount of direct benefit, and will become a very important cut as soon as Piako River is brought up to a state of working-efficiency to this point. The length dredged during the year is 35 chains.

STOP-BANKS.

No new stop-banks have been constructed, but during the year two breaks were repaired and leaky portions attended to. The total length of stop-banks is 28 miles 70 chains.

FORMED ROADS.

Owing to the great scarcity of labour very little new formation has been done, but opportunity has been taken, in connection with drain-works, to improve adjacent road-formation as far as possible. During the year some 9 miles $14\frac{1}{2}$ chains of roads were constructed. The total length to date is 75 miles $52\frac{1}{2}$ chains.

WHARVES.

Two new wharves have been constructed, one at Ngatea and the other at Waitakaruru Canal. This makes a total number of seventeen permanent wharves erected to date. The Patetonga Wharf, which was purchased by the Department some years back from Messrs. Scotcher and Co., will require reconstruction shortly. It is proposed to erect all new wharves as far as practicable in ferro-concrete.

FLOOD-GATES.

A departure has been made from past practice by providing for ferro-concrete flood-gates. Two of these have just been commenced. It will be necessary shortly to replace in concrete the old wooden gates, which are now losing their efficiency, but have done good work in the past. This policy was forecasted in previous reports, and has only been made possible by the consolidation of the country under drainage. Two flood-gates were constructed during the year, making a total of sixty now in operation.

BRIDGES, CULVERTS, ETC.

It is intended shortly to replace a number of sill bridges by concrete pipes. A new bridge was constructed in ferro-concrete where the stream crosses the Patetonga access to Wharf Road. This is the first completed concrete structure on the Hauraki Plains. The timber bridge across the Puhanga Canal was re-erected and several bridges redecked. The number of sill bridges is now 99; bridges on piles, 10; three-span bridges, 2; two-span bridges, 2; ferro-concrete bridge, 1; culverts, 18.