warrant it. Some 150 chains of the Piako River bed has been fully snagged, while some 240 chains of the Waitoa River has been weeded and snagged. It is a matter for regret that water-lilies are so prevalent in both rivers, and there seems no adequate way of getting rid of the weeds cheaply.

### Flood-gates.

The total number of flood-gates now in position is thirty-five, and of these twenty-one are of a more simple construction than formerly, and are fitted with iron doors. This change in design was brought about mainly by the difficulty experienced in building the large double gates in position, owing to bad formation of the river-banks. The new style of flood-gates are much more quickly placed in position and appear equally as satisfactory as the double flood-gates, and are much cheaper. Another factor to be considered was that after a lapse of time it would be possible to economically lower the various outlets, and then build reinforced-concrete flood-gates for permanency; the cost of discarded wooden gates would be nominal, as the timber lends itself to other purposes, while that from the double flood-gates does not do so to nearly the same extent. The existing "flappers" have been replaced by flood-gates, as the former proved too small. Great trouble has been experienced during the year in obtaining adequate supplies of totara timber for flood-gates.

### Wharves.

There are now seven wharves or jetties in position, but only four of these can be considered as being up to requirements, and the remaining three will require rebuilding. A supply of jarrah and tanekaha piles is now on the ground for purposes of building three new wharves in addition to those mentioned above. It will also be more economical to build a few light service stages at different points on the Piako River in preference to making roads.

### Sill Bridges and Culverts.

The total number of small sill bridges erected across road-drains to date is thirty, but a considerable number are still required. However, no inconvenience is being caused, as temporary crossings have been made as required. The total number of culverts in position is six.

### Telephone-lines.

The fourteen miles of private line that was erected by this Department and referred to in my last annual report has been of the greatest use to all on the works, and under certain conditions settlers have been allowed to make use of the same in communicating with Thames.

### Buildings.

The total number of buildings of all descriptions is twenty-six, and they are all in occupation or used as stores, &c. The accommodation-hut erected at Pipiroa last year for first ballot was afterwards pulled down and the timber used to construct the foreman carpenter's cottage. Another accommodation-hut was built at "Bush Shanty" for last ballot, and is now being temporarily used by settlers. One hut has been fitted up at Tahuna as office and quarters for foreman. All buildings are in very fair order.

### Floating Plant.

The floating plant used in connection with the drainage and reclamation works consists of two Priestman dredges, one steamer, four oil-launches, two large pontoons, and sundry small punts. All are in good order and well equipped, and are in constant use. The steamer "Hauraki" brings stores and timber to the works from Auckland and Thames, &c., while the launches are always in commission.

### Artesian Boring Plant.

The total number of artesian bores is nine, of which number five have been sunk on behalf of settlers. Arrangements have been made with settlers whereby actual cost only is charged, and the financial aspect has also been considered so as to allow settlers a little time to pay charges. In every instance water has been found when a bore has been sunk, so that its general presence is clearly demonstrated. The flows run from 4,000 gallons per day to 115,000 gallons per day.

As duly authorized, a boring plant was bought on behalf of the Department, and all work is now done by our own men. The cost per foot is less than charged by proprietors of similar plants, and varies from 1s. 7d. to 2s. per foot inclusive of piping and all other expenses. Schedules are attached giving particulars of some seven bores sunk during the past year.

Considerable diversity of opinion has existed as to the soda and iron nature of the water, but it has now been made very clear that, notwithstanding the mineral nature of the water, cattle take readily to same after the first day and appear very fond of it. The Hauraki Plains Settlement has no special monopoly of this mineral artesian water, as from inquiries made it is found in all artesian bores sunk as far south as Waihou. Established farms have had the same class of water for years past, and have carried out dairying operations with same. Very slight hopes can be held out of finding non-mineral water, as one bore has been sunk to a depth of 600 ft., and only mineral water obtained. In very many districts settlers are dependent on tanks for domestic water-supply, and this will apply to settlers on Hauraki Plains; as for stock, they can be provided for by artesian water. Experience has shown that all casing of black iron put down is useless, and that only galvanized casing is at all suitable. The black-iron tubes become perfectly honeycombed after six months or less.

### Works performed

The following works have during the last year been executed by co-operative, piecework, and special contracts: Excavation Puhanga Canal, 28,760 cubic yards; snagging upper reaches Piako River, 1 mile 70 chains; combined drain and stop-banks, 3 miles 3 chains; raising stop-banks, 14 miles 70 chains; sinking artesian bore, 1; combined new drain and road-banks, 27 miles 63 chains; deepening drains, 13 miles 7 chains; combined deepening and widening of drains, 8 miles 46 chains;