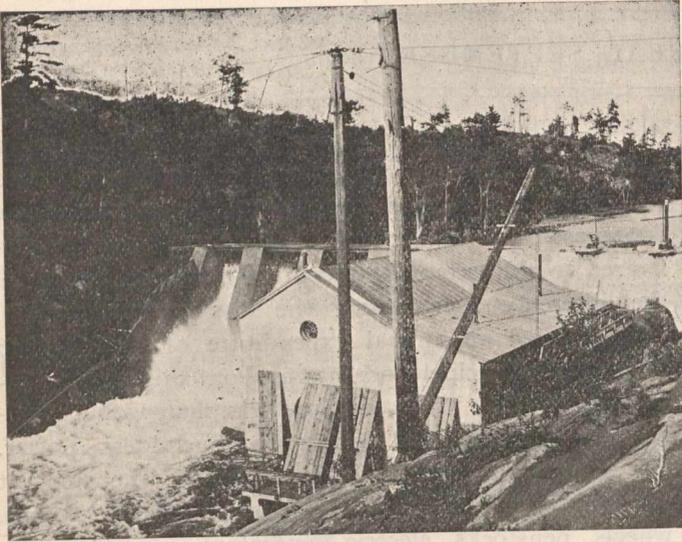


The sub-station at Orillia is a brick building, 38 by 60 ft., with concrete floor, and two stories high the upper being used as a storeroom and workshop. It is furnished with a high voltage, 10-panel switch-board, of white marble. The distributing board is of



Ragged Rapids—Dam and Power-House.

blue Vermont marble, having eight panels. Step-down transformers reduce the current from 22,000 to 2,000 volts, at which rate it is distributed.

There are 5,000 incandescent lights in use in Orillia, and the streets are lighted by 50 alternating arc lamps. One hundred horse-power is used for the pump in the water-works, but not continuously, and 422 $\frac{3}{4}$ horse-power is contracted for to run various industries in the town. The first contract was for 720 horse-power, delivered at Orillia, but that amount has never been available, because the tail-race was defective, and did not allow the water to get away fast enough from the turbines. As soon as this defect is remedied, 100 horse-power more will be available. Contracts have recently been let for an extension, which will double the capacity of the plant. The con-



Interior of Power-House.

tract for the electrical installation goes to the Westinghouse Co., and for the hydraulic to the Wm. Hamilton Co., of Peterboro.

The installation was commenced in the fall of 1898, the first contractors being Pratt & Mullaney, of Buffalo. Slow progress was made, and the work was eventually taken out of their hands and in 1899 given

to P. H. Patriarche, who had the contract for everything but the town sub-station building. He did a large amount of work, but also failed to complete it, the town having to do so under the direction of its own engineer. A lawsuit is still going on in connection with Patriarche's contract. The works were finally completed, and current turned on, January 24th, 1902. Since that time the only interruption has been from the breaking of the runner of one of the turbines caused by a sprung shaft.

The addition to the works, already referred to and now in progress, includes a new 600-K.W. generator, with water wheels direct-connected to run the same, and an extension of the power-house to provide the necessary accommodation. The new installation will not be completed before February, 1904, as it is impossible to obtain the machinery sooner. Meantime the current required for power and light is beyond the capacity of the works, but as it will not all be in use at any one time, no serious difficulty is apprehended.

Four men are required to run the plant at



Dam and Power-House Looking down Stream.

Ragged Rapids, and four or five are employed at the sub-station and on line work in Orillia. W. J. Mitchell was hydraulic engineer, and R. J. Parke electrical engineer for the installation. No engineer is employed for the new work beyond the permanent staff. The works are under the charge of Peter Ritchie, who was trained on the spot, as superintendent. Alex. Ritchie is engineer at the Ragged Rapids power-house.

The revenue the town derives from the various services is about as follows:

| | |
|-------------|---------|
| Water | \$5,000 |
| Light | 9,700 |
| Power | 6,537 |

\$21,237

The cost of running the works, with repairs, is about \$7,500, adding to which the interest on investment, leaves a profit of from \$600 to \$1,000 on present capacity. In addition the town has its street and municipal building lights free. There are both flat and meter rates. The flat rate for residences is 25c. per month for each 16 candle-power lamp. In stores,