



Toronto and Niagara Co.'s Power House. Designed by E. J. Lennox, architect, Toronto.

the generating station at the foot of the fall reverses the order of conveying power adopted by the other concerns on either side of the Niagara. The rapid formation of ice from the ceaseless volumes of spray at the foot of the falls renders it necessary that the work should be completed before ice forms; hence operations are being pushed with the utmost despatch. The 18-foot steel pipe referred to is 6,600 feet long, and half of this is now laid in its trench through the park. This pipe has a carrying capacity for

through which the water, after expending its power, will be discharged, right under the Horseshoe Falls; and at the lower or discharge end of this tunnel there remained, when the writer visited the works, only a thin shell of rock separating the workmen from the furious backwash of water and spray which drives against the wall. Sixty men are working in the tunnel day and night. The company is empowered to take 125,000 h.p. from the river, and the power house, whose classic outlines are shown in the accompanying engraving, has provision for eleven turbines of somewhat more than 10,000 h.p. each. These are being constructed by the General Electric Co., of Schenectady, and the Canadian General Electric Co., of Peterboro'. The contract calls for the completion of the whole works by June, 1905. The Toronto and Niagara Power Co. under its charter will have the right to expropriate lands, and has already completed surveys for both its transmission line and an electric railway to Toronto. This portion of the work is under the direction of W. T. Jennings, C.E., of Toronto. The right of way will have a minimum width of 80 feet. It is decided that the line will be erected on steel towers of a new type, which will lessen the risks of accident or leakage of current. B. R. Value, C.E., for seven years on the new Croton dam of New York, is resident engineer, and Robt. C. Brown, E.E., is chief electrical engineer of the transmission line.

The works of the Canadian Niagara Power Co. have already been described in the Canadian Engineer, this company having been the pioneer in the development on the



Toronto and Niagara Power Co.—Site of wheel pit in March, 1904.

60,000 h.p., and when this power is taken up and more required, another pipe of larger capacity but different form, the mouth for which is already installed, will be laid. The Messrs. Nunn are the contracting engineers, with Mr. Sohr, of Montana, as hydraulic expert, and J. R. Harsch in charge of the business department. Chas. H. Mitchell, of Niagara Falls, Ont., is resident hydraulic engineer.

The Toronto and Niagara Power Co. (the Electrical Development Co. of Ontario), the next in order, are pushing their works with the energy characteristic of the men at the head of its affairs, of whom Frederic Nicholls, of Toronto, is, perhaps, best known to electrical men. The concession held by this company is being executed by a company composed chiefly of the same shareholders, and known as the Electrical Development Co. of Ontario, which is now excavating the big wheel pit, over which the power house will stand, at a spot known as Tempest Point. The accompanying engravings show the rate at which the wheel pit is being sunk, the first photo, taken in March last, showing only the loose rock cleared away, while the second, taken early in May, shows a depth of nearly 70 feet excavated. The wheel pit is 416 ft. by 22 ft. and will be 144 ft. deep. At present it is sunk 90 feet in one part and 72 feet in the shallowest portion. There are 20 rock drills at work. The coffer dam surrounding the works is now practically complete, and pumping will begin a few days after this sketch is published. About 1,000 feet of the tunnel is finished,



Toronto and Niagara Power Co. From a photo taken May, 1904, showing progress of excavation work in wheel pit.