

worked successfully, but in surging water, such as was encountered below the falls, it was found necessary to use a large, strongly built raft held in place by three or four lead lines. As few plank as possible were used in making the raft, as it was found that the swells caught them too easily, thus making the raft very unstable and rendering accurate work very difficult and dangerous. A narrow steel tape wound on an improvised windlass and weighted by a lead ball, was used, and worked very satisfactorily.

Some time was spent in looking for gravel deposits and many test pits dug. We were unable to locate sufficient

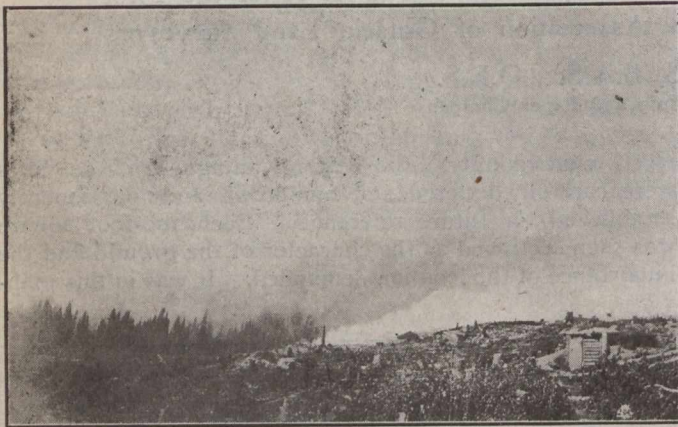


Fig. 3.—Showing Clearing by Which Damage from Forest Fires was Avoided

quantities, so arrangements were made to get sand and gravel from the Buskego pit on the Transcontinental Railway, and it was from this pit that all material required for the job was taken.

The breaking out of the war a few days after our preliminary plans had been delivered, delayed work until the autumn of 1915, when the spur line was cleared, sectioned and staked out. The following winter the writer spent three months with the engineering staff, preparing plans, and the following spring went north in charge of the work.

Morrow & Beatty, Ltd., Peterborough, Ont., secured the contract for mill, dam and power house, and the grading of  $3\frac{1}{2}$  miles of spur line, 30,000 cubic yards of earth being removed. The company laid the ties and steel, standard materials being used, while the Canadian Government Railways placed the ballast for our track-lifting gang. One small sink hole developed, requiring 40 cars of ballast, but the line is straight to the townsite and the grades easy. Notwithstanding scarcity of men and material, work was completed in October, and concreting started, sand being hauled from Boskego pit and rock from the power house and tail race excavations crushed at the works.

While the spur line was under construction, 500 acres of land around the mill and townsite was cleared in such a manner as to offer the best fire protection, all merchantable timber being sold to the contractor who installed and operated the company's mill, thus saving the importation of any form lumber.

The contractors erected a splendid set of camps to house 400 men, while the company erected about twenty 8-room houses and larger camps.

Fortunately the great conflagration which swept the north country during that summer had little left on the cleared area upon which to feed, and this condition, together with organized effort and the contractor's temporary water system prevented the loss of any buildings,

plant or material. (Fig. 3.) With the completion of the railway, additional men were employed and construction rushed during the severe winter and wet summer following, but notwithstanding all the adverse conditions, in-

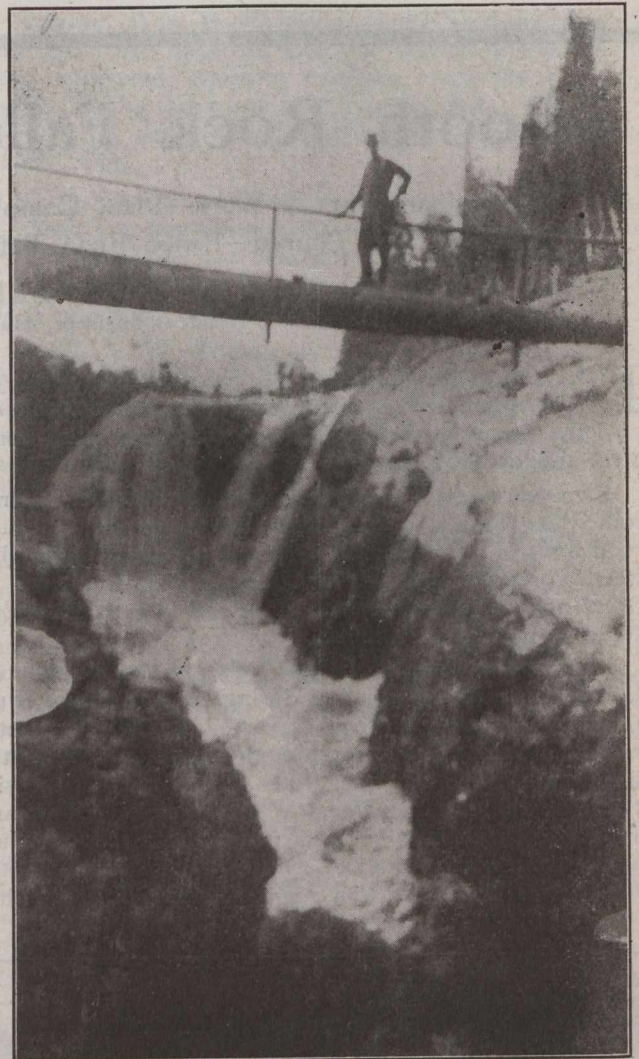


Fig. 4.—Jumping Place Channel on Mattagami River

cluding labor troubles, the plant was completed and in operation one year from the day the first concrete was poured, involving the excavation of 21,000 cubic yards of rock, 57,000 cubic yards of earth, placing 34,000 cubic yards of concrete and 1,000 tons of reinforcing and struc-

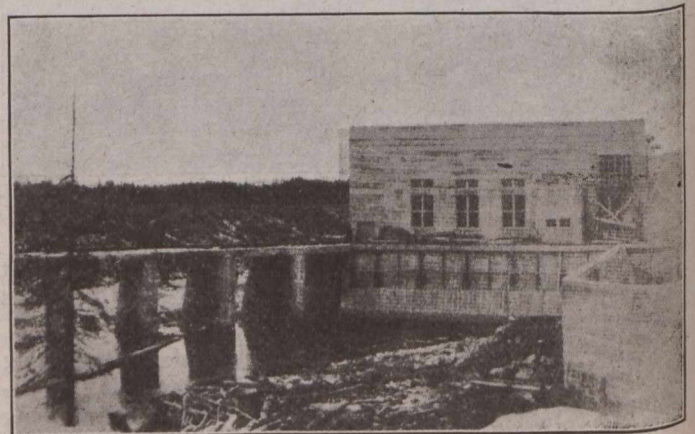


Fig. 5.—View of Power House