

and Gatineau are over 200 miles apart, they take their rise within a mile or so of each other about 150 miles north of Ottawa city, and at Kakabong Lake they are so close together than an arrangement can be made there to divert a considerable part of their contents towards Hudson Bay in case of need.



Fig. 4.—General View Timiskaming Storage Dam, Ontario Channel, Looking West.

"Investigation shows," says Mr. Coutlee's report, "that several lakes can be economically converted into reservoirs by dams at the outlets. The flood water, then, instead of rushing to waste, would be pent up in these reservoirs, and gradually let out later in the season. These reservoirs will exert a three-fold effect upon the discharge of the drainage basin, as follows: 1, Improve the potability of the water; 2, increase the depth for navigation; 3, steady the flow for power production."

While in the foregoing summary of advantages to be derived from the proposed storage system probably the most important is the beneficial effect upon the quality of the water, it was evidently not the intention of the engineers in charge to intimate that regulation of the flow would convert the Ottawa River into a safe and dependable source of water supply for the various towns and cities situated along its banks.

The St. Lawrence is a vastly larger stream than the Ottawa, with immense settling basins, and flowing over a limestone bed which tends to clarify its water. Yet, it is well to mention in this connection that Toronto is obliged to filter the St. Lawrence water, although taken outside the Island.

The supply of the Ottawa is too large to heat, but not large enough to prevent contamination. The increased and uniform flow to be secured by the construction of the conservation works, now well under way on the Upper

Ottawa, will bring about the only improvement in the water supply that can be counted upon for some time to come.

The Main Object of the Work.—It was chiefly with a view to improving the navigation and steadying the flow for power production that the conservation works were originally planned. While only the source of supply and storage which are available from Lake Timiskaming upward are yet being dealt with, it is the intention of the government to have surveys made of the drainage areas of all the tributaries of the main river, so that eventually their entire capacity may be rendered available for purposes of power generation and transportation. The magnitude of these latent resources may be grasped when it is considered that the Ottawa basin is 56,000 square miles in area, and contains the grandest aggregation of lakes and streams of any similar area in the known world. Ten thousand square miles of this lies south of the river and is drained by the Petawawa, Bon-nechere, Madawaska, Mississippi,

Rideau and South Nation Rivers. Five thousand square miles drain into the main stream through small tributaries. Forty thousand square miles lie north of the river. The Dumoine, Black, Coulonge, Gatineau, Lievre and Rouge Rivers drain 20,000 square miles, which includes the drainage area above Mattawa, forms the upper basin.

The scheme is, briefly, to dress the river up in convenient reaches by large rock-fill dams provided with



Fig. 5.—Timiskaming Storage Dam, Showing Method of Drilling Boulders Under Water; Dynamite is Loaded into the Drill Hole Through a Gas Pipe, and Exploded by Electric Battery.

sluice openings to pass the flow from basin to basin, locks being provided at each dam. It would be possible to build the dams required at any point as soon as the reservoirs are completed, and offer, in advance of a navigation